

# GraybaR

**GENERAL CATALOG**

**No. 103**









# HOW TO USE THE Section Finder



A BLACK GUIDE MARK is printed on the outer margin of the first page of each section of this catalog. In each instance the guide mark is printed directly opposite the wording on this end sheet which refers to the particular section.

1—Fold back the pages of the catalog as shown in the illustration, which will expose the edges of the guide marks.

2—Place the thumb of the right hand on the mark opposite the marginal section which contains the kind of goods sought.

This will open the catalog at the beginning of the desired section.

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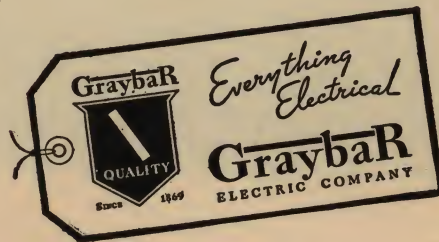
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CATALOG NO. 103

# GraybaR

## ELECTRIC COMPANY



YOU have in your possession what we believe to be the most complete catalog of electrical materials yet published. Approximately 50,000 items, covering most frequently or widely used items, are included. However, the scope of the electrical industry has increased so rapidly that even with this tremendous variety of listings you may not find just what you want. We hope, if this is true, that you will call our nearest office and warehouse (see list in back of catalog), and they will make every attempt to secure it for you.



PRICES IN THIS CATALOG ARE APPROXIMATE LIST PRICES  
AND SUBJECT TO CHANGE WITHOUT NOTICE



PRICE OF THIS CATALOG IS \$5.00 POSTPAID



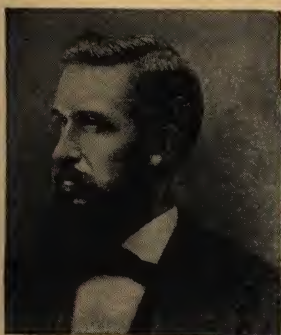
# CLAYDA

CLAYDA



CLAYDA is a new and improved  
type of paper, made from the best  
materials, and is of a high  
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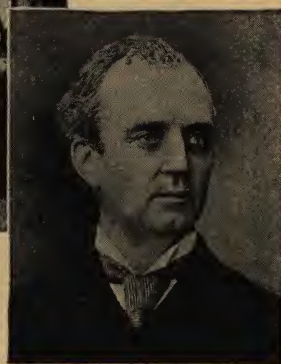
## AT YOUR SERVICE



**GRAY**



**BARTON**



*A 79-Year Background of Experience*

### THEN

The illustration above of the two founders—Gray and Barton—whose names were combined to make Graybar, and the original factory, sales and office force, almost tells the story without words.

The business in those early days before electric lighting, before central stations, and in fact, before 98% of the electrical things so familiar today, was a very simple business.

Bells, Buzzers, Telegraph Equipment, and Annunciators were made in this small plant and sold by a top-hatted sales force of two or three men.

### NOW

Graybar makes available through more than 90 distributing houses, the products of nearly 300 manufacturers. From coast to coast and border to border, wholesale electrical buyers can find prompt, intelligent service on almost everything electrical. Dependable products, knowledge of your electrical needs and the willingness to stand back of everything we supply are also features of Graybar Service.

We hope that this catalog of 1116 pages, listing the more frequently used electrical items of all types, except household appliances, will prove of value to you.



## PRICES

Prices found in this catalog are revised to agree with the latest lists at the time of going to press. It is understood that they are subject to change without notice and are, therefore, not offered by us as a quotation. It is contemplated that all prices are for shipment from our warehouse unless otherwise specified.

## ORDERS

Where possible, we have placed opposite each article a catalog number. When ordering give the catalog number and description of the article required.

You are requested to specify the routing over which you prefer shipments to be made. In the absence of specific instructions, we shall use our best judgment in selecting the route, but we are not responsible for extra trucking expenses at destination.

## TERMS

Our terms are 30 days net from date of invoice.

Payments may be made by check, bank draft, postal or express money order, drawn to the order of or endorsed to the order of the Graybar Electric Company, Inc.

Payments in currency through the mails even if registered are not recommended and are at sender's risk. We are not responsible for loss or miscarriage of the mails.

Receipts are not issued for remittances unless requested. Our endorsement on remittance is acknowledgment of the receipt of the funds.

We solicit new accounts on a credit basis, and in order to give prompt service, request that where you are not rated by the Commercial Agencies, references or other information of a credit character be forwarded with the order. These will be immediately acted upon, and the results held in strict confidence for our sole use and, when reasonably satisfactory, shipment will follow with all possible dispatch.

To avoid the delay incidental to communicating with references, etc., it would be mutually convenient, when immediate shipment is desired, to send cash in advance or instruct us to ship C. O. D. by express, or parcel post (insured if so instructed) or by freight subject to sight draft through a local bank against bill of lading.

We shall advise the terms on future orders promptly after communications from references are received.

## RETURNED GOODS

We can take no responsibility for any material returned without our authorization. Where we give shipping instructions for returning goods, they should be carefully followed to avoid delay and difficulty in issuing credit.

## SHIPMENTS

As experienced packers are employed, and as reasonable care is used in packing, we cannot be held responsible for breakage in packages which are delivered in "good order" by the carrier.

Shipments of glassware are made at your risk.

Goods ordered to be shipped by parcel post will be sent only at the purchaser's risk of loss or damage.

Goods are sold f. o. b. shipping point unless otherwise specifically stated.

## RESPONSIBILITY

All statistical information contained in this catalog, pertaining to *Strength* and *Proper Working Loads* of material, tools or machines is derived from tables compiled by the Manufacturers thereof, and is reprinted by us for the convenience of the buyer. This information is necessarily based upon *use under proper working conditions*. We assume no responsibility by this reprint, and in no way do we give you a guarantee, expressed or implied, on any material.



**Habirshaw Small Diameter Building Wire**

600 Volts, N.E.C.

Habirdure—Type T &amp; TW

All Thermoplastic Insulated Type



Type T & TW Building Wire differs from the conventional rubber insulated braided building wires in that the insulation consists of a wall of Habirdure, a synthetic resin. Habirdure has exceptionally high dielectric strength, is practically non-aging and is highly resistant to moisture, oil, acids, and alkalis. The tough nature of the material makes it unnecessary to use a braided covering for protection against mechanical injury. The omission of an overall braiding reduces the outside diameter to a minimum and makes Type T & TW the smallest of the Building Wires. Its hard, smooth surface makes it extremely easy to pull. Type T & TW is furnished in a range of bright, fadeless colors which are unaffected under the roughest possible handling during installation.

Habirdure Type T is approved in the National Electrical Code as general purpose wiring for operation at 60°C. in sizes up to 4/0 A.W.G. Sizes larger than 4/0 are approved for open wiring only.

Habirdure is also approved by the Underwriters' Laboratories (Guide Card 460-190Y file E 13092) for the following uses:

On switchboards where oil is not present and temperatures do not exceed 80°C.

Within appliances when exposed to oil and temperatures not exceeding 60°C.

Within appliances when exposed to air and temperatures not exceeding 80°C.

Habirdure Type TW is approved for use in wet locations in place of lead covered cable when the temperature does not exceed 60°C.

Habirdure Type T & TW can be supplied in the following standard colors, black, white, red, green, orange, blue, yellow, brown and purple.

Size A.W.G. or CM	Wall Thick. 64ths In.	Approx. O.D. In.	Approx. Wt., Lb. per 1000 Feet	Size A.W.G. or CM	Wall Thick. 64ths In.	Approx. O.D. In.	Approx. Wt., Lb. per 1000 Feet
20	1	.098	7	2	7	.433	267
	7	.102	8		19	.433	267
18	1	.106	9		37	.433	267
	7	.112	10	1	19	.508	339
	19	.112	10		37	.508	339
16	1	.118	13		61	.508	339
	7	.124	14	1/0	19	.549	415
	19	.125	14	2/0	19	.595	515
14	1	.131	20	3/0	19	.647	635
	7	.139	22	4/0	19	.705	785
	19	.140	22	250,000	37	.788	925
12	1	.148	28	300,000	37	.843	1095
	7	.158	31	350,000	37	.895	1260
	19	.159	31	400,000	37	.942	1430
10	1	.169	41	500,000	37	1.029	1760
	7	.182	45	600,000	61	1.143	2100
	19	.183	45	700,000	61	1.214	2420
8	1	.228	69	750,000	61	1.249	2600
	7	.244	75	800,000	61	1.282	2740
	19	.245	75	900,000	61	1.345	3100
6	1	.292	110	1,000,000	61	1.404	3420
	7	.323	119	1,250,000	91	1.577	4220
	19	.323	119	1,500,000	91	1.702	5050
	37	.323	119	1,750,000	127	1.817	5860
4	7	.372	176	2,000,000	127	1.922	6700
	19	.372	176				
	37	.372	176				

**Habirshaw Rubber Covered Braided Wire and Cable**  
600 Volts N.E.C.S.

Type R Code Grade—Solid—Single Conductor



Size A.W.G. No.	Thick. Insulation 64ths In.	Approx. O.D. Inches	Std. Pkg. Feet	Type Package Bundle	Shipping Wt. Lb. per 1000 Feet
*18	1	.10	5000	5 Coils	10
*16	1	.11	5000	5 Coils	14
18	2	.13	5000	5 Coils	14
16	2	.14	5000	5 Coils	18
14	2	.16	2500	†5 Coils	26
12	2	.18	2500	†5 Coils	35
10	3	.23	2500	†5 Coils	55
8	4	.28	500	†Coil	86
6	4	.32	500	†Coil	120
4	4	.38	500	†Coil	180
<b>Double Braided</b>					
14	2	.18	2500	5 Coils	30
12	2	.21	2500	5 Coils	39
10	3	.26	2500	5 Coils	62
8	4	.32	500	†Coil	96
6	4	.36	500	†Coil	135
4	4	.41	500	†Coil	190

Type R Code Grade—Stranded—Single Conductor



Size A.W.G. No.	Thick. Insulation 64ths In.	Approx. O.D. Inches	Std. Pkg. Feet	Type Package Bundle	Shipping Wt. Lb. per 1000 Feet
14	2	.17	2500	5 Coils	28
12	2	.19	2500	5 Coils	36
10	3	.23	2500	5 Coils	59
8	4	.30	500	†Coil	93
6	4	.36	500	†Coil	135
4	4	.40	500	†Coil	195
2	4	.46	500	†Coil	285
<b>Double Braided</b>					
14	2	.20	2500	5 Coils	31
12	2	.22	2500	5 Coils	41
10	3	.27	2500	5 Coils	67
8	4	.33	500	†Coil	103
6	4	.38	500	†Coil	145
4	4	.45	500	†Coil	205
2	4	.51	500	†Coil	295
1	5	.59	1000	Reel, 30"	435
1/0	5	.63	1000	Reel, 36"	560
2/0	5	.67	1000	Reel, 36"	660
3/0	5	.73	1000	Reel, 36"	780
4/0	5	.78	1000	Reel, 36"	930

\*Fixture Wire.

†Can also be furnished in 500-foot coils put up in individual cartons.

‡Single coils paper wrapped.

**Habirshaw Rubber Covered Flexible Cable**  
Type R Code Grade—Single Conductor

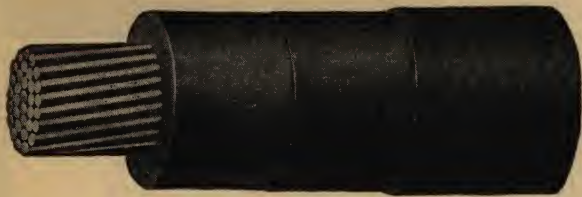
Size B&S	No. of Wires	Size Wires	Thickness Wall In.	Diameter Over All In.	Approx. Wt. Lb. per 1000 Feet
0000	133	.0399	5/64	.850	900
000	133	.0356	5/64	.780	730
00	133	.0317	5/64	.725	610
0	133	.0282	5/64	.670	490
1	133	.0251	5/64	.610	415
2	133	.0226	5/64	.550	325
4	49	.0291	5/64	.477	212
6	49	.0231	5/64	.423	146
8	49	.0183	5/64	.321	93
10	37	.0168	5/64	.240	55
12	19	.0186	5/64	.190	32
14	19	.0147	5/64	.170	24



## Habirshaw Rubber Covered Braided Wire and Cable

600 Volts N.E.C.

Type R Code Grade—Circular Mil —Stranded  
Single-Conductor



Size Circular Mils	Thick. Insul- ation 64ths In.	Approx. O.D. In.	Std. Pkg. Feet	Type Package	Shipping Wt. Lb. per 1000 Feet
250000	6	.86	1000	Reel, 36"	1090
300000	6	.92	1000	Reel, 42"	1390
350000	6	.87	1000	Reel, 42"	1560
400000	6	1.02	1000	Reel, 42"	1740
450000	6	1.06	1000	Reel, 42"	1905
500000	6	1.10	1000	Reel, 42"	2095
600000	7	1.21	500	Reel, 42"	2695
650000	7	1.24	500	Reel, 42"	2890
700000	7	1.28	500	Reel, 42"	3055
750000	7	1.32	500	Reel, 42"	3230
800000	7	1.35	500	Reel, 42"	3400
900000	7	1.41	500	Reel, 42"	3740
1000000	7	1.47	500	Reel, 42"	4070
1250000	8	1.64	500	Reel, 48"	5490
1500000	8	1.76	500	Reel, 48"	6305
1750000	8	1.88	500	Reel, 56"	7590
2000000	8	1.98	500	Reel, 56"	8420

Unless otherwise specified the above lengths and packing will be furnished. Where special lengths are required, this should be specially noted on orders:

## Type RD Code Grade—Twin Flat-Conductor



Solid

Size A.W.G. No.	Thick. Insul- ation 64ths In.	Approx. O.D. In.	Std. Pkg. Feet	Type Package Bundle	Shipping Wt. Lb. per 1000 Feet
14	2	.20x.35	500	Coil	63
12	2	.22x.39	500	Coil	81
10	3	.26x.49	500	Coil	125
8	4	.32x.60	500	Coil	190
6	4	.36x.68	1000	Reel, 30"	325

Stranded

Size A.W.G.	Thick. Insul- ation 64ths In.	Approx. O.D. In.	Std. Pkg. Feet	Type Package Bundle	Shipping Wt. Lb. per 1000 Feet
14	2	.21x.37	500	Coil	65
12	2	.23x.41	500	Coil	84
10	3	.27x.52	500	Coil	130
8	4	.33x.64	500	Coil	200
6	4	.38x.72	1000	Reel, 30"	340

Coils paper wrapped.

NOTE. For both cable and wire corrugated paper is used on reels up to 42 inches inclusive. Lagging is used only when specified. Sizes 48 to 84 inches inclusive, lagged.

## Reels

Some sizes and kinds of wires necessarily must be shipped on reels.

In such cases the reels will be billed at cost and credited at full billing value, if returned to mill in good condition within twelve months of shipping date.

Obtain return tags and shipping instructions before shipping reels.

## Habirshaw Rubber Covered Braided Wire Type RM, N. E. C. S.—3-Conductor—Solid 600 Volts



Each conductor of the 3-Conductor Rubber Covered House Wire is insulated by Black Core rubber compound. The covering over insulation is a 2 to 6 A.W.G., one rubber filled tape, and an 8 to 14 A.W.G., one saturated braid.

The conductors are grouped by twisting. They are filled with jute, covered by one rubber filled tape. The whole is covered by a saturated cotton braid.

Size A.W.G. Gauge	No. of Strands	Rubber Wall 64th Inch	Approx- imate O.D. Inches	Std. Pkg. Feet	Type Package	Shipping Wt., Lbs. per 1000 Feet
14	1	3	.413	1000	Reel, 30"	128
12	1	3	.450	1000	Reel, 30"	165
10	1	3	.579	1000	Reel, 30"	260
8	1	4	.703	1000	Reel, 36"	401
6	1	4	.792	1000	Reel, 36"	572

NOTE.—Corrugated paper used on reels up to 42 inches, inclusive, lagging used on above sizes only when specified. Sizes 48 to 84 inches inclusive, lagged.

## Habirshaw Rubber Covered Braided Cable Type RM, N.E.C.S.—3-Conductor—Stranded 600 Volts



The 3-conductor stranded code house cable is used under the same conditions as solid 3-conductor code house cable unless greater flexibility is required, especially in larger sizes.

Number of conductors, 3.

Range of sizes, 500,000 cm to 14 A. W. G., stranded.

Insulation on each conductor, "Black Core" rubber compound.

Covering over insulation, 500,000 cm to 6 A.W.G., one rubber filled tape, 8 to 14 A. W. G., one saturated braid.

Grouping of conductors, twisted.

Fillers, jute.

Covering over jute, one rubber filled tape.

Covering over all, one saturated braid.

Size A.W.G. Gauge	No. of Strands	Rubber Wall 64th Inch	Approx- imate O.D. Inches	Std. Pkg. Feet	Type Package	Shipping Wt., Lbs. per 1000 Feet
14	7	2	.433	1000	Reel, 30"	157
12	7	2	.474	1000	Reel, 30"	195
10	7	3	.592	1000	Reel, 30"	280
8	7	4	.742	1000	Reel, 36"	434
6	7	4	.839	1000	Reel, 36"	617
4	7	4	.942	1000	Reel, 42"	861
3	7	4	1.002	1000	Reel, 42"	1035
2	7	4	1.071	1000	Reel, 42"	1246
1	19	5	1.224	1000	Reel, 48"	1584
1/0	19	5	1.312	500	Reel, 42"	1914
2/0	19	5	1.409	500	Reel, 48"	2319
3/0	19	5	1.520	500	Reel, 48"	2824
4/0	19	5	1.645	500	Reel, 56"	3451
250000cm	37	6	1.815	500	Reel, 56"	4110
300000cm	37	6	1.933	500	Reel, 62"	4819
350000cm	37	6	2.043	500	Reel, 62"	5520
400000cm	37	6	2.144	500	Reel, 62"	6216
450000cm	37	6	2.239	500	Reel, 62"	6910
500000cm	37	6	2.329	500	Reel, 62"	7597

NOTE.—Corrugated paper used on reels up to 42 inches inclusive, lagging used on above sizes only when specified. Sizes 48 to 84 inclusive, lagged.



## Habirshaw Rubber and Lead Covered Cable

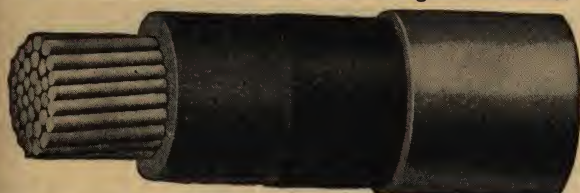
600 Volts N.E.C.S.

Type RL Code Grade—Solid—Single Conductor



Size A.W.G. No.	No. of Strands Concentric	Thickness Insulation 64ths In.	Thickness Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lb. per 1000 Ft.
18	1	2	2	.19	115
16	1	2	2	.20	125
14	1	2	2	.21	138
12	1	2	2	.22	156
10	1	3	3	.32	285
8	1	4	3	.38	335
6	1	4	4	.47	545
4	1	4	4	.52	640

Type RL Code Grade—Stranded—Single-Conductor



14	7	2	2	.22	141
12	7	2	2	.22	161
10	7	3	3	.32	300
8	7	4	3	.38	445
6	7	4	4	.47	575
4	7	4	4	.52	680
3	7	4	4	.55	745
2	7	4	4	.58	825
1	19	5	4	.64	1015
1/0	19	5	4	.68	1120
2/0	19	5	4	.73	1270
3/0	19	5	4	.78	1440
4/0	19	5	4	.84	1645

C. M.					
250,000	37	6	5	.95	2355
300,000	37	6	5	1.00	2595
350,000	37	6	5	1.06	2950
400,000	37	6	5	1.10	3180
450,000	37	6	5	1.14	3400
500,000	37	6	5	1.19	3610
600,000	61	7	6	1.33	4665
650,000	61	7	6	1.36	4890
700,000	61	7	6	1.40	5355
750,000	61	7	6	1.43	5575
800,000	61	7	6	1.47	5785
900,000	61	7	6	1.53	6210
1,000,000	61	7	6	1.59	6625
1,250,000	91	8	7	1.79	8645
1,500,000	91	8	7	1.91	9655
1,750,000	127	8	7	2.02	11300
2,000,000	127	8	7	2.13	12305

Type RDL Code Grade—Solid—Twin Flat-Conductor



18	1	2	2	.19x.33	185
16	1	2	2	.20x.35	200
14	1	2	2	.21x.35	202
12	1	2	3	.24x.42	253
10	1	3	3	.32x.55	465
8	1	4	3	.38x.66	560
6	1	4	4	.47x.81	900
4	1	4	4	.52x.91	1075

## Habirshaw Lead Covered Cable

Stranded Twin Flat Conductor

Type RDL—600 Volts, N.E.C.S.



Used under the same conditions as stranded single conductor lead covered wire. Sizes range from 0000 to 14 A.W.G., stranded. Black Core rubber compound insulation on each conductor. Rubber filled tape or braid covering over insulation. Conductors grouped parallel. When specified, round cable with 2 conductors twisted will be furnished. Covering over all is lead sheath. Type letter R D L.

Size A.W.G.	No. of Strands Concentric	Thickness Insulation 64ths Inch	Thickness Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lbs. per 1000 Ft.
14	7	2	2	.21x .35	210
12	7	2	2	.24x .42	265
10	7	3	3	.335x .575	485
8	7	4	3	.395x .695	580
6	7	4	4	.465x .804	955
4	7	4	4	.510x .900	1140
3	7	4	4	.540x .955	1270
2	7	4	4	.570x1.020	1670
1	19	5	5	.675x1.190	2170
1/0	19	5	5	.715x1.275	2550
2/0	19	5	5	.760x1.365	2835
3/0	19	5	5	.810x1.470	3185
4/0	19	5	5	.870x1.585	3835

## Habirshaw Lead Covered Cable

Type RML—600 Volts, N.E.C.S.



Used for 3-phase circuits. Stranded are used where extra flexibility is required in smaller sizes and always in larger sizes where solid conductors would make cable too stiff to handle.

Contains 3 conductors. Sizes range from 500,000 cm. to 14 A. W. G. Each conductor insulated with Black Core rubber compound. Insulation covered by rubber filled tape. Conductors twisted, filled with jute. Rubber-filled tape covering over jute. Lead sheath covering over all.

### Stranded, 3-Conductor Round

Size A.W.G.	No. of Strands Concentric	Thickness Insulation 64ths Inch	Thickness Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lbs. per 1000 Ft.
14	7	2	3	.46	450
12	7	2	3	.50	490
10	7	3	4	.64	890
8	7	4	4	.77	1060
6	7	4	4	.92	1595
4	7	4	5	1.03	2120
3	7	4	5	1.09	2455
2	7	4	5	1.16	2705
1	19	5	6	1.33	3695
1/0	19	5	6	1.42	4335
2/0	19	5	6	1.52	4785
3/0	19	5	6	1.63	5805
4/0	19	5	7	1.79	6910
250,000	37	6	7	1.96	7710
300,000	37	6	7	2.08	9110
350,000	37	6	7	2.19	9845
400,000	37	6	8	2.32	11145
450,000	37	6	8	2.42	11860
500,000	37	6	8	2.50	12580

### Solid, 3-Conductor Round

18	1	2	3	.41	375
16	1	2	3	.44	405
14	1	2	3	.46	435
12	1	2	3	.50	470
10	1	3	4	.64	850
8	1	4	4	.77	1005
6	1	4	4	.92	1265
4	1	4	5	1.03	2010



Habirshaw Solid Traffic Control Cable  
600 Volts



Habirshaw Traffic Signal Control Cables are suitable for general application in control circuits rated at 600 volts or less. For normal installations, and particularly in aerial circuits, this type of cable is constructed with an overall braid covering.

A cotton braid is normally furnished, conforming to the heavy braid requirements of A.S.T.M. Designation D27, latest revision thereof. However, if desired, a cotton loom covering can be supplied.

Habirshaw Traffic Signal Control Cables can be supplied in accordance with various specifications, however, the specification for Rubber Insulated, Heavy Braid or Loom Covered Multi-Conductor Signal Cable of the International Municipal Signal Association, Inc., is normally followed.

The individual rubber insulated conductors of Habirshaw Traffic Signal Control Cable are normally enclosed in a colored cotton braid, conforming to N.E.M.A. Standard Color Coding.

Size A.W.G. No.	CONDUCTORS		Thick- ness Insu- lation Inches	BRAID FINISHED CABLE	
	No.	Diameter Inches		Overall Diameter Inches	Weight per 1000 Feet
14	2	.06408	$\frac{3}{64}$	.43x.24	78
14	3	.06408	$\frac{3}{64}$	.50	138
14	4	.06408	$\frac{3}{64}$	.55	172
14	5	.06408	$\frac{3}{64}$	.60	209
14	6	.06408	$\frac{3}{64}$	.66	248
14	7	.06408	$\frac{3}{64}$	.66	269
14	8	.06408	$\frac{3}{64}$	.75	324
14	9	.06408	$\frac{3}{64}$	.80	357
14	10	.06408	$\frac{3}{64}$	.86	408
14	12	.06408	$\frac{3}{64}$	.90	464
12	2	.08081	$\frac{3}{64}$	.47x.27	99
12	3	.08081	$\frac{3}{64}$	.53	173
12	4	.08081	$\frac{3}{64}$	.59	218
12	5	.08081	$\frac{3}{64}$	.65	265
12	6	.08081	$\frac{3}{64}$	.72	317
12	7	.08081	$\frac{3}{64}$	.72	355
12	8	.08081	$\frac{3}{64}$	.81	415
12	9	.08081	$\frac{3}{64}$	.87	467
12	10	.08081	$\frac{3}{64}$	.93	522
12	12	.08081	$\frac{3}{64}$	.96	597
10	2	.1019	$\frac{3}{64}$	.52x.29	131
10	3	.1019	$\frac{3}{64}$	.58	255
10	4	.1019	$\frac{3}{64}$	.64	285
10	5	.1019	$\frac{3}{64}$	.72	355
10	6	.1019	$\frac{3}{64}$	.79	401
10	7	.1019	$\frac{3}{64}$	.79	470
10	8	.1019	$\frac{3}{64}$	.88	545
10	9	.1019	$\frac{3}{64}$	.94	605
10	10	.1019	$\frac{3}{64}$	1.01	688
10	12	.1019	$\frac{3}{64}$	1.05	778

Conductors of stranded construction can be furnished, also cables with lead sheath.

Nos. 14 and 12 can be furnished with  $\frac{3}{64}$  inch insulation where required.

Habirshaw Signal Wire and Cable  
Association of American Railroads, Signal Division  
Standard

Railway signal wire is made to conform with the exacting specifications of the Association of American Railroads, Signal Section Standard and represents the standard engineering practice in this line.

The present Association of American Railroads, Signal Section Standard specification for rubber insulation is a development resulting from a study of the manufacture, inspection and use of rubber insulated wire extending over a period of many years, by a strong and representative committee of signal engineers who have given considerable time and attention to this subject. The specification has undergone changes in this time and every change has improved the product and confirmed the opinion of signal engineers as to the excellent quality of the insulation which it exacts. Habirshaw also makes a higher grade signal wire known as Habirite signal wire which is recommended for locations where operating conditions are exceptionally severe.

Habirshaw has specialized on A.A.R. Signal wire and makes all standard types including the following:

Rubber Insulated Signal Wire for 600 Volts or Less



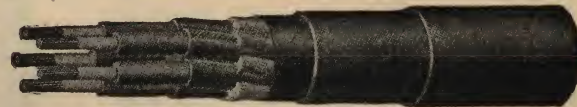
Single conductor, solid or stranded.  
Range of sizes, Nos. 1/0 to 18 A.W.G.  
Insulation, A.A.R. Signal Section compound.  
Covering over insulation is one cotton braid, weatherproof saturated and finished.  
Thickness of insulation: Nos. 18 and 16 A.W.G.,  $\frac{3}{32}$  inch; Nos. 14 to 9 A.W.G.,  $\frac{5}{64}$  inch; Nos. 8 to 4 A.W.G.,  $\frac{3}{32}$  inch; and Nos. 2 to 1/0 A.W.G.,  $\frac{1}{16}$  inch.

Aerial Braided Cable, for 600 Volts or Less



Number of conductors as specified.  
Range of sizes, Nos. 1/0 to 18 A.W.G., solid or stranded.  
Insulation, A.A.R. Signal Section compound.  
Paraffined jute fillers. Has one rubber filled tape over assembly; one cotton braid weatherproof saturated and finished overall. Can be furnished lead covered if requested.  
Thickness of insulation: Nos. 18 and 16 A.W.G.,  $\frac{3}{32}$  inch; Nos. 14 to 9 A.W.G.,  $\frac{5}{64}$  inch; Nos. 8 to 4 A.W.G.,  $\frac{3}{32}$  inch; and Nos. 2 to 1/0 A.W.G.,  $\frac{1}{16}$  inch.

Habirshaw Control Cable



Station control cables are used for the remote control of outdoor or automotive substations and are installed in conduit being either braid or lead covered.

Number of conductors, as required.  
Usual size, 19 No. 22 A.W.G. or 19 No. 25 A.W.G.  
Insulation on each conductor, rubber compound of quality specified.  
Thickness of insulation each conductor,  $\frac{3}{64}$  inch, for 600-volt service unless otherwise specified.  
Covering over insulation, colored dry cotton braid.  
Grouping of conductors, cabled.  
Fillers, dry jute.  
Covering over assembly, one rubber filled tape.  
Covering overall, one weatherproof saturated cotton braid, lead rubber jacket, neoprene or nometal sheath, as specified.  
Identification of circuits may be made by ridged tracer in each layer of conductors, by color of rubber, or by colored braids on the conductors according to N.E.M.A. color code.  
Upon receipt of inquiry stating conditions of service, our Engineering Department will furnish additional data.



## Habirshaw Habirprene Sheathed Parkway Cable



Single Conductor



Two-Conductor



Three-Conductor

Habirshaw Neoprene Sheathed Parkway cables are designed for use either in ducts or buried directly in the ground.

**Insulation.** These cables are regularly furnished with Habirduet type insulation, but can be supplied with any of the standard types of insulation.

**Sheath.** A tough, abrasion resisting Habirprene sheath designed to withstand exposure to moisture, alkalies and acids and meeting the requirements of A.S.T.M. Spec. D-752.

Tough rubber sheaths can be furnished as an alternate to Neoprene.

Single Conductor Cables have no separation between insulation and sheath.

Multiple Conductor Cables have a rubber-filled tape over each conductor: jute fillers and a rubber-filled tape over the assembly under the sheath.

These cables are designed to conform to the dimensional requirements of IPCEA for rubber-sheathed cables.

When conditions are unusually severe, cables with heavier sheaths can be furnished.

Data for sizes and voltages not listed herein will be furnished upon application.

## 600 Volts

## Single-Conductor

Size A.W.G.	Strands	Thickness Insulation 64ths Inches	Thickness Sheath 64ths Inches	Approx. O.D. Inches	Approx. Wt., Lb. per 1000 Feet
14	1	3	1	.19	40
12	1	3	1	.21	49
10	1	3	1	.23	66
8	1	4	1	.29	104
6	7	4	2	.38	147
4	7	4	2	.42	190
2	7	4	2	.48	286
1	19	5	3	.59	376
1/0	19	5	3	.63	418
2/0	19	5	3	.67	558
3/0	19	5	3	.72	686
4/0	19	5	3	.78	842

## Two-Conductor (Round)

14	1	3	3	.47	98
12	1	3	3	.51	140
10	1	3	4	.61	168
8	1	4	4	.73	241
6	7	4	5	.87	357
4	7	4	5	.96	522
2	7	4	5	1.06	665
1	19	5	6	1.16	888
1/0	19	5	6	1.34	980
2/0	19	5	6	1.43	1278
3/0	19	5	6	1.53	1530
4/0	19	5	6	1.65	1852

## Three-Conductor

14	1	3	3	.50	149
12	1	3	3	.53	192
10	1	3	4	.65	247
8	1	4	4	.77	373
6	7	4	5	.92	501
4	7	4	5	1.03	707
2	7	4	5	1.13	953
1	19	5	6	1.34	1264
1/0	19	5	6	1.43	1522
2/0	19	5	6	1.53	1794
3/0	19	5	6	1.64	2182
4/0	19	5	7	1.79	2740

2001 to 3000 Volts  
Single-Conductor

Thickness Insulation 64ths Inches	Thickness Sheath 64ths Inches	Approx. O.D. Inches	Approx. Wt., Lb. per 1000 Feet
8	2	.55	264
8	3	.64	391
8	3	.68	458
8	3	.72	537
8	3	.76	631
8	3	.82	763
8	3	.88	851

## Two-Conductor (Round)

8	6	1.24	652
8	6	1.36	903
8	6	1.44	1047
8	6	1.53	1230
8	6	1.62	1449
8	7	1.75	1734
8	7	1.87	2101

## Three-Conductor

8	6	1.33	995
8	6	1.46	1341
8	6	1.54	1515
8	6	1.63	1778
8	7	1.76	2133
8	7	1.87	2561
8	7	2.00	3057

## 4001 to 5000 Volts

## Single-Conductor

10	3	.64	327
10	3	.70	437
10	3	.74	503
10	3	.78	584
10	3	.83	617
10	3	.88	820
10	4	.94	1037

## Two-Conductor (Round)

10	6	1.37	757
10	6	1.44	1042
10	6	1.56	1158
10	6	1.65	1369
10	7	1.77	1592
10	7	1.88	1885
10	7	1.99	2248

## Three-Conductor

10	6	1.47	1145
10	6	1.59	1496
10	6	1.68	1680
10	7	1.80	2009
10	7	1.90	2363
10	7	2.01	2758
10	7	2.13	3273

Nos. 14 and 12, 600 volts can be furnished with 2/64 inch insulation where required.



## Habirshaw Steel Tape Parkway Cable



Single-Conductor



2-Conductor—Flat

Parkway cables are used for transmission and distribution where it is preferable to bury the cables directly in the ground rather than to put them in ducts. Any kind of cable will be furnished with park cable covering, but the following types are in general use for distribution purposes.

Insulation on each conductor, Black Core rubber compound for 5000 volts or less. For higher voltage, special high voltage rubber.

Covering over insulation, rubber filled tape. Covering over tape, lead sheath.

Covering over lead sheath, asphalted jute.

Protective armor, two ungalvanized steel tapes, wound in the same direction, the outer tape covering the spaces between turns of the inner tape.

Outside covering, asphalted jute.

Parkway cables with galvanized steel tapes will be furnished when so specified.

Habirshaw Parkway Cables are made to conform to I.P.C.E.A. standards for rubber insulation and metallic coverings.

## 0/600 Volts

## 1-Conductor—Rubber Insulated

Size A.W.G. No.	No. of Strands Con- centric	Thick. Insu- lation 64ths In.	Thick. Lead Covering 64ths In.	Thick. Steel Tape Armor, In.	FINISHED CABLE		
					Overall O.D. In.	Net Wt. Lb. per 1000 Feet	Ship. Wt. Lb. per 1000 Feet
14	1	3	3	.020	.632	430	516
12	1	3	3	.020	.649	463	556
10	1	3	3	.020	.670	507	608
8	1	4	3	.020	.727	610	732
6	1	4	3	.020	.761	696	835
4	7	4	3	.020	.831	863	1036
2	7	4	4	.020	.922	1205	1446
1	19	5	4	.020	.993	1400	1680
1/0	19	5	4	.020	1.035	1543	1851
2/0	19	5	4	.020	1.079	1715	2058
3/0	19	5	4	.020	1.156	1915	2298
4/0	19	5	5	.020	1.245	2405	2886

## 2-Conductor—Rubber Insulated—Flat

14	1	3	3	.020	.657x	.845	569	683
12	1	3	3	.020	.674x	.879	625	750
10	1	3	4	.020	.726x	.952	835	1002
8	1	4	4	.020	.783x1	.066	1053	1264
6	1	4	4	.020	.817x1	.134	1193	1434
4	7	4	5	.020	.918x1	.307	1718	2062
2	7	4	5	.030	1.038x1	.485	2265	2718
1	19	5	5	.030	1.109x1	.629	2672	3206
1/0	19	5	6	.030	1.182x1	.740	3245	3894
2/0	19	5	6	.030	1.227x1	.834	3605	4326
3/0	19	5	6	.030	1.278x1	.934	4036	4843
4/0	19	5	6	.030	1.336x2	.050	4550	5460

## 3-Conductor—Rubber Insulated

14	1	3	4	.020	.934	1015	1218
12	1	3	4	.020	.971	1112	1334
10	1	3	4	.020	1.014	1226	1471
8	1	4	4	.020	1.138	1542	1850
6	1	4	5	.020	1.243	2015	2418
4	7	4	5	.030	1.463	2800	3360
1	7	4	5	.030	1.582	3370	4044
2	19	5	6	.030	1.767	4290	5148
1/0	19	5	6	.030	1.855	4760	5712
2/0	19	5	6	.030	1.952	5300	6360
3/0	19	5	6	.030	2.063	5980	7176
4/0	19	5	7	.030	2.219	7200	8640

Nos. 14 and 12 for 600 volts can be furnished with  $\frac{3}{4}$  inch insulation where required.

## Habirshaw Steel Tape Parkway Cable

Continued

## 1001/2000 Volts

## 1-Conductor—Rubber Insulated

Size A.W.G. No.	No. of Strands Con- centric	Thick. Insu- lation 64ths In.	Thick. Lead Covering 64ths In.	Thick. Steel Tape Armor In.	FINISHED CABLE		
					Overall O.D. In.	Net Wt. Lb. per 1000 Feet	Ship. Wt. Lb. per 1000 Feet
14	1	5	3	.020	.694	537	644
12	1	5	3	.020	.711	571	685
10	1	5	3	.020	.732	615	738
8	1	5	3	.020	.758	666	799
6	1	6	3	.020	.823	810	972
4	7	6	4	.020	.925	1129	1355
2	7	6	4	.020	.985	1348	1618
1	19	7	4	.020	1.056	1545	1854
1/0	19	7	4	.020	1.097	1692	2028
2/0	19	7	4	.020	1.167	1863	2236
3/0	19	7	5	.020	1.250	2293	2752
4/0	19	7	5	.020	1.308	2581	3097

## 2001/3000 Volts

## 1-Conductor—Rubber Insulated

14	1	7	3	.020	.757	645	774
12	1	7	3	.020	.774	680	816
10	1	7	3	.020	.795	724	869
8	1	7	3	.020	.821	780	936
6	1	8	4	.020	.917	1072	1286
4	7	8	4	.020	.987	1277	1532
2	7	8	4	.020	1.047	1492	1790
1	19	8	4	.020	1.087	1617	1940
1/0	19	8	4	.020	1.153	1765	2118
2/0	19	8	4	.020	1.198	1934	2320
3/0	19	8	5	.020	1.281	2387	2864
4/0	19	8	5	.020	1.339	2668	3202

## 3001/4000 Volts

## 1-Conductor—Rubber Insulated

14	1	9	3	.020	.819	752	902
12	1	9	3	.020	.836	787	944
10	1	9	3	.020	.857	833	1000
8	1	9	4	.020	.914	1045	1254
6	1	9	4	.020	.948	1146	1375
4	7	9	4	.020	1.028	1352	1622
2	7	9	4	.020	1.078	1561	1873
1	19	9	4	.020	1.143	1690	2028
1/0	19	9	4	.020	1.184	1840	2208
2/0	19	9	5	.020	1.259	2247	2696
3/0	19	9	5	.020	1.312	2480	2976
4/0	19	9	5	.020	1.370	2752	3302

## 4001/5000 Volts

## 1-Conductor—Rubber Insulated

14	1	10	3	.020	.851	806	967
12	1	10	3	.020	.868	842	1010
10	1	10	4	.020	.920	1040	1248
8	1	10	4	.020	.946	1118	1342
6	1	10	4	.020	.980	1220	1464
4	7	10	4	.020	1.050	1425	1710
2	7	10	4	.020	1.135	1630	1956
1	19	10	4	.020	1.175	1765	2118
1/0	19	10	5	.020	1.247	2142	2570
2/0	19	10	5	.020	1.292	2339	2807
3/0	19	10	5	.020	1.344	2570	3084
4/0	19	10	5	.030	1.443	3008	3610

## 2001/3000 Volts

## 2-Conductor—Rubber Insulated—Flat

8	1	7	5	.020	.908x1	.276	1550	1860
6	1	7	5	.020	1.033x1	.475	2035	2442

## 3001/4000 Volts

## 2-Conductor—Rubber Insulated—Flat

8	1	9	5	.030	1.030x1	.469	1971	2365
6	1	9	5	.030	1.064x1	.538	2182	2618

## 4001/5000 Volts

## 2-Conductor—Rubber Insulated—Flat

8	1	10	5	.030	1.062x1	.533	2120	2544
6	1	10	5	.030	1.096x1	.601	2330	2796



## Habitshaw Varnished Cambric Insulated Cable



Varnished Cambric Insulated Cable is used: In power stations and sub-stations for connecting machinery and apparatus of all voltages (see Apparatus Cable and Station Cable); In buildings in place of rubber insulated cable, where special reliability is desired; On vibrating structures where paper insulation cannot be used due to the crystallization of the lead sheath.

Insulation consists of varnished cambric tapes applied helically to the conductor with intervening layers of mineral base grease.

Varnished Cambric Insulated Cable is covered as follows: Apparatus cable, saturated cotton braid or varnished treated braid; Station cable, flameproof braid; Building mains, a saturated cotton braid or a rubber filled tape and one saturated cotton braid; Underground cable, lead sheath; Cable for outdoor structures, a rubber filled cotton tape, two galvanized steel tapes, and a layer of asphalted jute under and over the armor.

Upon receipt of inquiry stating conditions of service, our Engineering department will furnish additional data.

## Specifications

## Walls of Varnished Cambric, Inches

Single Conductor and Multiple Conductor Shielded Cables				Multiple Conductor Belted Cable			
Rated Voltage Volts Phase to Phase	Size A.W.G. or C.M.	Neutral Grounded	Neutral Ungrounded	Rated Voltage Volts Phase to Phase	Size A.W.G. or C.M.	NEUTRAL GROUNDED Cond. Belt	NEUTRAL UNGROUNDED Cond. Belt
0-600	14-8	.047	.047	0-600	14-8	.047	.047
	7-2	.063	.063		7-2	.063	.063
	1-4/0	.078	.078		1-4/0	.078	.078
	213,000-500,000	.094	.094		213,000-500,000	.094	.094
	500,001-1,000,000	.109	.109		500,001-1,000,000	.094	.031
*601-1000	Over 1,000,000	.125	.125	*601-1000	Over 1,000,000	.109	.031
	14-2	.063	.063		14-2	.063	.063
	1-4/0	.078	.078		1-4/0	.078	.078
	213,000-500,000	.094	.094		213,000-500,000	.094	.094
	500,001-1,000,000	.109	.109		500,001-1,000,000	.094	.031
1001-2000	Over 1,000,000	.125	.125	1001-2000	Over 1,000,000	.094	.031
	12-2	.078	.078		12-2	.078	.078
	1-4/0	.094	.094		1-4/0	.094	.094
	213,000-500,000	.094	.094		213,000-500,000	.094	.094
	500,001-1,000,000	.109	.109		500,001-1,000,000	.094	.031
2001-3000 *(Incl. 2500)	Over 1,000,000	.125	.125	2001-3000 *(Incl. 2500)	Over 1,000,000	.109	.031
	10-2	.094	.094		10-2	.078	.031
	1-4/0	.094	.094		1-4/0	.094	.031
	213,000-500,000	.109	.109		213,000-500,000	.094	.031
	500,001-1,000,000	.109	.109		500,001-1,000,000	.094	.047
3001-4000	Over 1,000,000	.125	.125	3001-4000	Over 1,000,000	.109	.047
	8-4/0	.109	.109		8-4/0	.094	.047
	213,000-500,000	.125	.125		213,000-500,000	.094	.047
	500,001-1,000,000	.125	.125		500,001-1,000,000	.094	.063
	Over 1,000,000	.141	.141		Over 1,000,000	.109	.063
4001-5000 *(Incl. 4500)	8-4/0	.141	.141	4001-5000 *(Incl. 4500)	8-4/0	.094	.063
	213,000-1,000,000	.156	.156		213,000-1,000,000	.109	.063
	Over 1,000,000	.156	.156		Over 1,000,000	.109	.078
	8-4/0	.141	.156		8-4/0	.094	.078
	213,000-1,000,000	.156	.172		213,000-1,000,000	.109	.078
5001-6000	Over 1,000,000	.156	.172	5001-6000	Over 1,000,000	.109	.078
	8 and Larger	.156	.172		8 and Larger	.109	.078
	6 and Larger	.172	.188		6 and Larger	.109	.094
	8001-9000	.188	.203		8001-9000	.125	.094
	9001-10000	.188	.234		9001-10000	.141	.094
10001-11000	6 and Larger	.203	.250	10001-11000	6 and Larger	.156	.094
	11001-12000	.219	.250		11001-12000	.156	.109
	12001-13000	.234	.281		12001-13000	.172	.109
	13001-14000	.234	.297		13001-14000	.188	.109
	*14001-15000	.250	.328		*14001-15000	.203	.109
15001-16000	4 and Larger	.266	.344	15001-16000	4 and Larger	.219	.109
	6 and Larger	.281	.359		6 and Larger	.219	.109
	16001-17000	.281	.359		16001-17000	.219	.109
	17001-18000	.297	.391		17001-18000	.219	.109
	18001-19000	.313	.422		18001-19000	.219	.109
19001-20000	2 and Larger	.328	.438	19001-20000	2 and Larger	.219	.109
	20001-21000	.344	.453		20001-21000	.219	.109
	21001-22000	.359	.453		21001-22000	.219	.109
	*22001-23000	.375	.453		*22001-23000	.219	.109
	23001-24000	.391	.453		23001-24000	.219	.109
24001-25000	2 and Larger	.406	.453	24001-25000	2 and Larger	.219	.109
	25001-26000	.422	.453		25001-26000	.219	.109
	26001-27000	.438	.453		26001-27000	.219	.109
	27001-28000	.453	.453		27001-28000	.219	.109

\*Recommended by the N.E.M.A.—N.E.L.A. Joint Committee on voltage standardization as "preferred voltage ratings" for general apparatus.

All cables have an operating tolerance of 5% above the rated voltage except those rated at 15,000 volts and below which have no operating tolerance. All cables for three-phase circuits are rated on the conductor to conductor basis.

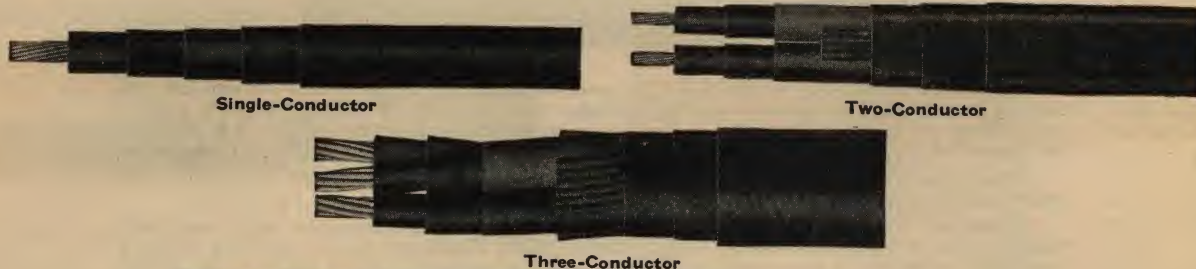
Unless otherwise specified, two-conductor cable will be of the round type.

Specifications listed above are recommended by I.P.C.E.A.



## Habirshaw Trench Type Nometal Cable

### For Direct Burial in Earth



Habirshaw Nometal Cable is adapted to the following types of services:  
**POWER COMPANIES.** Low and medium tension networks, series and multiple street lighting, underground service entrances, rural underground distribution, etc.  
**RAILROADS.** Signalling, power and lighting for yards.  
**MUNICIPALITIES.** Street lighting, traffic signals.  
**AIRPORTS.** Lighting and signalling.  
**INDUSTRIAL PLANTS.** Lighting and power in yards.

The salient feature of Habirshaw Nometal Cable is that it alone of all the non-metallic trench cables has a continuous, homogeneous, non-fibrous sheath. The Habirshaw Nometal sheath is of vulcanized oil compound, a material known for half a century for water and acid-proofness, resistance to air and ozone, oxidation and decay, and general permanence.

Habirshaw Nometal Cable can be supplied with a special covering when it is desired to install it into ducts for network systems or other special service. Complete information sent on request.

#### 600 Volts

##### Single-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
14	3	50	38	62	.488
12	3	50	38	62	.505
10	3	50	38	62	.526
8	4	50	38	62	.584
6	4	50	38	62	.639
4	4	50	38	62	.687
2	4	50	38	62	.747
1	5	50	38	62	.818
1/0	5	50	38	62	.859
2/0	5	50	38	62	.904
3/0	5	50	38	62	.956
4/0	5	50	38	62	1.014

##### Two-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
14	3	50	38	62	.806x .518
12	3	50	38	62	.840x .535
10	3	50	38	62	.882x .550
8	4	50	38	62	.996x .613
6	4	50	38	62	1.108x .669
4	4	50	38	62	1.204x .717
2	4	50	38	62	1.324x .777
1	5	50	38	62	1.506x .878
1/0	5	50	58	62	1.588x .929
2/0	5	50	58	62	1.678x .974
3/0	5	50	58	62	1.782x 1.026
4/0	5	50	58	62	1.898x 1.084

##### Three-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
14	3	50	38	62	.848
12	3	50	38	62	.884
10	3	50	38	62	.930
8	4	50	38	62	1.055
6	4	50	38	62	1.175
4	4	50	38	62	1.279
2	4	50	38	62	1.408
1	5	50	58	62	1.601
1/0	5	50	58	62	1.690
2/0	5	50	58	62	1.786
3/0	5	50	58	62	1.898
4/0	5	50	58	62	2.023

#### 3000 Volts

##### Single-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
10	7	50	38	62	.651
8	7	50	38	62	.677
6	8	50	38	62	.764
4	8	50	38	62	.812
2	8	50	38	62	.872

##### Two-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
8	7	50	38	62	1.184x .707
6	8	50	38	62	1.358x .794
4	8	50	58	62	1.494x .882

##### Three-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
8	7	50	38	62	1.257
6	8	50	58	62	1.485
4	8	50	58	62	1.588
2	8	50	58	62	1.717

#### 5000 Volts

##### Single-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
10	10	50	38	62	.744
8	10	50	38	62	.771
6	10	50	38	62	.826
4	10	50	38	62	.874

##### Two-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
10	10	50	38	62	1.320x .775
8	10	50	38	62	1.372x .801
6	10	50	58	62	1.524x .897
4	10	50	58	62	1.620x .945

##### Three-Conductor

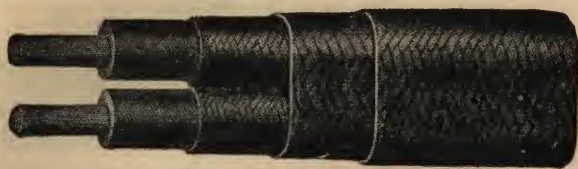
Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
10	10	50	38	62	1.404
8	10	50	58	62	1.500
6	10	50	58	62	1.621
4	10	50	58	62	1.724
2	10	50	58	62	1.853

Nos. 14 and 12 can be furnished with  $\frac{3}{16}$  inch insulation where required.



## Habirshaw Pole and Bracket Cable

600 Volts



This type of cable is recommended for wiring between the pole base and the lighting fixture inside an ornamental pole and between the overhead circuit and the lighting fixture on a street lighting bracket; for internal or external wiring, or for any other application requiring a two-conductor, flexible cable insulated for 600 volts and less between conductors, and for higher voltages used in series street lighting between the conductor and ground.

### Non-Belted—Two-Conductor

The construction consists of tinned copper conductors, rubber insulation, rubber filled tape or saturated braid on each conductor, the two insulated conductors laid parallel with one rubber filled tape and single cotton braid overall saturated with weatherproof compound and finish.

Application: For 600-volt service for plain conductors, and 0 to 600 volts, 2001 to 3000 volts, 3001 to 4000 volts service between conductors and ground.

### Belted—Two-Conductor

The construction consists of tinned copper conductors, rubber insulation, rubber filled tape or saturated braid on each conductor, the two insulated conductors laid parallel, rubber belt, rubber filled tape and single braid or double braid overall, saturated with weather-proof compound and finished.

Application: For 600-volt service between conductors, and 4001 to 6000 volts, 7001 to 9000 volts, and 9001 to 10,000 volts between conductors and ground.

## Habirshaw Armored Submarine Cable



Armored cable, or submarine cable, as it is sometimes called, is used under water for crossing rivers, bays and lakes.

Armored cable may be insulated with paper, varnished cambric or rubber compound. If insulated with paper or varnished cambric, a lead sheath is required. If insulated with rubber compound, a lead sheath is preferable, but may be omitted where the water, in which the cable is to be laid, does not contain injurious impurities and does not attain an unusually high temperature. If the cable is rubber insulated and not lead covered, it has a rubber filled cotton tape.

The leaded or taped core is served with jute yarn, run through hot asphalt compound, then armored with galvanized steel wires, \*run through hot asphalt compound, served with two layers of yarn and finally run through asphalt compound.

The asphalt and jute over the armor may be omitted, if desired.

Upon receipt of inquiry stating the conditions of service, our Engineering Department will furnish additional data.

\*Hot asphalt compound is also applied during armoring at the points where the armor wires come into contact, insuring complete sealing of the armor.

## Habirshaw Braided A.V.C Power Cable

Stranded Conductor  
600 Volts



Insulated with felted asbestos, varnished cambric, felted asbestos and asbestos braid.

For general power wiring, either open or in conduit where heat with limited moisture or vapor is encountered. It will maintain uninterrupted service under conditions prohibitive to ordinary insulations.

Steel mills, boiler rooms, industrial plants, refineries, power plants, soaking pits, furnaces, ovens, lehrs, tender frames, and steam tunnels present many applications for this heat and moisture-resistant cable.

Finished black with a compound that will resist heat, flame, moisture, oil and corrosive vapors.

Where exposed to excessive moisture, lead covered cables should be used.

Approved by Underwriters' Laboratories.

Available in 1000, 2000, 3000, 5000, and 8000-volt construction.

Size A.W.G.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	STD. SHIP. LENGTHS, FT.		Approx. Net Wt. Lb. per 1000 Feet
				Coils	Reels	
18	7/.0151	.045	.255	1000	....	33
16	7/.0193	.058	.270	1000	....	39
14	7/.0242	.073	.285	1000	....	46
12	7/.0305	.092	.305	1000	....	59
10	7/.0385	.116	.330	500	....	76
8	7/.0486	.146	.360	500	....	100
6	7/.0612	.184	.395	500	1000	141
5	7/.0688	.206	.420	...	1000	166
4	7/.0772	.232	.445	...	1000	198
3	7/.0867	.260	.470	...	1000	238
2	7/.0974	.292	.505	...	1000	287
1	19/.0664	.332	.585	...	1000	371
1/0	19/.0745	.373	.625	...	1000	476
2/0	19/.0837	.418	.670	...	1000	571
3/0	19/.0940	.470	.720	...	1000	690
4/0	19/.1055	.528	.780	...	1000	839

Size C.M.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	STD. SHIP. LENGTHS, FT.		Approx. Net Wt. Lb. per 1000 Feet
				Coils	Reels	
250,000	37/.0822	.575	.885	...	500	1017
300,000	37/.0900	.630	.940	...	500	1188
350,000	37/.0973	.681	.995	...	500	1357
400,000	37/.1040	.728	1.040	...	500	1525
450,000	37/.1103	.772	1.085	...	500	1692
500,000	37/.1162	.814	1.125	...	500	1860
550,000	61/.0950	.855	1.165	...	500	2027
600,000	61/.0992	.893	1.205	...	500	2193
650,000	61/.1032	.929	1.240	...	500	2359
700,000	61/.1071	.964	1.275	...	500	2524
750,000	61/.1109	.998	1.310	...	500	2689
800,000	61/.1145	1.031	1.345	...	500	2854
850,000	61/.1180	1.062	1.375	...	500	3018
900,000	61/.1215	1.093	1.405	...	500	3182
950,000	61/.1248	1.123	1.435	...	500	3346
1,000,000	61/.1280	1.152	1.465	...	500	3510

\*A tolerance of plus or minus 5% is necessary due to variations in process of manufacture. Dielectric test voltages in kilovolts, 2.5 for sizes 18 to 8, 3.0 for 6 to 4/0 and 4.0 for 250,000 to 1,000,000 C.M.



## Habirshaw Lead Sheathed A.V.C. Power Cable

Stranded Conductor  
600 Volts



Recommended for use in conduit exposed to widely varying conditions throughout its length.

It is particularly suitable for power stations located at tidewater where ducts are sometimes flooded but other parts of the same circuit are exposed to high temperature, also where condensation is especially heavy, as in ashpits where it is the practice to wet down ashes.

Lead sheathed cable is of standard A.V.C. construction, except that a lead sheath has been substituted for the asbestos braid.

The lead sheath enables this cable to stand up successfully when completely and continually submerged.

### Approved by Underwriters' Laboratories

Size A.W.G.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	Std. Ship. Length of Reels Ft.	Approx. Net Wt. Lb. per 1000 Feet
18	7/.0151	.045	.290	1000	209
16	7/.0193	.058	.305	1000	224
14	7/.0242	.073	.320	1000	243
12	7/.0305	.092	.340	1000	267
10	7/.0385	.116	.360	1000	301
8	7/.0486	.146	.390	1000	348
6	7/.0612	.184	.430	1000	412
5	7/.0688	.206	.450	1000	454
4	7/.0772	.232	.480	1000	504
3	7/.0867	.260	.505	1000	563
2	7/.0974	.292	.570	1000	774
1	19/.0664	.332	.620	1000	890
1/0	19/.0745	.373	.660	1000	1005
2/0	19/.0837	.418	.705	1000	1144
3/0	19/.0940	.470	.755	1000	1313
4/0	19/.1055	.528	.815	1000	1516

Size C.M.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	Std. Ship. Length of Reels Ft.	Approx. Net Wt. Lb. per 1000 Feet
250,000	37/.0822	.575	.955	500	2033
300,000	37/.0900	.630	1.010	500	2269
350,000	37/.0973	.681	1.060	500	2500
400,000	37/.1040	.728	1.105	500	2724
450,000	37/.1103	.772	1.150	500	2944
500,000	37/.1162	.814	1.190	500	3161
550,000	61/.0950	.855	1.265	500	3786
600,000	61/.0992	.893	1.305	500	3923
650,000	61/.1032	.929	1.340	500	4140
700,000	61/.1071	.964	1.375	500	4356
750,000	61/.1109	.998	1.410	500	4570
800,000	61/.1145	1.031	1.440	500	4783
850,000	61/.1180	1.062	1.470	500	5042
900,000	61/.1215	1.093	1.505	500	5201
950,000	61/.1248	1.123	1.535	500	5407
1,000,000	61/.1280	1.152	1.560	500	5613

\*A tolerance of plus or minus 5% is necessary due to variations in process of manufacture. Dielectric test voltages in kilovolts, 2.5 for sizes 18 to 8, 3.0 for 6 to 4/0 and 4/0 for 250,000 to 1,000,000 C.M.

## Habirshaw All-Asbestos Power and Rheostat Cable

Stranded Conductor  
600 Volts



All-Asbestos Power and Rheostat Cable is recommended for open wiring at 600 volts or less where subjected to heat, fumes, oil, grease, or fire hazard, and in applications such as grid jumper connections, connections from grids to faceplates, switchboard wiring in hot locations, elevator and locomotive panel wiring.

Approved by the Underwriters' Laboratories.

Size A.W.G.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	Std. Ship. Lengths, Ft. Coils Reels	Approx. Net Wt. Lb. per 1000 Feet
18	7/.0151	.045	.215	1000	26
16	7/.0193	.058	.230	1000	31
14	7/.0242	.073	.245	1000	38
12	7/.0305	.092	.265	1000	48
10	7/.0385	.116	.290	500	63
8	7/.0486	.146	.320	500	87
6	7/.0612	.184	.395	500	132
5	7/.0688	.206	.420	1000	157
4	7/.0772	.232	.445	1000	188
3	7/.0867	.260	.470	1000	227
2	7/.0974	.292	.505	1000	274
1	19/.0664	.332	.605	1000	388
1/0	19/.0745	.373	.645	1000	462
2/0	19/.0837	.418	.690	1000	555
3/0	19/.0940	.470	.740	1000	672
4/0	19/.1055	.528	.800	1000	819

Size C.M.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	Std. Ship. Lengths, Ft. Coils Reels	Approx. Net Wt. Lb. per 1000 Feet
250,000	37/.0822	.575	.905	500	982
300,000	37/.0900	.630	.960	500	1219
350,000	37/.0973	.681	1.015	500	1317
400,000	37/.1040	.728	1.060	500	1482
450,000	37/.1103	.772	1.105	500	1647
500,000	37/.1162	.814	1.145	500	1812
550,000	61/.0950	.855	1.185	500	1977
600,000	61/.0992	.893	1.225	500	2142
650,000	61/.1032	.929	1.260	500	2307
700,000	61/.1071	.964	1.295	500	2470
750,000	61/.1109	.998	1.330	500	2631
800,000	61/.1145	1.031	1.365	500	2796
850,000	61/.1180	1.062	1.395	500	2961
900,000	61/.1215	1.093	1.425	500	3126
950,000	61/.1248	1.123	1.455	500	3291
1,000,000	61/.1280	1.152	1.485	500	3456

\*A tolerance of plus or minus 5% is necessary due to variations in process of manufacture. Dielectric test voltage 1.5 kilovolts on all sizes.

## Habirshaw Motor Lead Wire

Single Conductor—600 Volts



Habirshaw extra flexible motor lead wire is available with tinned copper or bare copper conductor, with or without cotton separator, insulation N.E.C. rubber and weather-proof or lacquer finish braid.

Size A.W.G.	Thickness Inches	Stranding	Coils Feet	Ship. Wt., Lb. per 1000 Ft.
18	1/32	16x30	500	14
16	1/32	26x30	500	18
14	3/64	41x30	500	32
12	3/64	65x30	500	43
10	3/64	105x30	500	55
8	1/16	133x29	250	121
6	3/64	133x27	250	136
4	1/16	133x25	250	194



## Phelps Dodge Bare Copper Wire and Cable

The Bare Copper Wire and Cable listed below are manufactured by the American Copper Products Division of Phelps Dodge Copper Products Corporation at their mills, Bayway, New Jersey.

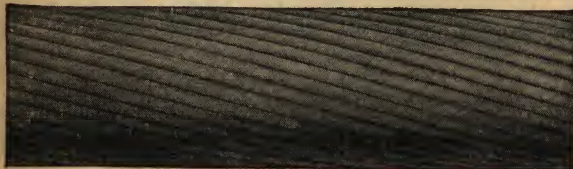
They are all made, unless otherwise specified, to the specifications of the American Society for Testing Materials which are the recognized American Standard.

### Solid Conductor



Size A.W.G. No.	Diam. In.	Cap. C.M.	WEIGHT, POUNDS		
			Per 1000 Feet	Per Mile	Std. Pkg. in Coils
14	.064	4107	12.43	66	250
13	.072	5178	15.68	83	250
12	.081	6530	19.77	104	250
11	.091	8234	24.92	132	250
10	.102	10380	31.43	166	250
9	.114	13090	39.63	209	250
8	.128	16510	49.97	264	250
7	.144	20820	63.02	333	250
6	.162	26250	79.46	420	250
5	.182	33100	100.2	529	250
4	.204	41740	126.4	667	250
3	.229	52630	159.3	841	250
2	.258	66370	200.9	1061	250
1	.289	83690	253.3	1338	250

### Concentric Strands



Size A.W.G.	Standard Stranding	WEIGHT, POUNDS	
		Per 1000 Feet	Per Mile
8	7	51	269
6	7	81	428
5	7	102	540
4	7	129	681
3	7	163	858
2	7	205	1082
1	7	253	1364
1/0	7	326	1720
2/0	7	411	2170
3/0	7	518	2736
4/0	19 or 7	653	3450

Size C.M.	Standard Stranding	WEIGHT, POUNDS	
		Per 1000 Feet	Per Mile
250,000	19	772	4076
300,000	19	926	4891
350,000	19	1081	5706
400,000	19	1235	6521
450,000	37	1389	7336
500,000	37	1544	8151
550,000	37	1698	8965
600,000	37	1853	9781
650,000	61	2007	10600
700,000	61	2161	11410
750,000	61	2316	12227
800,000	61	2470	13040
850,000	61	2624	13850
900,000	61	2779	14670
950,000	61	2933	15490
1,000,000	61	3088	16300

## Phelps Dodge Weatherproof Wire and Cable

### Triple Braid—URC Finish

Weather-resisting wires and cables (weatherproof) with the saturant and finish of similar character known to the industry as Type URC.

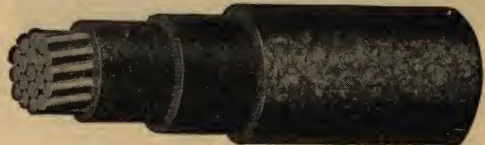
### Solid



Size A.W.G. No.	Wt. Lb. per 1000 Feet	STANDARD PACKAGE, Ft.		APPROX. NET WT., Lb.	
		Reels	Coils	Reels	Coils
*14	25	....	900	....	23
*12	35	....	700	....	25
*10	53	4500	1750	239	93
9	62	....	....	....	....
*8	75	3400	2200	255	165
6	112	2860	1430	320	160
5	135	2200	1100	297	149
4	164	1700	875	279	144
3	199	1400	1400	279	279
2	260	1250	1250	325	325
1	316	990	990	313	313
1/0	407	3500	760	1425	309
2/0	502	3000	600	1506	301
3/0	629	2500	500	1572	315
4/0	767	2000	400	1534	307

\*Also furnished in bundles, 100 pounds to a bundle.

### Stranded



Size A.W.G. No.	Wt. Lb. per 1000 Feet	Standard Package Reels Feet	Net Wt. Lb. Std. Pkg. Reels
8	78	4000	312
6	115	3000	345
5	140	2000	280
4	170	2000	340
3	206	1500	309
2	270	1250	338
1	328	1000	328
0	424	4000	1700
00	522	3500	1830
000	653	3000	1960
0000	800	2500	2000

Size C.M. No.	Wt. Lb. per 1000 Feet	Standard Package Reels Feet	Net Wt. Lb. Std. Pkg. Reels
250,000	985	3500	3448
300,000	1,174	3000	3522
350,000	1,345	2500	3363
400,000	1,553	2400	3727
450,000	1,724	2000	3448
500,000	1,894	2000	3788
600,000	2,235	1600	3576
700,000	2,650	1500	3975
750,000	2,822	1400	3951
800,000	2,992	1250	3740
900,000	3,332	1000	3332
1,000,000	3,674	1000	3674
1,250,000	4,508	800	3606
1,500,000	5,380	700	3766
1,750,000	6,193	600	3716
2,000,000	7,008	500	3504



## Phelps Dodge Slow Burning Wire and Cable

Underwriters' Approved

Solid—Triple Braid



All three braids of cotton are thoroughly saturated with white fireproof compound. The compound used on the outer braid becomes very hard, but still the wire retains its flexibility. As this insulation does not deteriorate in a continued high temperature, it is especially suitable for engine and boiler rooms, furnaces, and foundries.

Size A.W.G. No.	Wt. Lb. per 1000 Feet	STANDARD PACKAGE, Ft.		APPROX. NET WT., Lb.	
		Reels	Coils	Reels	Coils
14	40	....	....	....	*100
12	55	....	....	....	*100
10	80	....	....	....	*100
8	110	....	....	....	*100
6	160	....	1430	....	229
4	220	....	875	....	193
2	320	....	1250	....	400
1	385	....	990	....	361
1/0	495	3500	760	1733	376
2/0	600	3000	600	1800	360
3/0	760	2500	500	1900	380
4/0	925	2000	400	1850	370

\*Approximate weight per bundle.

## Stranded—Triple Braid



Size A.W.G. No.	Wt. Lb. per 1000 Feet	STANDARD PACKAGE, Ft.		APPROX. NET WT., Lb.	
		Reels	Coils	Reels	Coils
8	105	....	2000	....	210
6	165	....	1500	....	248
5	195	....	1250	....	181
4	230	....	1000	....	230
3	280	....	1320	....	370
2	335	....	1000	....	335
1	380	....	800	....	304
1/0	510	3500	700	1785	357
2/0	625	3000	600	1875	375
3/0	785	2500	500	1963	393
4/0	960	4000	400	3840	384

## Phelps Dodge Trolley Wire

Round



Grooved

Figure  
Eight

1-0 2-0 3-0 4-0

Furnished round, grooved, or in figure 8.

Size A.W.G. No.	Diameter Mils	Ohms per 1000 Feet	Ohms per Mile	Wt. Lb. per 1000 Feet	Wt. Lb. per Mile
1/0	325	.1011	.5340	319.5	1687
2/0	365	.0802	.4235	402.8	2127
3/0	410	.0636	.3359	507.9	2682
4/0	460	.0504	.2663	640.5	3382

## Phelps Dodge Rectangular Copper Bus Bar



P-D Rectangular Copper Bus Bars are guaranteed to have a minimum conductivity of 98%. They are manufactured by the extrusion process, instead of being drawn assuring even temper and full straight edges.

P-D bars fully comply with the latest A.S.T.M. specification, but can be manufactured to individual specification when specified.

Size Bar Inches	Cross Section Square Inches	*Carrying Capacity Amperes	Weight Pounds per Foot
1/8x2	.250	250	.962
1/8x2 1/2	.313	313	1.205
1/8x3	.375	375	1.444
1/4x2	.500	500	1.925
1/4x2 1/2	.625	625	2.41
1/4x3	.750	750	2.89
1/4x4	1.000	1000	3.85
3/8x3	1.125	1125	4.33
3/8x4	1.500	1500	5.77

\*At current density of 1000 amperes.

Phelps Dodge Seamless Copper Bus Tubing  
Bulldog Brand

The advantages due to the inherent properties of tubular bus bars for high amperages have been a deciding factor in the increasing use of copper tubes for outdoor busses. Bulldog copper bus bar tubes have a minimum conductivity of 98%, can be bent to meet special field conditions, or flattened for terminal connections.

Uniform in temper, accurately manufactured to size by the extrusion process, Bulldog copper bus tubes lend themselves readily to clamp connectors or internal splices.

## Standard Weight Copper Tubing

I.P.S. Inches	O.D. Inches	I.D. Inches	Area C.M.	Carrying Capacity Amperes	Weight Pounds Per Foot
1/2	.840	.626	317.471	317	.955
3/4	1.05	.822	423.524	424	1.30
1	1.315	1.063	633.016	633	1.82
1 1/4	1.66	1.368	851.200	851	2.63
1 1/2	1.90	1.600	1,017.900	1018	3.20
2	2.375	2.063	1,368.136	1368	4.22

## Extra Heavy Copper Tubing

I.P.S. Inches	O.D. Inches	I.D. Inches	Area C.M.	Carrying Capacity Amperes	Weight Pounds Per Foot
1/2	.840	.542	411.834	412	1.25
3/4	1.05	.736	560.804	561	1.71
1	1.315	.951	824.824	825	2.51
1 1/4	1.66	1.272	1,137.616	1138	3.46
1 1/2	1.90	1.494	1,377.964	1178	4.19
2	2.375	1.933	1,904.136	1904	5.80

Phelps Dodge P-M-G Rigid Conduit and  
EMT Tubing

P-M-G conduit is available in both standard heavy wall rigid conduit and thin-wall electrical metallic tubing. P-M-G metal is a rustless alloy of unusually high tensile strength.

This conduit is recommended for use where severe corrosive conditions exist and is suitable for such installations as chemical plants, railroad terminals, dairy barns, textile finishing and dye plants, also installations in coastal areas or where conduit might be directly subjected to salt spray.

P-M-G conduit is fully approved by Underwriters' Laboratories and fittings of the same alloy are available from many manufacturers. Complete bulletin on request.



# General Cable \*Guardian Rubber Insulated Building Wire and Cable

Code Grade Type R—600 Volts  
(Conforming to all Requirements of Federal Specification J-C-103)

Heat-Resisting Grade—Type RH—600 Volts  
(Conforming to all Requirements of Federal Specification J-C-103)

Moisture-Resisting Grade Type RW—600 Volts  
(Approved by Underwriters' Laboratories for Use in Wet Locations)

## Solid Conductors, Single Braid



Size A.W.G.	No. of Strands	CONDUCTOR Diameter Individual Strands Inches	Diameter Inches	Insulation Thickness Inches	Overall Diameter Inches	Wt. Lb. per 1000 Ft.
14	Solid	.....	.06408	$\frac{3}{64}$	.16	22
12	Solid	.....	.06408	$\frac{3}{64}$	.19	26
10	Solid	.....	.08081	$\frac{3}{64}$	.21	35
8	Solid	.....	.1019	$\frac{3}{64}$	.23	50
6	Solid	.....	.1285	$\frac{3}{64}$	.28	82
4	Solid	.....	.1620	$\frac{3}{64}$	.32	115

## Stranded Conductors, Single Braid

14	7	.0242	.0726	$\frac{3}{64}$	.17	24
12	7	.0242	.0726	$\frac{3}{64}$	.20	27
10	7	.0305	.0915	$\frac{3}{64}$	.19	33
8	7	.0305	.0915	$\frac{3}{64}$	.22	37
6	7	.0385	.116	$\frac{3}{64}$	.24	54
4	7	.0486	.146	$\frac{3}{64}$	.30	83

## Solid Conductors, Double Braid or Tape and Braid

14	Solid	.....	.06408	$\frac{3}{64}$	.19	25
12	Solid	.....	.06408	$\frac{3}{64}$	.22	29
10	Solid	.....	.08081	$\frac{3}{64}$	.21	34
8	Solid	.....	.1019	$\frac{3}{64}$	.24	38
6	Solid	.....	.1285	$\frac{3}{64}$	.26	55
4	Solid	.....	.1620	$\frac{3}{64}$	.32	88
2	Solid	.....	.2043	$\frac{3}{64}$	.36	124

## Stranded Conductors, Double Braid or Tape and Braid

14	7	.0242	.0726	$\frac{3}{64}$	.20	27
12	7	.0242	.0726	$\frac{3}{64}$	.23	30
10	7	.0305	.0915	$\frac{3}{64}$	.22	37
8	7	.0305	.0915	$\frac{3}{64}$	.25	40
6	7	.0385	.116	$\frac{3}{64}$	.27	59
4	7	.0486	.146	$\frac{3}{64}$	.33	95
2	7	.0612	.184	$\frac{3}{64}$	.38	134
1	19	.0772	.232	$\frac{3}{64}$	.45	195
1/0	19	.0867	.260	$\frac{3}{64}$	.48	235
2/0	19	.0974	.292	$\frac{3}{64}$	.51	287
3/0	19	.0664	.332	$\frac{3}{64}$	.59	359
4/0	19	.0745	.373	$\frac{3}{64}$	.63	438
MCM	37	.0837	.418	$\frac{3}{64}$	.67	535
250	37	.0940	.470	$\frac{3}{64}$	.73	657
300	37	.1055	.528	$\frac{3}{64}$	.78	807
350	37	.0822	.575	$\frac{3}{64}$	.86	961
400	37	.0900	.630	$\frac{3}{64}$	.92	1137
500	37	.0973	.681	$\frac{3}{64}$	.97	1308
600	37	.1040	.728	$\frac{3}{64}$	1.02	1479
700	37	.1162	.814	$\frac{3}{64}$	1.10	1814
800	61	.0992	.893	$\frac{3}{64}$	1.21	2184
900	61	.1071	.964	$\frac{3}{64}$	1.28	2515
1000	61	.1109	.998	$\frac{3}{64}$	1.32	2689
1250	91	.1145	1.031	$\frac{3}{64}$	1.35	2851
1500	91	.1215	1.094	$\frac{3}{64}$	1.41	3174
1750	127	.1280	1.152	$\frac{3}{64}$	1.47	3515
2000	127	.1172	1.289	$\frac{3}{64}$	1.64	4399
		.1284	1.412	$\frac{3}{64}$	1.76	5243
		.1174	1.526	$\frac{3}{64}$	1.88	6060
		.1255	1.631	$\frac{3}{64}$	1.98	6881

\*Trade Mark.

†Not listed in National Electrical Code.

‡Types R and RH only.

§Type RW Only.

For current carrying capacity—National Electrical Code—see index.

# General Cable \*Guardian Synthetic Insulated Building Wire and Cable

\*Gencaseal Type T Small Diameter—600 Volts

\*Gencaseal Type TW Small Diameter—600 Volts

(Approved by Underwriters' Laboratories for Use in Wet Locations)



## Solid Conductors, No Outer Covering

Size A.W.G.	Insulation Thickness Inches	Overall Diameter Inches	Wt. Lb. per 1000 Feet	Size A.W.G.	Insulation Thickness Inches	Overall Diameter Inches	Wt. Lb. per 1000 Feet
14	$\frac{3}{64}$	.130	20	10	$\frac{3}{64}$	.168	41
12	$\frac{3}{64}$	.147	28	8	$\frac{3}{64}$	.227	69

## Stranded Conductors, No Outer Covering

14	$\frac{3}{64}$	.140	22	3/0	$\frac{5}{64}$	.634	633
12	$\frac{3}{64}$	.158	30	4/0	$\frac{5}{64}$	.692	787
10	$\frac{3}{64}$	.182	44	MCM			
8	$\frac{3}{64}$	.246	75	250	$\frac{6}{64}$	.763	914
6	$\frac{3}{64}$	.314	119	300	$\frac{6}{64}$	.819	1084
4	$\frac{3}{64}$	.363	176	350	$\frac{6}{64}$	.870	1267
2	$\frac{3}{64}$	.423	263	500	$\frac{6}{64}$	1.002	1751
1	$\frac{5}{64}$	.496	339	600	$\frac{7}{64}$	1.112	2098
1/0	$\frac{5}{64}$	.537	416	750	$\frac{7}{64}$	1.217	2595
2/0	$\frac{5}{64}$	.583	514	900	$\frac{7}{64}$	1.314	3084
				1000	$\frac{7}{64}$	1.373	3414

\*Trade-mark.

For current carrying capacity—N.E.C.—see index.

# General Cable \*Guardian Rubber Insulated Building Wire and Cable

Lead Sheathed Code Grade Type RL—600 Volts

(Conforming to all Requirements of Federal Specification J-C-101-b)

Lead Sheathed—Heat-Resisting

Grade Type RHL—600 Volts

(Conforming to all Requirements of Federal Specification J-C-103)

## Solid Conductors



Size A.W.G.	No. Strands	CONDUCTORS Diam. Individual Strands In.	Diam. In.	Insulation Thickness In.	Sheath Thickness In.	Overall Diam. In.	Wt. Lb. per 1000 Feet
14	Solid	.....	.06408	$\frac{3}{64}$	$\frac{3}{64}$	.22	95
12	Solid	.....	.08081	$\frac{3}{64}$	$\frac{3}{64}$	.24	115
10	Solid	.....	.1019	$\frac{3}{64}$	$\frac{3}{64}$	.32	260
8	Solid	.....	.1285	$\frac{3}{64}$	$\frac{3}{64}$	.38	320
6	Solid	.....	.1620	$\frac{3}{64}$	$\frac{3}{64}$	.47	520
4	Solid	.....	.2043	$\frac{3}{64}$	$\frac{3}{64}$	.51	620

## Stranded Conductors



14	7	.0242	.0726	$\frac{3}{64}$	$\frac{3}{64}$	.22	102
12	7	.0305	.0915	$\frac{3}{64}$	$\frac{3}{64}$	.24	127
10	7	.0385	.116	$\frac{3}{64}$	$\frac{3}{64}$	.32	260
8	7	.0486	.146	$\frac{3}{64}$	$\frac{3}{64}$	.38	320
6	7	.0612	.184	$\frac{3}{64}$	$\frac{3}{64}$	.47	520
4	7	.0772	.232	$\frac{3}{64}$	$\frac{3}{64}$	.52	620
2	7	.0974	.292	$\frac{3}{64}$	$\frac{3}{64}$	.58	770
1	19	.0664	.332	$\frac{5}{64}$	$\frac{5}{64}$	.64	930
1/0	19	.0745	.373	$\frac{5}{64}$	$\frac{5}{64}$	.68	1060
2/0	19	.0837	.418	$\frac{5}{64}$	$\frac{5}{64}$	.73	1210
3/0	19	.0940	.470	$\frac{5}{64}$	$\frac{5}{64}$	.78	1370
4/0	19	.1055	.528	$\frac{5}{64}$	$\frac{5}{64}$	.84	1570
MCM							
250	37	.0822	.575	$\frac{6}{64}$	$\frac{6}{64}$	.95	2030
300	37	.0900	.630	$\frac{6}{64}$	$\frac{6}{64}$	1.00	2270
350	37	.0973	.681	$\frac{6}{64}$	$\frac{6}{64}$	1.06	2490
400	37	.1040	.728	$\frac{6}{64}$	$\frac{6}{64}$	1.10	2720
500	37	.1162	.814	$\frac{6}{64}$	$\frac{6}{64}$	1.19	3160
600	61	.0992	.893	$\frac{7}{64}$	$\frac{7}{64}$	1.33	3980
700	61	.1071	.964	$\frac{7}{64}$	$\frac{7}{64}$	1.40	4420
800	61	.1109	.998	$\frac{7}{64}$	$\frac{7}{64}$	1.43	4620
900	61	.1145	1.031	$\frac{7}{64}$	$\frac{7}{64}$	1.47	4850
1000	61	.1215	1.093	$\frac{7}{64}$	$\frac{7}{64}$	1.53	5265
1250	91	.1280	1.152	$\frac{7}{64}$	$\frac{7}{64}$	1.59	5690
1500	91	.1172	1.289	$\frac{8}{64}$	$\frac{8}{64}$	1.79	6890
1750	127	.1284	1.412	$\frac{8}{64}$	$\frac{7}{64}$	1.91	7875
2000	127	.1174	1.526	$\frac{8}{64}$	$\frac{7}{64}$	2.02	8890
		.1255	1.631	$\frac{8}{64}$	$\frac{7}{64}$	2.13	9850

\*Trade-mark.

†Not listed in National Electrical Code.

For current carrying capacity—N.E.C.—see index.



## General Cable \*Guardian Rubber Insulated Building Wire and Cable

Code Grade Type RD—600 Volts  
(Conforming to all Requirements of Federal Specification J-C-103)

Heat-Resisting Grade Type RHD—600 Volts  
(Conforming to all Requirements of Federal Specification J-C-103)

Moisture-Resisting Grade Type RWD—600 Volts  
(Approved by Underwriters' Laboratories for Use in Wet Locations)



Solid Conductors, Double Braid

Size A.W.G.	No. of Strands	CONDUCTORS Diam. Individual Strands In.	Diam. Inches	Insulation Thickness Inches	Overall Diameter Inches	Wt. Lb. per 1000 Ft.
†14	Solid	.....	.06408	$\frac{3}{64}$	.35x.19	54
14	Solid	.....	.06408	$\frac{3}{64}$	.41x.22	62
†12	Solid	.....	.08081	$\frac{3}{64}$	.39x.21	66
12	Solid	.....	.08081	$\frac{3}{64}$	.45x.24	82
10	Solid	.....	.1019	$\frac{3}{64}$	.49x.26	114
8	Solid	.....	.1285	$\frac{3}{64}$	.60x.32	174
6	Solid	.....	.1620	$\frac{3}{64}$	.68x.36	285

Stranded Conductors, Double Braid

†14	7	.0242	.0726	$\frac{3}{64}$	.37x.20	56
14	7	.0242	.0726	$\frac{3}{64}$	.43x.23	64
†12	7	.0305	.0915	$\frac{3}{64}$	.41x.22	68
12	7	.0305	.0915	$\frac{3}{64}$	.47x.25	84
10	7	.0386	.116	$\frac{3}{64}$	.52x.27	124
8	7	.0486	.146	$\frac{3}{64}$	.64x.33	186
6	7	.0612	.184	$\frac{3}{64}$	.72x.38	295

### Lead Sheathed Code Grade Type RDL—600 Volts

(Conforming to all Requirements of Federal Specification J-C-103)

### Lead Sheathed Heat-Resisting Grade Type RHDL—600 Volts

(Conforming to all Requirements of Federal Specification J-C-103)



Solid Conductors

Size A.W.G.	No. of Strands	CONDUCTORS Diam. Individual Strands In.	Diam. In.	Insulation Thickness In.	Sheath Thickness In.	Overall Diameter In.	Wt. Lb. per 1000 Feet
14	Solid	.....	.06408	$\frac{3}{64}$	$\frac{3}{64}$	.38x.22	166
12	Solid	.....	.08081	$\frac{3}{64}$	$\frac{3}{64}$	.45x.27	297
10	Solid	.....	.1019	$\frac{3}{64}$	$\frac{3}{64}$	.55x.32	410
8	Solid	.....	.1285	$\frac{3}{64}$	$\frac{3}{64}$	.66x.38	540
†6	Solid	.....	.1620	$\frac{3}{64}$	$\frac{3}{64}$	.81x.47	852
†4	Solid	.....	.2043	$\frac{3}{64}$	$\frac{3}{64}$	.91x.52	1045
14	7	.0242	.....	$\frac{3}{64}$	$\frac{3}{64}$	.40x.23	177
12	7	.0305	.....	$\frac{3}{64}$	$\frac{3}{64}$	.47x.28	316

Stranded Conductors

10	7	.0385	.116	$\frac{3}{64}$	$\frac{3}{64}$	.55x.32	410
8	7	.0486	.146	$\frac{3}{64}$	$\frac{3}{64}$	.66x.38	540
6	7	.0612	.184	$\frac{3}{64}$	$\frac{3}{64}$	.81x.47	852
4	7	.0772	.232	$\frac{3}{64}$	$\frac{3}{64}$	.91x.52	1045
2	7	.0974	.292	$\frac{3}{64}$	$\frac{3}{64}$	1.03x.58	1310
1	19	.0664	.332	$\frac{5}{64}$	$\frac{5}{64}$	1.19x.67	1860
1/0	19	.0745	.373	$\frac{5}{64}$	$\frac{5}{64}$	1.27x.72	2120
2/0	19	.0837	.418	$\frac{5}{64}$	$\frac{5}{64}$	1.36x.76	2395
3/0	19	.0940	.470	$\frac{5}{64}$	$\frac{5}{64}$	1.47x.81	2730
4/0	19	.1055	.528	$\frac{5}{64}$	$\frac{5}{64}$	1.58x.87	3120

\*Trademark.

†Types RD and RHD only.

†Not listed in National Electrical Code.

For current carrying capacity—National Electrical Code—see index.

## General Cable \*Guardian Rubber Insulated Building Wire and Cable

Lead Sheathed Code Grade Type RML—600 Volts  
(Conforming to all Requirements of Federal Specification J-C-103)

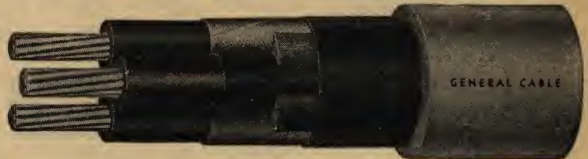
Lead Sheathed Heat-Resisting Grade Type RHML—600 Volts  
(Conforming to all Requirements of Federal Specification J-C-103)

Solid Conductors



Size A.W.G.	No. of Strands	CONDUCTORS Diam. Individual Strands In.	Diam. In.	Insulation Thickness In.	Sheath Thickness In.	Overall Diameter In.	Wt. Lb. per 1000 Feet
14	Solid	..	.06408	$\frac{3}{64}$	$\frac{3}{64}$	.51	485
12	Solid	..	.08081	$\frac{3}{64}$	$\frac{3}{64}$	.57	543
10	Solid	..	.1019	$\frac{3}{64}$	$\frac{3}{64}$	.65	743
8	Solid	..	.1285	$\frac{3}{64}$	$\frac{3}{64}$	.77	978
†6	Solid	..	.1620	$\frac{3}{64}$	$\frac{5}{64}$	.88	1,378
†4	Solid	..	.2043	$\frac{3}{64}$	$\frac{5}{64}$	1.03	1,704

Stranded Conductors



14	7	.0242	.0726	$\frac{3}{64}$	$\frac{3}{64}$	.52	508
12	7	.0305	.0915	$\frac{3}{64}$	$\frac{3}{64}$	.60	569
10	7	.0385	.116	$\frac{3}{64}$	$\frac{3}{64}$	.68	770
8	7	.0486	.146	$\frac{3}{64}$	$\frac{3}{64}$	.81	960
6	7	.0612	.184	$\frac{3}{64}$	$\frac{5}{64}$	.93	1,470
4	7	.0772	.232	$\frac{3}{64}$	$\frac{5}{64}$	1.09	1,780
2	7	.0974	.292	$\frac{3}{64}$	$\frac{5}{64}$	1.16	2,240
1	19	.0664	.332	$\frac{5}{64}$	$\frac{5}{64}$	1.33	2,980
1/0	19	.0745	.373	$\frac{5}{64}$	$\frac{5}{64}$	1.42	3,340
2/0	19	.0837	.418	$\frac{5}{64}$	$\frac{5}{64}$	1.52	3,830
3/0	19	.0940	.470	$\frac{5}{64}$	$\frac{5}{64}$	1.63	4,370
4/0	19	.1055	.528	$\frac{5}{64}$	$\frac{7}{64}$	1.79	5,430
MCM							
250	37	.0822	.575	$\frac{5}{64}$	$\frac{7}{64}$	1.96	6,320
300	37	.0900	.630	$\frac{5}{64}$	$\frac{7}{64}$	2.08	7,100
350	37	.0973	.681	$\frac{5}{64}$	$\frac{7}{64}$	2.19	7,830
400	37	.1040	.728	$\frac{5}{64}$	$\frac{8}{64}$	2.32	9,130
500	37	.1162	.814	$\frac{5}{64}$	$\frac{8}{64}$	2.50	10,550

\*Trade mark.

†Not listed in National Electrical Code.

Either tape or braid will be furnished on individual conductors.

For current carrying capacity—National Electrical Code—see index.

## General Cable \*Guardian Rubber Insulated Fixture Wire

Code Grade Underwriters' Type RF—300 Volts— $\frac{1}{64}$ -Inch Insulation

600 Volts— $\frac{2}{64}$ -Inch Insulation

Solid or Stranded Conductors, Single Braid

Size A.W.G.	Insulation Thickness Inches	Overall Diameter Inches	Wt. Lb. per 1000 Ft.
†20	$\frac{1}{64}$	.09	6
†20	$\frac{2}{64}$	.12	10
18	$\frac{1}{64}$	.11	9
18	$\frac{2}{64}$	.13	12
†16	$\frac{1}{64}$	.12	12
16	$\frac{2}{64}$	.14	16

\*Trade-mark.

†Does not carry Underwriters' labels.



### General Cable Romex\* Non-metallic Sheathed Cable

600 Volts



Inspected and labeled by Underwriters' Laboratories. Applications. New and old house wiring for all circuits beyond entrance; wiring boats and trailers; for extensions to new outlets; for circuits for radios and refrigerators.

Size A.W.G. No.	No. Con- duc- tors	Type of Conduc- tors	Shape of Cable	Over- all Diam. In.	Feet per Coil	NET WT. LB.	
						Per 1000 Feet With Ground Wire	Without Ground Wire
14	2	Solid	Oval	.590 x .330	250	108	104
14	3	Solid	Round	.630	200	175	165
14	4	Solid	Round	.690	200	352	342
12	2	Solid	Oval	.620 x .350	200	135	125
12	3	Solid	Round	.660	200	210	200
12	4	Solid	Round	.730	200	404	394
10	2	Solid	Oval	.670 x .370	200	175	155
10	3	Solid	Round	.720	200	270	250
10	4	Solid	Round	.790	200	497	477
8	2	7 Strand	Oval	.920 x .510	125	260	240
8	3	7 Strand	Round	.990	125	435	400
8	4	7 Strand	Round	1.100	125	922	888
6	2	7 Strand	Oval	1.010 x .560	125	410	368
6	3	7 Strand	Round	1.090	125	630	576
6	4	7 Strand	Round	1.200	125	1136	1082
4	2	7 Strand	Oval	1.110 x .610	125	560	488
4	3	7 Strand	Round	1.190	125	860	776
4	4	7 Strand	Round	1.320	125	1550	1470

Also supplied with thermaplastic insulation under the name Gentex.

### General Cable Enterite\* Service Drop Cable

150-600 Volts

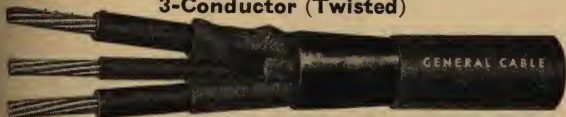
2-Conductor (Parallel)



Designed for aerial installation between pole and building.

Size A.W.G. No.	INSULATED CONDUCTORS	Type	Insu- lation Thick- ness In.	UNINSU- LATED NEUTRAL Size A.W.G.	Over- all Diam. In.	Std. Pkg. Feet per Reel	Ship. Wt. Lb. per 1000 Feet
12	2	Solid	3/64	..	.290 x .505	1000	167
12	2	Stranded	3/64	..	.301 x .527	1000	172
10	2	Solid	3/64	..	.311 x .547	1000	200
10	2	Stranded	3/64	..	.325 x .575	1000	210
8	2	Solid	4/64	..	.369 x .663	1000	280
8	2	Stranded	4/64	..	.386 x .697	1000	290
16	2	Solid	4/64	..	.402 x .729	1000	364
6	2	Stranded	4/64	..	.424 x .773	1000	376
4	2	Stranded	4/64	..	.472 x .869	1000	499
2	2	Stranded	4/64	..	.532 x .989	1000	708

3-Conductor (Twisted)



12	2	Solid	3/64	12	.545	1000	217
12	2	Stranded	3/64	12	.570	1000	224
10	2	Solid	3/64	10	.585	1000	274
10	2	Stranded	3/64	10	.610	1000	284
8	2	Solid	4/64	10	.700	1000	384
8	2	Stranded	4/64	10	.735	1000	399
8	2	Solid	4/64	8	.705	1000	404
8	2	Stranded	4/64	8	.745	1000	419
16	2	Solid	4/64	8	.770	1000	640
6	2	Stranded	4/64	8	.815	1000	655
6	2	Solid	4/64	6	.780	1000	670
6	2	Stranded	4/64	6	.825	1000	687
4	2	Stranded	4/64	6	.915	1000	825
4	2	Stranded	4/64	4	.930	1000	870
2	2	Stranded	4/64	2	1.090	1000	1195

\*Trade-mark.

†Not listed in National Electrical Code.

### General Cable Service Drop Cable

Type SD—150 Volts



For use in continuous overhead connection between pole and meter, switch or service equipment. Designed for circuits not exceeding 150 volts to ground. Where used as service entrance cable, cable must be installed in conduit.

2-Conductor (Concentric)

Size A.W.G. No.	INSULATED CONDUCTORS	Type	Insu- lation Thick- ness In.	UNINSULATED NEUTRAL (Cover- age Per Cent)	Over- all Diam. In.	Std. Pkg. Feet per Reel	Ship. Wt. Lb. per 1000 Feet
12	1	Solid	3/64	12 85	.310	1000	110
12	1	Stranded	3/64	12 85	.320	1000	110
10	1	Solid	3/64	10 85	.330	1000	170
10	1	Stranded	3/64	10 85	.350	1000	170
8	1	Stranded	4/64	10 85	.390	1000	230
8	1	Solid	4/64	8 85	.400	1000	240
8	1	Stranded	4/64	8 85	.420	1000	240
16	1	Solid	4/64	8 85	.440	1000	300
6	1	Stranded	4/64	8 85	.460	1000	300
16	1	Solid	4/64	6 85	.460	1000	310
6	1	Stranded	4/64	6 85	.480	1000	310
4	1	Stranded	4/64	6 85	.530	1000	430
4	1	Stranded	4/64	4 85	.540	1000	440
2	1	Stranded	4/64	4 85	.610	1000	600
2	1	Stranded	4/64	2 85	.630	1000	610

3-Conductor (Concentric)

12	2	Solid	3/64	12 65	.340 x .500	1000	190
12	2	Stranded	3/64	12 65	.350 x .520	1000	190
10	2	Solid	3/64	12 50	.360 x .540	1000	220
10	2	Solid	3/64	10 65	.370 x .540	1000	230
10	2	Stranded	3/64	10 65	.380 x .570	1000	230
8	2	Stranded	4/64	10 50	.460 x .690	1000	320
8	2	Solid	4/64	8 65	.430 x .650	1000	340
8	2	Stranded	4/64	8 65	.450 x .690	1000	340
16	2	Solid	4/64	8 50	.480 x .740	1000	420
6	2	Stranded	4/64	8 50	.500 x .790	1000	420
16	2	Solid	4/64	6 65	.490 x .750	1000	460
6	2	Stranded	4/64	6 65	.510 x .800	1000	460
4	2	Stranded	4/64	6 50	.570 x .890	1000	580
4	2	Stranded	4/64	4 65	.580 x .910	1000	640
2	2	Stranded	4/64	4 50	.650 x 1.02	1000	860
2	2	Stranded	4/64	2 65	.660 x 1.04	1000	960

†Not listed in National Electrical Code.

Percentage of the surface of the underlying core which is covered by the concentric uninsulated neutral conductor, subject to a tolerance of plus or minus 5%.

Peerless\* Type SD—150 Volts



A cable of concentric uninsulated neutral construction for use in continuous overhead connection between pole and meter, switch or service equipment. Designed for circuits not exceeding 150 volts to ground. Where used as service entrance cable, cable must be installed in conduit.

Has a weather-resisting outer covering of asphalt saturated Peerless felt in which the concentric uninsulated neutral conductor is embedded and gives added mechanical protection to the cable.

2-Conductor (Concentric)

Size A.W.G. No.	INSULATED CONDUCTORS	Type	Insu- lation Thick- ness In.	UNINSULATED NEUTRAL Size A.W.G. No.	Over- all Diam. In.	Std. Pkg. Feet per Reel	Ship. Wt. Lb. per 1000 Feet
8	1	Solid	4/64	10 12	.40	1000	220
8	1	Solid	4/64	8 12	.41	1000	240
6	1	Stranded	4/64	8 12	.47	1000	290
6	1	Stranded	4/64	6 12	.48	1000	310

3-Conductor (Concentric)

8	2	Solid	4/64	10 12	.44 x .65	1000	330
8	2	Solid	4/64	8 12	.45 x .66	1000	350
6	2	Stranded	4/64	8 12	.51 x .77	1000	450
6	2	Stranded	4/64	6 12	.52 x .78	1000	470

\*Trade-mark.

Approved construction requires tape over rubber insulation. Other conductor sizes and multiples upon application.



### General Cable Service Entrance Cable Type SE (Style U)—150 Volts



This cable does not require conduit protection where extending along exterior or entering buildings.

2-Conductor (Concentric)							
INSULATED CONDUCTORS		Insulation Thickness In.	UNINSULATED NEUTRAL		Over-all Diam. In.	Std. Pkg. Feet per Coil	Ship. Wt. Lb. per 1000 Feet
Size A.W.G. No.	Type		Size A.W.G. No.	Coverage Per Cent			
12	1 Solid	$\frac{3}{64}$	12	85	.36	250	90
12	1 Stranded	$\frac{3}{64}$	12	85	.37	250	90
10	1 Solid	$\frac{3}{64}$	10	85	.38	250	110
10	1 Stranded	$\frac{3}{64}$	10	85	.40	250	110
8	1 Stranded	$\frac{3}{64}$	10	85	.47	250	180
8	1 Solid	$\frac{3}{64}$	8	85	.45	250	200
8	1 Stranded	$\frac{3}{64}$	8	85	.47	250	200
†6	1 Solid	$\frac{3}{64}$	8	85	.49	250	240
6	1 Stranded	$\frac{3}{64}$	8	85	.51	250	240
†6	1 Solid	$\frac{3}{64}$	6	85	.51	250	270
6	1 Stranded	$\frac{3}{64}$	6	85	.53	250	270
4	1 Stranded	$\frac{3}{64}$	6	85	.58	200	350
4	1 Stranded	$\frac{3}{64}$	4	85	.60	200	400
2	1 Stranded	$\frac{3}{64}$	4	85	.66	150	520
2	1 Stranded	$\frac{3}{64}$	2	85	.68	150	590
3-Conductor (Concentric)							
12	2 Solid	$\frac{3}{64}$	12	65	.39x .52	250	150
12	2 Stranded	$\frac{3}{64}$	12	65	.40x .55	250	150
10	2 Solid	$\frac{3}{64}$	12	50	.42x .58	250	200
10	2 Solid	$\frac{3}{64}$	10	65	.43x .58	250	210
10	2 Stranded	$\frac{3}{64}$	10	65	.44x .61	250	210
8	2 Stranded	$\frac{3}{64}$	10	50	.49x .71	250	280
8	2 Solid	$\frac{3}{64}$	8	65	.49x .70	250	300
8	2 Stranded	$\frac{3}{64}$	8	65	.51x .74	250	300
†6	2 Solid	$\frac{3}{64}$	8	50	.53x .77	200	380
6	2 Stranded	$\frac{3}{64}$	8	50	.55x .82	200	380
†6	2 Solid	$\frac{3}{64}$	6	65	.54x .79	150	420
6	2 Stranded	$\frac{3}{64}$	6	65	.56x .84	150	420
4	2 Stranded	$\frac{3}{64}$	6	50	.61x .93	150	550
4	2 Stranded	$\frac{3}{64}$	4	65	.62x .94	150	610
2	2 Stranded	$\frac{3}{64}$	4	50	.68x1.06	100	800
2	2 Stranded	$\frac{3}{64}$	2	65	.70x1.08	100	900

### Type SE (Style A)—150 Volts



Has light steel armor over concentric neutral.

<b>2-Conductor (Concentric)</b>							
12	1 Solid	$\frac{3}{64}$	12	85	.39	250	120
12	1 Stranded	$\frac{3}{64}$	12	85	.40	250	120
10	1 Solid	$\frac{3}{64}$	10	85	.42	250	130
10	1 Stranded	$\frac{3}{64}$	10	85	.43	250	130
8	1 Stranded	$\frac{3}{64}$	10	85	.50	250	220
8	1 Solid	$\frac{3}{64}$	8	85	.47	250	240
8	1 Stranded	$\frac{3}{64}$	8	85	.50	250	240
†6	1 Solid	$\frac{3}{64}$	8	85	.52	250	290
6	1 Stranded	$\frac{3}{64}$	8	85	.54	250	290
†6	1 Solid	$\frac{3}{64}$	6	85	.54	250	320
6	1 Stranded	$\frac{3}{64}$	6	85	.56	250	320
4	1 Stranded	$\frac{3}{64}$	6	85	.61	200	400
4	1 Stranded	$\frac{3}{64}$	4	85	.63	200	450
2	1 Stranded	$\frac{3}{64}$	4	85	.69	150	570
2	1 Stranded	$\frac{3}{64}$	2	85	.71	150	650
<b>3-Conductor (Concentric)</b>							
12	2 Solid	$\frac{3}{64}$	12	65	.42x .54	250	200
12	2 Stranded	$\frac{3}{64}$	12	65	.44x .57	250	200
10	2 Solid	$\frac{3}{64}$	12	50	.44x .57	250	230
10	2 Solid	$\frac{3}{64}$	10	65	.46x .60	250	250
10	2 Stranded	$\frac{3}{64}$	10	65	.47x .62	250	250
8	2 Stranded	$\frac{3}{64}$	10	50	.53x .74	250	340
8	2 Solid	$\frac{3}{64}$	8	65	.52x .71	250	360
8	2 Stranded	$\frac{3}{64}$	8	65	.54x .75	250	360
†6	2 Solid	$\frac{3}{64}$	8	50	.56x .78	200	450
6	2 Stranded	$\frac{3}{64}$	8	50	.58x .84	200	450
†6	2 Solid	$\frac{3}{64}$	6	65	.57x .81	150	490
6	2 Stranded	$\frac{3}{64}$	6	65	.59x .85	150	490
4	2 Stranded	$\frac{3}{64}$	6	50	.64x .95	150	630
4	2 Stranded	$\frac{3}{64}$	4	65	.65x .96	150	690
2	2 Stranded	$\frac{3}{64}$	4	50	.71x1.08	100	890
2	2 Stranded	$\frac{3}{64}$	2	65	.73x1.10	100	990

†Not listed in National Electrical Code.

Percentage of the surface of the underlying core which is covered by the concentric uninsulated neutral conductor, subject to a tolerance of plus or minus 5%.

### General Cable Synthetic Rubber Insulated Tree Wire

0-8000 Volts

Tree wire constructions consist of a synthetic rubber or rubber-insulated conductor having fibrous coverings or non-metallic sheath to withstand the abrasive action of tree limbs.

The use of tree wire on overhead distribution systems where heavy tree growth is encountered avoids re-routing of lines, or when alternate routes are not available, eliminates expense and other disadvantages of tree trimming.

Tree wire is made in single conductor form only, and, since it is normally installed on insulators, has lighter insulation walls than the usual standards for rubber insulated wire and cable. When tree wire is used for other purposes, and not supported on insulators, standard insulation walls should be used.

#### A.S.A. Type



Has lead alloy coated, medium hard, solid copper conductors for No. 4 A.W.G. and smaller; stranded for larger sizes.

Insulation, A.S.T.M. Performance grade synthetic rubber or rubber compound.

Tape and hawser cord braid coverings.

Saturant is of special synthetic compound (Barkhide treatment).

Pitch and mica finish.

#### \*Barkhide



An excellent tree wire, having in addition to the superior electrical properties of General Cable tree wire compound, a high degree of abrasion resistance.

Has lead-alloy coated, medium hard, solid copper conductors for No. 4 A.W.G. and smaller; stranded for larger sizes.

Insulation, General Cable tree wire compound.

Tape, Rohide fiber armor covering not less than .035 inch in thickness, and closely woven hawser cord braid.

Saturant is of special synthetic compound (Barkhide treatment).

Pitch and mica finish.

### Special Thicknesses of Insulation

Supported on Insulators—I.P.C.E.A.

Power Circuits				Series Street Lighting Circuits			
Rated Voltage Phase to Phase	Conductor Size A.W.G.	INSULATION THICKNESS INCHES		Open Circuit Voltage	Conductor Size A.W.G.	INSULATION THICKNESS INCHES	
		Grounded Circuits	Ungrounded Neutral Circuits			With Protec- tors	With Protec- tors
0-600	10	$\frac{3}{64}$	$\frac{3}{64}$	0-600	8-4	$\frac{1}{64}$	$\frac{1}{64}$
	8-2	$\frac{1}{64}$	$\frac{1}{64}$		...	...	
	1-4/0	$\frac{5}{64}$	$\frac{5}{64}$		...	...	
601-1000	8	$\frac{1}{64}$	$\frac{1}{64}$	601-1000	8	$\frac{1}{64}$	$\frac{1}{64}$
	7-4/0	$\frac{5}{64}$	$\frac{5}{64}$		7-4	$\frac{5}{64}$	$\frac{5}{64}$
1001-5000	8-4/0	$\frac{5}{64}$	$\frac{5}{64}$	1001-5000	8-4	$\frac{5}{64}$	$\frac{5}{64}$
5001-6000	8-4/0	$\frac{5}{64}$	$\frac{5}{64}$	5001-6000	8-4	$\frac{5}{64}$	$\frac{5}{64}$
6001-7000	8-4/0	$\frac{7}{64}$	..	6001-7000	8-4	$\frac{7}{64}$	$\frac{7}{64}$
7001-8000	8-4/0	$\frac{8}{64}$	..	7001-8000	8-4	$\frac{8}{64}$	$\frac{8}{64}$

\*Trade-mark.

When installed without insulators, insulation thicknesses must be in accordance with the standards for series street lighting cables and for power cables. If the voltage exceeds 2000 volts on tree wire installed without insulators, shielding recommendations should be obtained from our nearest office.



## Stantree Tree Wire Power Cables



A loom-woven tree wire with an abrasion resistance nearly twice that of A.S.A. type. Insulation is a special tree wire compound with high dielectric strength, low dielectric constant, and excellent aging characteristics.

Conductors are tinned medium hard copper, solid for No. 4 A.W.G. and smaller, and stranded for larger sizes.

Coverings of tape and heavy loom of hard twisted paper twine and cotton cord. Special synthetic compound saturant, Barkhide treatment. Pitch and mica finish.

### For Power Circuits—Supported on Insulators

Rated Voltage Phase to Phase	—OR CONCENTRIC STRANDED—				Insulation Thick. In.	Over- all Diam.	Std. Pkg. Ft.	Wt., Lb. per 1000 Ft.
	Size A.W.G.	Individual No. Strands In.	Diam. In.					
0-600	10	Solid	.1019	$\frac{3}{64}$	.37	1000	89	
Grounded or	8	Solid	.1285	$\frac{3}{64}$	.44	1000	123	
	6	Solid	.1620	$\frac{3}{64}$	.58	1000	245	
Ungrounded	4	Solid	.2043	$\frac{3}{64}$	.62	1000	302	
	2	7	.0974	$\frac{3}{64}$	.72	1000	418	
	1	19	.0664	$\frac{3}{64}$	.79	1000	522	
	1/0	19	.0745	$\frac{3}{64}$	.83	1000	603	
1001-5000	2/0	19	.0837	$\frac{3}{64}$	.88	1000	705	
	3/0	19	.0940	$\frac{3}{64}$	.93	1000	839	
	4/0	19	.1055	$\frac{3}{64}$	.99	1000	983	
	8	Solid	.1285	$\frac{3}{64}$	.59	1000	225	
Grounded	6	Solid	.1620	$\frac{3}{64}$	.62	1000	261	
	4	Solid	.2043	$\frac{3}{64}$	.66	1000	323	
or	2	7	.0974	$\frac{3}{64}$	.75	1000	436	
	1	19	.0664	$\frac{3}{64}$	.79	1000	522	
Ungrounded	1/0	19	.0745	$\frac{3}{64}$	.83	1000	603	
	2/0	19	.0837	$\frac{3}{64}$	.88	1000	705	
	3/0	19	.0940	$\frac{3}{64}$	.93	1000	829	
	4/0	19	.1055	$\frac{3}{64}$	.99	1000	983	

### For Series Street Lighting Circuits Supported on Insulators

Open Circuit Voltage	CONDUCTORS, SOLID		Insulation Thick. In.	Overall Diam. In.	Std. Pkg. Ft.	Wt., Lb. per 1000 Feet
	Size A.W.G.	Diam. In.				
1001-5000	8	.1285	$\frac{5}{64}$	.59	1000	225
	6	.1620	$\frac{5}{64}$	.62	1000	261
5001-6000	8	.1285	$\frac{5}{64}$	.62	1000	240
	6	.1620	$\frac{5}{64}$	.65	1000	280
7001-8000	8	.1285	$\frac{5}{64}$	.68	1000	270
	6	.1620	$\frac{5}{64}$	.71	1000	317

\*Based on use without protectors.

## General Cable Non-Metallic Underground Cable

### Style GRS—0-15,000 Volts

Similar in construction to Style PRS except that conductor insulation is Gencorone. Furnished for a variety of special applications in voltage ratings up to 15,000 volts. Principally intended for use at voltages above those permitted for Style PRS, that is, between 3000 and 15,000 volts.

Information on the construction and application of cable may be obtained on application.

### Recommended Shielding Practice for Cable

Shielding is recommended where the 3-phase (line to line) operating voltage exceeds the following values:

	Single Conductor Cable Volts	Multi-Conductor Cable Volts
(1) If protected against accidental direct contact by persons:		
(a) Duct or Direct Earth Installation:		
Neutral Grounded.....	†5000	†3000
Neutral Ungrounded.....	†3000	†3000
(b) Direct Connection to Overhead Lines...	†2000	†2000
(2) Not Protected Against Accidental Direct Contact by Persons.....	2000	2000

\*Trade-mark.

†All non-metallic cables operated above 2000 volts should be shielded, except those which fulfill the three conditions—(1) not connected to overhead lines which are exposed to lightning; (2) completely buried directly in earth; (3) fully protected against accidental contact.

‡If connected to overhead lines exposed to lightning, shielding is advisable regardless of the operating voltage.

## General Cable Non-Metallic Underground Cable

### 0-15,000 Volts

Synthetic rubber or rubber insulated nonmetallic cable of Neoprene jacketed type. For non-portable uses, such as in underground ducts or direct installation in the ground.

Neoprene jacket has high resistance to deterioration from moisture, earth acids, alkalies, or other earth chemicals, and in cinder fills, railway ballast, and other locations having a distinctly acid character. Also used in mines, for underground distribution for both primary and secondary, for secondary alternating current networks, for underground service entrances, and for many general purposes where light weight and high corrosion resistance is desired.

### Style PRS—0-3000 Volts



Includes single and multi-conductor cable.

**Single Conductor** cable which does not require shielding has insulation and jacket firmly bonded together. May include a separating tape between the insulation and jacket. Shielded single conductor cable has a separating tape and shielding tape between insulation and jacket.

**Multiple Conductor** cable has a tape over each insulated conductor, copper shielding tapes when required, fillers where necessary to round out the construction and a tough Supersheath jacket overall.

Conductor insulation is a moisture-resisting Performance Grade compound in accordance with A.S.T.M. Specification D755 latest issue, of the thickness specified.

The Neoprene jacket conforms to A.S.T.M. Specification D752, latest issue.

## General Cable Series Street Lighting Underground Cable

### 0-10,000 Volts

For underground installation either in ducts or directly in the earth. Supplied in a variety of types. Usual sizes are 8 and 6 A.W.G.; other sizes furnished if required.

Conductors for all types are lead-alloy coated soft or annealed copper, usually solid, and comply with all requirements of A.S.T.M. Specification B189, latest issue.

### Lead Sheathed Parkway Cable



Insulated with Gencorone to standard thickness; enclosed in lead sheath over which protective coverings may be applied.

Dimensions and weights are given for the following:

- (1) Lead sheath with no additional covering, for use in ducts and conduit.
- (2) Lead sheath with one or two servings of jute overall, for direct earth installation. As an alternate to the jute covering, duck tape can be supplied.
- (3) Lead sheath with jute, double flat steel tape armor, and jute overall for direct earth installation. This type should not be used when current exceeds 12 amperes.

Open Circuit Voltage	SOLID CONDUCTORS Size A.W.G.	Insulation Thick. In.	Lead Sheath Thick. In.	Lead Sheathed all Wt. Lb. per 1000 Ft.		Lead With Two Jute Servings all Wt. Lb. per 1000 Ft.		Lead With Jute, Double Steel Tape Armor, Jute Overall all Wt. Lb. per 1000 Ft.	
				Diam. In.	Diam. per 1000 Ft.	Diam. In.	Diam. per 1000 Ft.	Diam. In.	Diam. per 1000 Ft.
4001-6000	8	.1285	10/64	4/64	.60	.679	.76	.764	.95
	6	.1620	10/64	4/64	.63	.754	.79	.853	.98
7001-8000	8	.1285	12/64	4/64	.66	.774	.82	.875	1.01
	6	.1620	12/64	4/64	.69	.852	.85	.962	1.04

Construction data for cables of other sizes and voltage ratings will be supplied on request.



**General Cable Series Street Lighting  
Underground Cable**  
0-10,000 Volts  
**Non-Metallic Sheathed Type Cable**



Non-Metallic series street lighting cable is insulated to the standard thickness required for the operating voltage, in accordance with table on preceding page. Shielding tapes are required when the maximum open circuit voltage will exceed 6000 volts. A Neoprene jacket is applied overall. This cable may be used in ducts or installed directly in earth.

**Concentric Type Cable**

Concentric types for series street lighting cable have an inner insulated conductor and an outer uninsulated conductor, the latter serving as a shield.

These types are designed primarily for power circuits but are well suited to series street lighting use where a non-leaded cable is required. Description of this cable will be found under Concentric Trenchlay.

**Gencorone Type Cable**

Non-leaded series street lighting cable having Gencorone insulation is supplied either for duct installation or for direct earth installation. Gencorone insulation is suitable for this type of service because of its high dielectric strength and corona resistance. Gencorone can be supplied with Ruralay cable or in the following forms:

**FOR DUCT INSTALLATION.** Conductors insulated with Gencorone, covered with Gencorone tape, and enclosed in heavy braid. When the maximum open circuit voltage exceeds 6000 volts, shielding is recommended.

**FOR DIRECT EARTH INSTALLATION.** Conductors insulated with Gencorone, covered with Gencorone tape, jute bedding, double steel tape armor, and jute serving overall.

**General Cable Synthetic Rubber or Rubber  
Insulated Ornamental Pole and Bracket  
Cable**  
0-10,000 Volts

Used for interior wiring of ornamental poles which are fed by underground cable, or for the exterior wiring of pole type bracket fixtures.

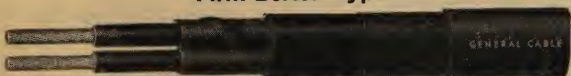
Standard pkg., 1000 feet on reel unless otherwise ordered.

**Twin Type**

Two insulated and braided conductors laid parallel and enclosed in overall tape and braid. Saturated and filled with weatherproof compound and coated with special arc cable finishing compound.

CONDUCTORS				INSULATION THICKNESS			Major Overall Wt.	Net Lb. per 1000 Ft.
Open Circuit Transformer Voltage 0-600	Size	No.	Diam.	INCHES				
	A.W.G.	Strands	In.	On Conductors	Belt	Total		
2001-3000	10	19	.117	3/64	....	3/64	.57	198
	8	37	.148	4/64	....	4/64	.69	260
	6	37	.186	4/64	....	4/64	.77	293
	10	19	.117	6/64	....	6/64	.75	234
	8	37	.148	6/64	....	6/64	.82	291
	6	37	.186	7/64	....	7/64	.97	330
3001-4000	10	19	.117	7/64	....	7/64	.82	243
	8	37	.148	7/64	....	7/64	.88	302
	6	37	.186	8/64	....	8/64	1.03	351

**Twin Belted Type**



Two insulated and braided conductors laid parallel, enclosed in a close fitting belt of insulating compound and covered with an overall tape and braid. The overall braid is saturated and filled with weatherproof compound and coated with special arc cable finishing compound.

The maximum permissible voltage between conductors is 600 volts.

4001-6000	10	19	.117	3/64	6/64	9/64	.76	256
	8	37	.148	3/64	6/64	9/64	.82	320
	6	37	.186	4/64	5/64	9/64	.95	377
7001-9000	10	19	.117	3/64	8/64	11/64	.82	280
	8	37	.148	3/64	8/64	11/64	.90	352
	6	37	.186	4/64	7/64	11/64	1.01	427
9001-10000	10	19	.117	3/64	9/64	12/64	.86	292
	8	37	.148	3/64	9/64	12/64	.93	368
	6	37	.186	4/64	8/64	12/64	1.04	451

**General Cable Trenchlay\* Non-metallic  
Underground Cable**  
Power Type—600 Volts



**Single Conductor**

Size A.W.G.	No. Strands	Insulation Thickness Inches	Overall Diameter Inches	Net Wt. Lb. per 1000 Feet
14	Solid	3/64	.523	118
12	Solid	3/64	.540	133
10	Solid	3/64	.561	153
8	Solid	3/64	.618	195
6	7	3/64	.674	253
4	7	3/64	.722	346
2	7	3/64	.782	448
1	19	5/64	.853	545
1/0	19	5/64	.896	635
2/0	19	5/64	.941	741
3/0	19	5/64	.991	878
4/0	19	5/64	1.051	1051
CM.				
250,000	37	6/64	1.128	1227
300,000	37	6/64	1.184	1408
350,000	37	6/64	1.234	1588
400,000	37	6/64	1.281	1766
450,000	37	6/64	1.388	2025
500,000	37	6/64	1.429	2198
600,000	61	7/64	1.540	2595
750,000	61	7/64	1.645	3120
900,000	61	7/64	1.740	3636
1,000,000	61	7/64	1.799	3975
1,250,000	91	8/64	1.967	4894
1,500,000	91	8/64	2.090	5788
2,000,000	127	8/64	2.309	7487

**2-Conductor—Twin Flat Construction**

14	Solid	3/64	.721	188
12	Solid	3/64	.755	217
10	Solid	3/64	.797	255
8	Solid	3/64	.912	336
6	7	3/64	1.023	469
4	7	3/64	1.119	607
2	7	3/64	1.239	823
1	19	5/64	1.444	1006
1/0	19	5/64	1.530	1174
2/0	19	5/64	1.620	1393
3/0	19	5/64	1.720	1650
4/0	19	5/64	1.840	2055

**3-Conductor**

14	Solid	3/64	.752	273
12	Solid	3/64	.788	313
10	Solid	3/64	.834	367
8	Solid	3/64	.957	467
6	7	3/64	1.077	676
4	7	3/64	1.180	879
2	7	3/64	1.310	1179
1	19	5/64	1.526	1538
1/0	19	5/64	1.618	1793
2/0	19	5/64	1.715	2111
3/0	19	5/64	1.823	2513
4/0	19	5/64	1.952	2991

CM.				
250,000	37	6/64	2.118	3565
300,000	37	6/64	2.239	4112
350,000	37	6/64	2.347	4654
400,000	37	6/64	2.448	5199
450,000	37	6/64	2.543	5738
500,000	37	6/64	2.631	6401
600,000	61	7/64	2.870	7593
750,000	61	7/64	3.096	9168

\*Trade-mark.



# General Cable \*Trenchlay Non-metallic Underground Cable

## Concentric Type, 2-Conductor—0-12,000 Volts



Rated Voltage Phase to Phase	Maximum Voltage Phase to Ground	INSULATED CONDUCTOR—Size A.W.G. Strands	Insulation Thick. In.	Uninsulated Cond. Construction	Over-all Diam. In.	Wt., Lb. per 1000 Feet
0-600	†350	8 Solid	$\frac{3}{64}$	23/#21	.575	259
		6 Solid	$\frac{3}{64}$	23/#19	.624	342
		6 7	$\frac{3}{64}$	23/#19	.646	354
		4 Solid	$\frac{3}{64}$	23/#17	.684	465
		4 7	$\frac{3}{64}$	23/#17	.712	487
		2 7	$\frac{3}{64}$	23/#15	.796	690
		1 19	$\frac{5}{64}$	23/#14	.881	856
		8 Solid	$\frac{7}{64}$	24/#21	.677	327
		6 Solid	$\frac{8}{64}$	24/#19	.757	436
		6 19	$\frac{8}{64}$	24/#19	.779	453
2001-3000	1700	4 Solid	$\frac{8}{64}$	24/#17	.818	572
		4 19	$\frac{8}{64}$	24/#17	.846	592
		2 19	$\frac{8}{64}$	24/#15	.929	810
		1 37	$\frac{8}{64}$	24/#14	.983	954
		8 Solid	$\frac{10}{64}$	24/#20	.778	411
		6 Solid	$\frac{10}{64}$	24/#19	.819	483
		6 19	$\frac{10}{64}$	24/#19	.841	500
		4 Solid	$\frac{10}{64}$	24/#17	.880	625
		4 19	$\frac{10}{64}$	24/#17	.908	647
		2 19	$\frac{10}{64}$	24/#15	.992	863
4001-5000	2900	1 37	$\frac{10}{64}$	24/#14	1.046	1013
		8 Solid	$\frac{12}{64}$	24/#19	.848	480
		6 Solid	$\frac{12}{64}$	24/#18	.891	564
		6 19	$\frac{12}{64}$	24/#18	.913	584
		4 Solid	$\frac{12}{64}$	24/#17	.943	679
		4 19	$\frac{12}{64}$	24/#17	.971	703
		2 19	$\frac{12}{64}$	24/#15	1.054	922
		1 37	$\frac{12}{64}$	24/#14	1.108	1069
		8 Solid	$\frac{16}{64}$	24/#18	.982	632
		6 Solid	$\frac{16}{64}$	24/#17	1.026	718
7001-8000	4600	6 19	$\frac{16}{64}$	24/#17	1.048	743
		4 Solid	$\frac{16}{64}$	24/#16	1.079	839
		4 19	$\frac{16}{64}$	24/#16	1.107	867
		2 19	$\frac{16}{64}$	24/#15	1.179	1055
		1 37	$\frac{16}{64}$	24/#14	1.296	1262
11001-12000	7000					

\*Trade-mark.

†If used as a service entrance cable within the jurisdiction of the National Board of Fire Underwriters the maximum voltage to ground is 150 volts.

# General Cable \*Ruralay Non-metallic Underground Cable

## 2001-8000 Volts



For underground installation in rural areas where the distribution problem is characterized by long cable runs, scattered service connections, and relatively few customers per mile. Especially adaptable for installation by the use of a cable plow. No additional protection of cable is required except at highway crossings and points of unusual mechanical hazard. Under dirt highways creosoted wood planking affords adequate protection.

Rated Voltage Phase to Phase	Phase to Ground Voltage	INSULATED CONDUCTOR—Size A.W.G. Construction	Insulation Thick. In.	Over-all Diam. In.	Wt., Lb. per 1000 Ft.
3001-4000	2300	8 Solid	$\frac{9}{64}$	.680	285
		6 Solid	$\frac{9}{64}$	.735	365
		4 191.0469"	$\frac{9}{64}$	.830	495
		4 Solid	$\frac{10}{64}$	.710	310
5001-6000	3500	6 Solid	$\frac{10}{64}$	.765	395
		4 191.0469"	$\frac{10}{64}$	.860	530
		8 Solid	$\frac{12}{64}$	.775	360
		6 Solid	$\frac{12}{64}$	.825	440
7001-8000	4600	4 191.0469"	$\frac{12}{64}$	.920	580

\*Trade-mark.

# General Cable Parkway Steel Armored Cable

## 2-Conductor—0-15,000 Volts



Twin Flat Construction, Double Flat Steel Tape Armor



Round Construction, Interlocking Steel Tape Armor

## Rated Voltage, 0-600, Phase to Phase (Grounded or Ungrounded)

Size A.W.G.	CONDUCTORS (SOLID OR CONCENTRIC) STRANDED Type	Insulation Thick-ness In.	Lead Sheath Thick-ness In.	TWIN FLAT CONSTRUCTION		ROUND CONSTRUCTION	
				Over-all Diam. In.	Net Wt. Lb. per 1000 Ft.	Over-all Diam. In.	Net Wt. Lb. per 1000 Ft.
14	Solid	$\frac{3}{64}$	$\frac{3}{64}$	.66x	.85	.93	708
12	Solid	$\frac{3}{64}$	$\frac{3}{64}$	.67x	.88	.96	770
10	Solid	$\frac{3}{64}$	$\frac{3}{64}$	.73x	.95	1.03	1033
8	Solid	$\frac{3}{64}$	$\frac{3}{64}$	.78x1.07	1053	1.15	1295
6	Solid	$\frac{3}{64}$	$\frac{3}{64}$	.82x1.13	1193	1.21	1495
6	Stranded	$\frac{1}{64}$	$\frac{1}{64}$	.84x1.18	1276	1.26	1580
4	Stranded	$\frac{1}{64}$	$\frac{1}{64}$	.92x1.31	1718	1.39	2067
2	Stranded	$\frac{1}{64}$	$\frac{1}{64}$	1.04x1.49	2265	1.51	2588
1	Stranded	$\frac{1}{64}$	$\frac{1}{64}$	1.11x1.63	2672	1.65	3050
1/0	Stranded	$\frac{5}{64}$	$\frac{5}{64}$	1.18x1.74	3245	1.83	3865
2/0	Stranded	$\frac{5}{64}$	$\frac{5}{64}$	1.23x1.83	3605	1.92	4300
3/0	Stranded	$\frac{5}{64}$	$\frac{5}{64}$	1.28x1.93	4036	2.02	4830
4/0	Stranded	$\frac{5}{64}$	$\frac{5}{64}$	1.34x2.05	4550	2.14	5455

## Rated Voltage, 2001-3000, Phase to Phase (Grounded or Ungrounded)

10	Solid	$\frac{7}{64}$	$\frac{5}{64}$	.88x1.23	1428	1.31	1765
8	Solid	$\frac{7}{64}$	$\frac{5}{64}$	.91x1.28	1550	1.36	1915
6	Solid	$\frac{7}{64}$	$\frac{5}{64}$	1.03x1.48	2035	1.50	2318
6	Stranded	$\frac{5}{64}$	$\frac{5}{64}$	1.06x1.52	2144	1.54	2422
4	Stranded	$\frac{5}{64}$	$\frac{5}{64}$	1.10x1.62	2437	1.64	2707
2	Stranded	$\frac{5}{64}$	$\frac{5}{64}$	1.19x1.77	3131	1.87	3730
1	Stranded	$\frac{5}{64}$	$\frac{5}{64}$	1.23x1.85	3412	1.94	4070
1/0	Stranded	$\frac{5}{64}$	$\frac{5}{64}$	1.28x1.93	3726	2.02	4464
2/0	Stranded	$\frac{5}{64}$	$\frac{5}{64}$	1.32x2.02	4083	2.11	4897
3/0	Stranded	$\frac{5}{64}$	$\frac{5}{64}$	1.37x2.12	4532	2.21	5433
4/0	Stranded	$\frac{5}{64}$	$\frac{7}{64}$	1.46x2.27	5456	2.36	6545

## Rated Voltage, 4001-5000, Phase to Phase (Grounded or Ungrounded)

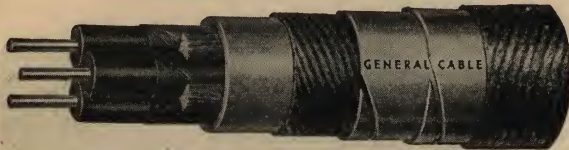
8	Solid	$\frac{10}{64}$	$\frac{5}{64}$	1.06x1.53	2120	1.55	2405
6	Solid	$\frac{10}{64}$	$\frac{5}{64}$	1.10x1.60	2330	1.62	2642
6	Stranded	$\frac{10}{64}$	$\frac{5}{64}$	1.15x1.67	2708	1.76	3223
4	Stranded	$\frac{10}{64}$	$\frac{5}{64}$	1.20x1.77	3018	1.86	3536
2	Stranded	$\frac{10}{64}$	$\frac{5}{64}$	1.26x1.88	3445	1.98	4120
1	Stranded	$\frac{10}{64}$	$\frac{5}{64}$	1.30x1.97	3728	2.06	4460
1/0	Stranded	$\frac{10}{64}$	$\frac{5}{64}$	1.34x2.05	4047	2.14	4860
2/0	Stranded	$\frac{10}{64}$	$\frac{7}{64}$	1.42x2.18	4787	2.27	5756
3/0	Stranded	$\frac{10}{64}$	$\frac{7}{64}$	1.44x2.28	5280	2.37	6318
4/0	Stranded	$\frac{10}{64}$	$\frac{7}{64}$	1.53x2.40	5830	2.49	7012

Construction data for cables of other sizes, types, and voltage ratings will be supplied on request.



## General Cable Parkway Steel Armored Cable

3-Conductor—0-15,000 Volts



Double Flat Steel Tape Armor



Interlocking Steel Tape Armor

## 0-600 Volts (Grounded or Ungrounded)

Size A.W.G.	Type	CONDUCTORS (SOLID OR CONCENTRIC STRANDED)	Insu- lation Thick- ness In.	Lead Sheath Thick- ness In.	DOUBLE FLAT STEEL TAPE ARMOR		INTERLOCKING STEEL TAPE ARMOR	
					Over- all Diam. In.	Net Wt. Lb. per 1000 Ft.	Over- all Diam. In.	Net Wt. Lb. per 1000 Ft.
14	Solid		3/64	1/64	.93	1015	1.01	973
12	Solid		3/64	1/64	.97	1112	1.05	1063
10	Solid		3/64	1/64	1.01	1226	1.09	1191
8	Solid		3/64	1/64	1.14	1542	1.22	1508
6	Solid		3/64	5/64	1.24	2015	1.32	1977
6	Stranded		3/64	5/64	1.29	2127	1.37	2103
4	Stranded		3/64	5/64	1.46	2800	1.47	2503
2	Stranded		3/64	5/64	1.58	3370	1.60	3050
1	Stranded		3/64	5/64	1.77	4290	1.86	4095
1/0	Stranded		5/64	5/64	1.86	4760	1.95	4546
2/0	Stranded		5/64	5/64	1.95	5300	2.04	5063
3/0	Stranded		5/64	5/64	2.06	5980	2.15	5717
4/0	Stranded		5/64	5/64	2.22	7200	2.31	6942
C.M.								
250,000	Stranded		6/64	7/64	2.39	8150	2.48	7783
350,000	Stranded		6/64	7/64	2.62	9860	2.71	9538
500,000	Stranded		6/64	8/64	2.93	12870	3.02	12515

## 2001-3000 Volts (Grounded or Ungrounded)

10	Solid		7/64	5/64	1.32	2082	1.40	2068
8	Solid		7/64	5/64	1.37	2273	1.45	2268
6	Solid		8/64	5/64	1.57	2991	1.59	2708
6	Stranded		8/64	5/64	1.62	3171	1.64	2846
4	Stranded		8/64	5/64	1.75	3950	1.84	3759
2	Stranded		8/64	5/64	1.88	4490	1.97	4382
1	Stranded		8/64	5/64	1.97	4990	2.06	4771
1/0	Stranded		8/64	5/64	2.06	5470	2.15	5255
2/0	Stranded		8/64	5/64	2.18	6470	2.28	6223
3/0	Stranded		8/64	5/64	2.30	7190	2.39	6948
4/0	Stranded		8/64	5/64	2.42	8020	2.51	7749
C.M.								
250,000	Stranded		9/64	7/64	2.59	8990	2.68	8696
350,000	Stranded		9/64	8/64	2.85	11390	2.94	11060
500,000	Stranded		9/64	8/64	3.13	13880	3.22	13515

## 4001-5000 Volts (Grounded or Ungrounded)

8	Solid		10/64	5/64	1.63	3132	1.65	2906
6	Solid		10/64	5/64	1.74	3745	1.83	3580
6	Stranded		10/64	5/64	1.78	3935	1.87	3736
4	Stranded		10/64	5/64	1.89	4410	1.98	4201
2	Stranded		10/64	5/64	2.02	5050	2.11	4816
1	Stranded		10/64	5/64	2.10	5470	2.19	5222
1/0	Stranded		10/64	5/64	2.22	6430	2.31	6185
2/0	Stranded		10/64	5/64	2.32	7020	2.41	6756
3/0	Stranded		10/64	5/64	2.43	7740	2.52	7473
4/0	Stranded		10/64	5/64	2.56	8580	2.65	8285
C.M.								
250,000	Stranded		11/64	8/64	2.76	10190	2.85	9891
350,000	Stranded		11/64	8/64	2.98	12050	3.07	11705
500,000	Stranded		11/64	8/64	3.27	14550	3.36	14165

Construction data for cables of other sizes, types, and voltage ratings will be supplied on request.

## General Cable \*Trenchlay Synthetic Rubber or Rubber Insulated Control Cable

600 Volts



Designed for direct earth installation. The non-metallic armoring is of the fibrous type which has been used on Trenchlay cable for many years. This sheath results in a lightweight cable which is easy to splice and to terminate, and which is free from trouble due to electrolysis.

Conductors are insulated with 3/64-inch Trenchlay compound which is highly resistant to water and earth solutions.

A color-coded cotton braid is applied on each conductor.

The taped assembly is provided with a moisture seal of asbestos base caulk, a heavy saturated asbestos braid, a second layer of caulk, pretreated fibrous armor tape, a third layer of caulk, and a heavy presaturated duck tape.

Cable is finished with pitch and mica to provide a non-tacky surface.

A variation in the regular Trenchlay underground finish can be supplied when a control cable is desired for underground, aerial, and duct (universal) service.

Shipped on reels containing 1000 feet.

Nominal Size A.W.G.	No.	Construction	Diameter Inches	Overall Diameter Inches	WEIGHT, POUNDS PER 1000 FEET	
					Net	Ship- ping
14	2	19/#27	.0710	.796	239	519
14	3	19/#27	.0710	.827	275	555
14	4	19/#27	.0710	.878	331	611
14	5	19/#27	.0710	.935	373	653
14	6	19/#27	.0710	.994	413	693
14	7	19/#27	.0710	.994	438	718
14	8	19/#27	.0710	1.054	494	865
14	9	19/#27	.0710	1.114	555	926
14	10	19/#27	.0710	1.192	605	976
14	12	19/#27	.0710	1.223	674	1045
12	2	19/#25	.0895	.828	293	573
12	3	19/#25	.0895	.861	339	619
12	4	19/#25	.0895	.917	407	687
12	5	19/#25	.0895	.978	469	748
12	6	19/#25	.0895	1.042	527	898
12	7	19/#25	.0895	1.042	559	930
12	8	19/#25	.0895	1.107	637	1008
12	9	19/#25	.0895	1.173	699	1070
12	10	19/#25	.0895	1.256	766	1137
12	12	19/#25	.0895	1.289	855	1226
9	2	19/#22	.1267	.839	367	647
9	3	19/#22	.1267	.878	451	731
9	4	19/#22	.1267	.943	556	836
9	5	19/#22	.1267	1.015	646	1017
9	6	19/#22	.1267	1.090	733	1104
9	7	19/#22	.1267	1.090	791	1162
9	8	19/#22	.1267	1.167	896	1267
9	9	19/#22	.1267	1.243	988	1357
9	10	19/#22	.1267	1.372	1146	1517
9	12	19/#22	.1267	1.411	1291	1662

\*Trade-mark.



## General Cable Synthetic Rubber or Rubber Insulated Traffic Control or Signal Cable

600 Volts



Braid Finished



Lead Sheathed

Suitable for general application in control circuits rated at 600 volts or less.

**BRAID FINISHED.** Recommended for general application, particularly in aerial circuits, and for inside use in conduit where not subject to immersion.

**LEAD SHEATHED.** Recommended for service in underground ducts or in locations where cable is subject to either continuous or intermittent immersion in water.

Standard conductors are solid, lead-alloy coated copper, insulated with  $\frac{3}{4}$ -inch N.E.C. insulation covered with I.P.C.E.A. color-coded braids.

Standard I.P.C.E.A. Parkway cable finish can be supplied over the lead sheath on cables to be used for direct earth installation.

Shipped on reels containing 1000 feet.

CONDUCTORS		Braid Finished			Lead Sheathed		
		Over- all Diam. In.	Wt., Lb. Per 1000 Feet Net Ship.	Sheath Thick- ness In.	Over- all Diam. In.	Wt., Lb. Per 1000 Feet Net Ship.	
Size A.W.G. No.	Diam. In.						
14	2	.06408	.41x.22	61	.83	$\frac{3}{64}$ .48x.29	315 394
14	3	.06408	.50	117	170	$\frac{3}{64}$ .57	592 685
14	4	.06408	.55	148	203	$\frac{3}{64}$ .62	667 783
14	5	.06408	.60	184	233	$\frac{3}{64}$ .67	752 868
14	6	.06408	.66	217	269	$\frac{3}{64}$ .73	839 1144
14	7	.06408	.66	226	277	$\frac{4}{64}$ .73	847 1152
14	8	.06408	.72	256	323	$\frac{4}{64}$ .78	929 1234
14	9	.06408	.78	285	351	$\frac{5}{64}$ .87	1222 1608
14	10	.06408	.87	336	527	$\frac{5}{64}$ .94	1355 1741
14	12	.06408	.90	388	576	$\frac{5}{64}$ .97	1438 1824
12	2	.08081	.44x.24	81	133	$\frac{3}{64}$ .52x.31	352 431
12	3	.08081	.53	153	204	$\frac{4}{64}$ .60	657 750
12	4	.08081	.60	194	247	$\frac{4}{64}$ .66	757 850
12	5	.08081	.65	238	288	$\frac{4}{64}$ .72	846 962
12	6	.08081	.71	283	349	$\frac{4}{64}$ .78	948 1253
12	7	.08081	.71	298	363	$\frac{4}{64}$ .78	962 1267
12	8	.08081	.77	338	529	$\frac{5}{64}$ .87	1268 1573
12	9	.08081	.84	378	567	$\frac{5}{64}$ .93	1380 1685
12	10	.08081	.93	442	627	$\frac{5}{64}$ 1.01	1532 1918
12	12	.08081	.97	513	694	$\frac{5}{64}$ 1.04	1637 2023
10	2	.1019	.48x.26	115	134	$\frac{4}{64}$ .59x.36	524 603
10	3	.1019	.58	203	251	$\frac{4}{64}$ .65	747 840
10	4	.1019	.64	259	308	$\frac{4}{64}$ .71	856 972
10	5	.1019	.71	319	383	$\frac{4}{64}$ .77	975 1091
10	6	.1019	.77	380	440	$\frac{5}{64}$ .87	1308 1613
10	7	.1019	.77	422	458	$\frac{5}{64}$ .87	1348 1653
10	8	.1019	.84	461	645	$\frac{5}{64}$ .94	1466 1771
10	9	.1019	.93	524	704	$\frac{5}{64}$ 1.01	1601 1987
10	10	.1019	1.02	598	774	$\frac{5}{64}$ 1.10	1779 2165
10	12	.1019	1.05	700	870	$\frac{5}{64}$ 1.13	1915 2301

## General Cable Fire Alarm, Police Signal, And Municipal Signal Cable

600 Volts



For general service in fire alarm, police signal, and other municipal signal systems.

Constructed with many combinations of conductors and pairs. Designed with suitable overall coverings for underground, aerial, or inside use.

May be made to conform to various specifications, but the Specifications and Operating Standards of the International Municipal Signal Association, Inc. are most generally accepted and followed unless otherwise specified.

This cable is standard in the following forms:

(1) Lead sheathed multiple conductor signal cable for general use in underground ducts, aerial use with messenger or in stations and buildings.

(2) Lead sheathed and armored multiple conductor Parkway signal cable for general use installed directly in the earth without conduit protection.

(3) Heavy braid or loom covered multiple conductor signal cable for aerial use with messenger or for conduit and duct installations.

(4) Neoprene jacketed multiple conductor signal cable for use in underground ducts or for aerial use with messenger.

### Variable Construction Features

**CONDUCTORS.** All conductors are lead-alloy coated conductors in accordance with A.S.T.M. Specification B189, latest issue.

**INSULATION.** The insulation is high grade, long life synthetic rubber or rubber compound. Thicknesses of insulation are standard for operation at 600 volts or less. Natural rubber Superlite insulation can be supplied when a small diameter cable is desired.

**BRAIDS.** Saturated braids, either color-coded or plain, will be furnished on the individual conductors.

**ASSEMBLY.** Multiple conductor assemblies are laid up symmetrically in layers in round form, jute fillers being used where necessary. Tracer conductors are included in each layer for identification purposes. A tape is applied over the core.

**LEAD SHEATH.** The sheath of non-armored cable for installation in ducts, and of armored cable is commercially pure lead. The sheath of non-armored cable for aerial use is copper bearing lead or is a lead-antimony alloy containing  $\frac{3}{4}$  per cent antimony.



# General Cable Bare Concentric Stranded Cable

Soft or Annealed Copper



Size MCM	Over- all Diam. In.	No. Strands	Break- ing Strength Lb.	Resist. Ohms per 1000 Feet 68°F.	Net Wt. Lb. per 1000 Feet	REELS Net Wt. Lb.
250	.574	A—19	7,265	.04231	771.9	3500 2702
250	.575	B—37	7,559	.04231	771.9	3500 2702
300	.629	A—19	8,718	.03526	926.3	2640 2445
300	.630	B—37	9,071	.03526	926.3	2640 2445
350	.679	A—19	10,170	.03022	1,081.	2640 2853
350	.681	B—37	10,580	.03022	1,081.	2640 2853
400	.726	A—19	11,620	.02645	1,235.	2000 2470
400	.728	B—37	11,620	.02645	1,235.	2000 2470
450	.772	B-A—37	13,080	.02351	1,389.	2000 2778
500	.814	B-A—37	14,530	.02116	1,544.	2000 3088
600	.891	A—37	17,440	.01763	1,853.	1600 2964
600	.893	B—61	18,140	.01763	1,853.	1600 2964
700	.964	B-A—61	20,340	.01511	2,161.	1400 3026
750	.998	B-A—61	21,790	.01410	2,316.	1250 2895
800	1.031	B-A—61	23,250	.01322	2,470.	1200 2964
900	1.094	B-A—61	26,150	.01175	2,779.	1100 3057
1000	1.152	B-A—61	29,060	.01058	3,088.	1000 3088
1250	1.288	A—61	36,320	.008463	3,859.	750 2895
1250	1.289	B—91	36,320	.008463	3,859.	750 2895
1500	1.411	A—61	43,590	.007052	4,631.	650 3010
1500	1.412	B—91	43,590	.007052	4,631.	650 3010
1750	1.526	A—91	50,850	.006045	5,403.	550 2972
1750	1.526	B—127	50,850	.006045	5,403.	550 2972
2000	1.630	A—91	58,120	.005289	6,175.	500 3088
2000	1.631	B—127	58,120	.005289	6,175.	500 3088
2500	1.823	A—91	72,650	.004273	7,794.	500 3897
2500	1.824	B—127	72,650	.004273	7,794.	500 3897
3000	1.998	A—127	87,180	.003561	9,353.	500 4677
3000	1.998	B—169	87,180	.003561	9,353.	500 4677
3500	2.158	A—127	101,700	.003082	11,020.	500 5510
3500	2.159	B—169	101,700	.003082	11,020.	500 5510
4000	2.307	A—169	116,200	.002696	12,590.	500 6295
4000	2.309	B—217	116,200	.002696	12,590.	500 6295
4500	2.448	A—169	130,800	.002420	14,300.	As Speci- fied
4500	2.448	B—217	130,800	.002420	14,300.	
5000	2.580	A—169	145,300	.002178	15,890.	
5000	2.581	B—217	145,300	.002178	15,890.	

Letters preceeding the number of strands refer to A.S.-T.M. class designation in B 8-41.

Also furnished in alternate strandings.

Breaking strengths are based on nominal wire diameters.

Resistances: Based on nominal wire diameters. Resistivity at 68°F. (20°C.)—875.2 ohms (mile, pound)—100 per cent I.A.C.S. Conductivity. Increments for stranding:

2,000,000 CM and Less.....	2 Per Cent
Over 2,000,000 CM Including 3,000,000 CM..	3 Per Cent
Over 3,000,000 CM Including 4,000,000 CM..	4 Per Cent
Over 4,000,000 CM Including 5,000,000 CM..	5 Per Cent

Weights are based on nominal wire diameters with same percentage increment for stranding as used for calculation of resistances.

Tolerances conform to tolerances in wire diameters. Total area of conductor shall be not less than 98 per cent of the nominal listed area.

The above data is approximate and subject to normal manufacturing tolerances.

# General Cable Bare Concentric Stranded Cable

Soft or Annealed Copper



Size A.W.G.	Area CM	No. Strands	Over- all Diam. In.	Break- ing Strength Lb.	Resist. Ohms per 1000 Feet 68°F.	Net Wt. Lb. per 1000 Feet	REELS Net Wt. Lb.	Coils Net Wt. Lb.
20	1,022	B—7	.0363	32.11	10.36	3.155	As Specified	
18	1,624	B—7	.0456	51.02	6.513	5.014		
16	2,583	B—7	.0576	81.15	4.096	7.975		
16	2,583	C—19	.0585	81.15	4.096	7.975		
14	4,107	B—7	.0726	124.2	2.576	12.68		
14	4,107	C—19	.0735	129.0	2.576	12.68		
12	6,530	B—7	.0915	197.5	1.620	20.16		
12	6,530	C—19	.0925	205.1	1.620	20.16		
10	10,380	B—7	.116	313.9	1.019	32.05		
10	10,380	C—19	.117	313.9	1.019	32.05		
9	13,090	B—7	.130	395.8	.8080	40.42	As Specified	
9	13,090	C—19	.131	395.8	.8080	40.42		
8	16,510	B—7	.146	499.2	.6407	50.98		15,000 765 250
8	16,510	C—19	.147	499.2	.6407	50.98		15,000 765 250
7	20,820	B—7	.164	629.6	.5081	64.28		12,000 771 250
7	20,820	C—19	.166	629.6	.5081	64.28		12,000 771 250
6	26,250	B—7	.184	793.8	.4030	81.05		12,000 973 250
6	26,250	C—19	.186	793.8	.4030	81.05		12,000 973 250
5	33,100	B—7	.206	1001.	.3196	102.2		10,560 1079 250
5	33,100	C—19	.209	1001.	.3196	102.2		10,560 1079 250
4	41,740	B-A—7	.232	1262.	.2534	128.9	As Specified	10,560 1361 300
4	41,740	C—19	.234	1262.	.2534	128.9		10,560 1361 300
3	52,630	B-A—7	.260	1592.	.2010	162.5		19,560 1716 300
3	52,630	C—19	.263	1592.	.2010	162.5		10,560 1716 300
2	66,370	B-A—7	.292	2007.	.1594	204.9		10,560 2164 300
2	66,370	C—19	.296	2007.	.1594	204.9		10,560 2164 300
1	83,690	A—7	.328	2432.	.1264	258.4		10,560 2729 300
1	83,690	B—19	.332	2531.	.1264	258.4		10,560 2729 300
1/0	105,500	A—7	.368	3066.	.1002	325.7		5,280 1720 300
1/0	105,500	B—19	.373	3190.	.1002	325.7		5,280 1720 300
2/0	133,100	A—7	.414	3868.	.07949	410.9	As Specified	5,280 2170 300
2/0	133,100	B—19	.418	4025.	.07949	410.9		5,280 2170 300
3/0	167,800	A—7	.464	4876.	.06304	518.1		5,280 2736 300
3/0	167,800	A—12	.492	4876.	.06304	518.1		5,280 2736 300
3/0	167,800	B—19	.470	5074.	.06304	518.1		5,280 2736 300
4/0	211,600	A—7	.522	6149.	.04999	653.3		5,280 3450 300
4/0	211,600	A—12	.552	6149.	.04999	653.3		5,280 3450 300
4/0	211,600	B—19	.528	6149.	.04999	653.3		5,280 3450 300

Letters preceeding the number of strands refer to A.S.-T.M. class designation in B 8-41.

Also furnished in alternate strandings.

Breaking strengths are based on nominal wire diameters.

Resistances: Based on nominal wire diameters. Resistivity at 68°F. (20°C.)—875.2 ohms (mile, pound)—100 per cent I.A.C.S. conductivity. Increment for stranding, 2 per cent.

Weights are based on nominal wire diameters. Increment for stranding, 2 per cent.

Tolerances conform to tolerances in wire diameters. Total area of conductor shall be not less than 98 per cent of the nominal listed area.

The above data is approximate and subject to normal manufacturing tolerances.



# General Cable Tinned or Lead Alloy Coated Solid Wire Soft or Annealed Copper



Tinned copper wire and cable can be furnished, either soft annealed or hard drawn, in strandings as well as in solid conductor form. The solid conductor form is normally limited to No. 1 A.W.G. and smaller sizes. Tinned soft or annealed wires are manufactured in accordance with all requirements of A.S.T.M. Spec. B33.

The more commonly used tinned wires and cables are shown in the following table.

Special lead alloy, in place of tin, is used in numerous applications where desirable and can be supplied when required.

Size A.W.G.	Nom. Diam. Mils	DIAMETER RANGE, Mils		Break- ing Strength Lb.	Resist. Ohms per 1000 Feet 68°F.	Net Wt. Lb. per 1000 Feet	STANDARD PACKAGES Feet	Net Wt. Lb.
		Min.	Max.					
40	3.145	3.045	3.445	.311	1126.	.03208	62,300	■2
39	3.531	3.431	3.831	.392	893.0	.04015	49,800	■2
38	3.965	3.865	4.265	.494	708.1	.05025	39,800	■2
37	4.453	4.353	4.753	.623	561.6	.06304	31,700	■2
36	5.000	4.900	5.300	.785	445.4	.07907	63,200	■5
35	5.615	5.515	5.915	.990	353.2	.09929	50,300	■5
34	6.305	6.205	6.605	1.249	280.1	.1247	40,100	■5
33	7.080	6.980	7.380	1.575	222.1	.1567	31,900	■5
32	7.950	7.850	8.250	1.986	176.1	.1968	25,400	■5
31	8.928	8.828	9.228	2.504	139.7	.2476	20,200	■5
30	10.03	9.93	10.33	3.157	110.8	.3113	38,500	■12
29	11.26	11.15	11.60	3.981	87.85	.3917	30,600	■12
28	12.64	12.51	13.02	4.895	68.92	.4929	24,300	■12
27	14.20	14.06	14.63	6.172	54.66	.6204	19,300	■12
26	15.94	15.78	16.42	7.783	43.34	.7810	15,400	■12
25	17.90	17.72	18.44	9.815	34.37	.9833	12,200	■12
24	20.10	19.90	20.70	12.38	27.26	1.238	9,690	■12
23	22.57	22.34	23.25	15.41	21.17	1.559	7,700	■12
22	25.35	25.10	26.11	19.43	16.79	1.965	6,100	■12
21	28.46	28.17	29.31	24.50	13.31	2.474	10,100	■25
20	31.96	31.64	32.92	30.89	10.56	3.117	8,020	■25
19	35.89	35.53	36.97	38.95	8.373	3.927	20,370	●80
18	40.30	39.90	41.51	49.12	6.640	4.949	24,250	●120
17	45.26	44.81	46.62	61.93	5.266	6.237	19,240	●120
16	50.82	50.31	52.34	78.10	4.176	7.860	15,270	●120
15	57.07	56.50	58.78	98.48	3.312	9.906	12,110	●120
14	64.08	63.44	66.00	124.2	2.626	12.84	19,470	●250
13	71.96	71.24	74.12	156.6	2.083	15.74	15,880	●250
12	80.81	80.00	83.23	197.5	1.652	19.84	12,600	●250
11	90.74	89.83	93.46	249.0	1.310	25.00	10,000	●250
10	101.9	100.9	104.9	314.0	1.039	31.52	7,930	●250
9	114.4	113.2	117.8	380.5	.8153	39.73	6,290	●250
8	128.5	127.2	132.3	479.8	.6465	50.09	4,990	●250
7	144.3	142.8	148.6	605.0	.5127	63.15	3,959	●250
6	162.0	160.4	166.9	762.9	.4066	79.61	3,140	●250
5	181.9	180.1	187.3	961.9	.3225	100.4	2,490	●250
4	204.3	202.2	210.4	1213.	.2557	126.6	1,975	●250
3	229.4	227.1	236.3	1530.	.2028	159.5	1,567	●250
2	257.6	255.0	265.3	1929.	.1608	201.1	1,094	●220
1	289.3	286.4	298.0	2432.	.1275	253.6	867	●220

●On reels.

■On spools.

Breaking strengths: Maximum values for nominal diameters based upon tensile strength limits of A.S.T.M. Spec. B33.

Resistances: Maximum values for nominal diameters based upon resistivity limits of A.S.T.M. Spec. B33.

Weights: Nominal values for estimating purposes only and subject to normal variations in manufacture.

# General Cable Concentric Stranded Cable Bare and Tinned Copper—Soft or Annealed Medium Hard and Hard Drawn



CLASS AA. Used for bare cable.

CLASS A. For weather-resistant (weatherproof), slow burning and slow-burning weather-resistant cable, and for bare cable where greater flexibility than is afforded by Class AA is required.

CLASS B. For cable insulated with various materials such as rubber, paper, varnished cloth, etc., and for the cable indicated under Class A where greater flexibility is required.

CLASS C and CLASS D. For cable where greater flexibility is required than is provided by Class B cable.

Size A.W.G.	Class AA		Class A		Class B		Class C		Class D	
	Diam. Ind.	No. Strands	Diam. Ind.	No. Strands	Diam. Ind.	No. Strands	Diam. Ind.	No. Strands	Diam. Ind.	No. Strands
20	1.022	7	1.022	7	1.022	7	1.022	7	1.022	7
18	1.624	7	1.624	7	1.624	7	1.624	7	1.624	7
16	2.583	7	2.583	7	2.583	7	2.583	7	2.583	7
14	4.107	7	4.107	7	4.107	7	4.107	7	4.107	7
12	6.530	7	6.530	7	6.530	7	6.530	7	6.530	7
10	10.380	7	10.380	7	10.380	7	10.380	7	10.380	7
9	13.090	7	13.090	7	13.090	7	13.090	7	13.090	7
8	16.510	7	16.510	7	16.510	7	16.510	7	16.510	7
7	20.820	7	20.820	7	20.820	7	20.820	7	20.820	7
6	26.250	7	26.250	7	26.250	7	26.250	7	26.250	7
5	33.100	7	33.100	7	33.100	7	33.100	7	33.100	7
4	41.740	3	41.740	3	41.740	3	41.740	3	41.740	3
3	52.630	3	52.630	3	52.630	3	52.630	3	52.630	3
2	66.370	3	66.370	3	66.370	3	66.370	3	66.370	3
1	83.690	3	83.690	3	83.690	3	83.690	3	83.690	3
1/0	105.500	7	105.500	7	105.500	7	105.500	7	105.500	7
2/0	133.100	7	133.100	7	133.100	7	133.100	7	133.100	7
3/0	167.800	7	167.800	7	167.800	7	167.800	7	167.800	7
4/0	211.600	7	211.600	7	211.600	7	211.600	7	211.600	7
...	250,000	12	250,000	12	250,000	12	250,000	12	250,000	12
...	300,000	12	300,000	12	300,000	12	300,000	12	300,000	12
...	350,000	12	350,000	12	350,000	12	350,000	12	350,000	12
...	400,000	19	400,000	19	400,000	19	400,000	19	400,000	19
...	450,000	19	450,000	19	450,000	19	450,000	19	450,000	19
...	500,000	19	500,000	19	500,000	19	500,000	19	500,000	19
...	550,000	37	550,000	37	550,000	37	550,000	37	550,000	37
...	600,000	37	600,000	37	600,000	37	600,000	37	600,000	37
...	650,000	37	650,000	37	650,000	37	650,000	37	650,000	37
...	700,000	37	700,000	37	700,000	37	700,000	37	700,000	37
...	750,000	37	750,000	37	750,000	37	750,000	37	750,000	37
...	800,000	37	800,000	37	800,000	37	800,000	37	800,000	37
...	900,000	37	900,000	37	900,000	37	900,000	37	900,000	37
...	1,000,000	37	1,000,000	37	1,000,000	37	1,000,000	37	1,000,000	37
...	1,100,000	...	1,100,000	...	1,100,000	...	1,100,000	...	1,100,000	...
...	1,200,000	...	1,200,000	...	1,200,000	...	1,200,000	...	1,200,000	...
...	1,250,000	...	1,250,000	...	1,250,000	...	1,250,000	...	1,250,000	...
...	1,300,000	...	1,300,000	...	1,300,000	...	1,300,000	...	1,300,000	...
...	1,400,000	...	1,400,000	...	1,400,000	...	1,400,000	...	1,400,000	...
...	1,500,000	...	1,500,000	...	1,500,000	...	1,500,000	...	1,500,000	...
...	1,600,000	...	1,600,000	...	1,600,000	...	1,600,000	...	1,600,000	...
...	1,700,000	...	1,700,000	...	1,700,000	...	1,700,000	...	1,700,000	...
...	1,750,000	...	1,750,000	...	1,750,000	...	1,750,000	...	1,750,000	...
...	1,800,000	...	1,800,000	...	1,800,000	...	1,800,000	...	1,800,000	...
...	1,900,000	...	1,900,000	...	1,900,000	...	1,900,000	...	1,900,000	...
...	2,000,000	...	2,000,000	...	2,000,000	...	2,000,000	...	2,000,000	...
...	2,500,000	...	2,500,000	...	2,500,000	...	2,500,000	...	2,500,000	...
...	3,000,000	...	3,000,000	...	3,000,000	...	3,000,000	...	3,000,000	...
...	3,500,000	...	3,500,000	...	3,500,000	...	3,500,000	...	3,500,000	...
...	4,000,000	...	4,000,000	...	4,000,000	...	4,000,000	...	4,000,000	...
...	4,500,000	...	4,500,000	...	4,500,000	...	4,500,000	...	4,500,000	...
...	5,000,000	...	5,000,000	...	5,000,000	...	5,000,000	...	5,000,000	...

†Optional construction for No. 4/0 A.W.G. size in Class AA and Class A is 12 wires of 132.8 mils diameter.

§Optional construction for No. 3/0 A.W.G. size in Class AA and Class A is 12 wires of 118.3 mils diameter.

||Optional construction for 600,000 c.m. size in Class B is 37 wires of 127.3 mils diameter.

¶Optional construction for 550,000 c.m. size in Class B is 37 wires of 121.9 mils diameter.



## General Cable Copper Trolley Wire

In the manufacture of this wire special care is taken in rolling and drawing to obtain a surface free from imperfections and wire continually true in shape. This produces a contact wire giving maximum life and freedom from operating trouble.

## Round and Grooved



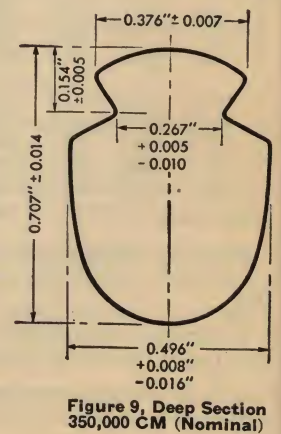
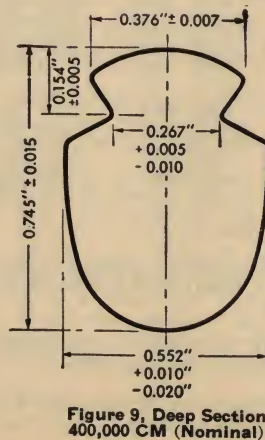
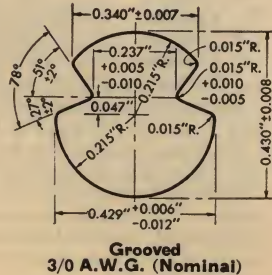
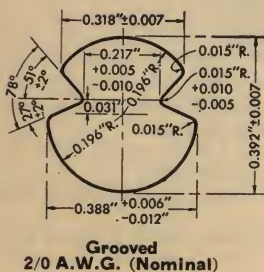
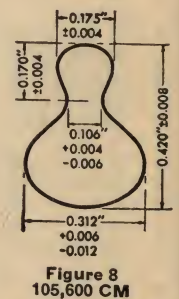
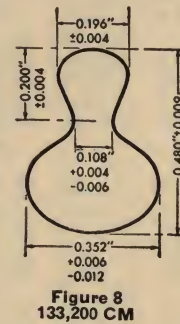
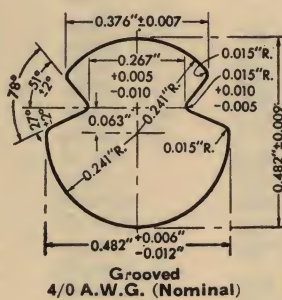
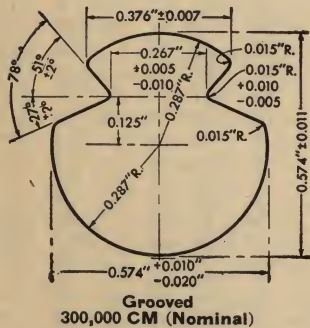
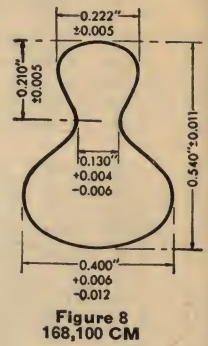
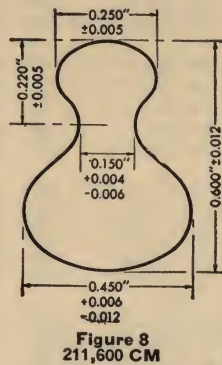
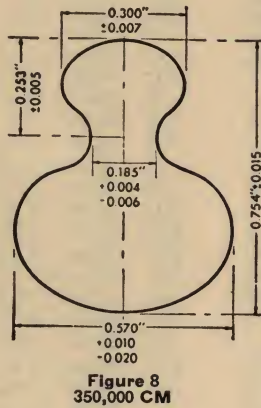
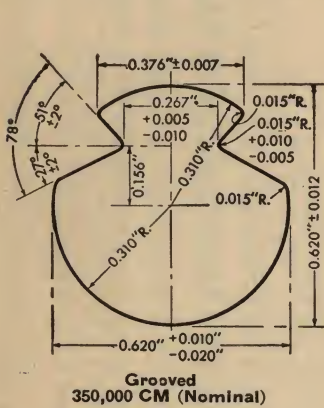
## Figure 8 and Figure 9 (Deep Section)



Manufactured in accordance with American Society for Testing Materials, Specification B47 and American Transit Engineering Association Specification D2. Specifications were prepared jointly by the two associations in collaboration with Association of American Railroads and are identical.

Manufactured in accordance with American Society for Testing Materials Specification B116.

Figure 9 furnished primarily for industrial use.





## General Cable Overhead Line Conductors

## Bare Copper—Hard Drawn and Medium Hard Drawn

General Cable supplies a complete series of bare overhead line conductors to cover the entire range of electrical and physical requirements necessary for all forms of transmission or distribution system design for power, communication, and signal circuits.

Copper conductors provide a useful combination of electrical and physical properties not possessed by any other commercial metal.

**Important advantages are:**  
**High Electrical Conductivity.** Copper has the highest electrical conductivity of all commercial metals which results in the smallest conductor diameter and therefore the lowest transverse stressing of supporting structures in most applications.

**Low Cost.** The low cost of copper makes it a particularly economical conductor.

**Strength.** Hard drawn copper possesses the strength of mild steel. Other tempers provide a wide range of tensile strengths, as required for different applications. A correct adjustment between required strength and necessary flexibility, of particular importance in larger conductor sizes, is therefore always possible with standard copper conductor constructions.

**Hardness.** The hardness and abrasion resistance of copper insure freedom from conductor injury during construction and operation.

**Fatigue Resistance.** Considering vibration troubles of certain types of overhead line conductors, copper has maintained an enviable record of practical freedom from injury due to vibration.

Copper conductors can be assembled by any method available to other conductor types. Special assemblies, such as 3-wire strand, are therefore available to reduce the possibility of vibration under particularly severe operating conditions.

**Permanence.** The exceedingly high resistance of copper to corrosion results in a greater freedom from deterioration, both electrically and mechanically.

**Reliability and Ease of Splicing.** The physical characteristics and corrosion-resisting properties of copper conductors make possible easy and efficient splicing in the field and eliminate the use of special clamps and tools.

**Resistance to Flashover.** The relatively higher melting point and electrical conductivity of copper conductors safeguard them to a remarkable degree from the injurious effects of arcs or flashovers.

**Re-use.** The characteristics which make copper the outstanding metal for line conductors also make practical its re-use when desirable.

**Salvage Value.** Based upon sound economic principles, copper possesses an extraordinarily high salvage value.

ordinarily high salvage value.

**Dependability.** The uniformly satisfactory experience from a tremendous aggregate line mileage over a period of many years is eloquent evidence of the dependability of copper line conductors.

For those applications requiring tensile strengths beyond the limits of copper conductors, constructions using either copper bearing alloys or copper clad steel conductors are available.

## Solid Conductors

Size A.W.G.	Area C.M.	No. Strands	Over- All Diam. In.	Net Wt. Lb. per 1000 Feet	Net Wt. Lb. per Mile	Hard Drawn		Medium Hard		REELS Feet	Coils	
						Min. Break- ing Strength Lb.	Resist. Ohms per 1000 Feet 68°F.	BREAKING STRENGTH POUNDS	Resist. Ohms per 1000 Feet 68°F.		Net Wt. Lb.	Net Wt. Lb.
								Min.	Max.			
14	4,107	..	.06408	12.43	65.64	213.5	2.626	166.6	189.2	2.613	....	125
13	5,178	..	.07196	15.68	82.77	268.0	2.083	208.8	237.2	2.072	....	125
12	6,530	..	.08081	19.77	104.4	337.0	1.652	261.6	297.5	1.643	....	125
11	8,234	..	.09074	24.92	131.6	422.9	1.310	327.6	372.9	1.303	....	250
10	10,380	..	.1019	31.43	165.9	529.2	1.039	410.4	467.5	1.033	....	250
9	13,090	..	.1144	39.63	209.3	661.2	.8238	514.2	586.1	.8195	....	250
8	16,510	..	.1285	49.97	263.9	826.0	.6533	643.9	734.7	.6499	....	250
7	20,820	..	.1443	63.02	332.7	1,030.	.5181	806.6	921.0	.5154	....	250
6	26,250	..	.1620	79.46	419.6	1,280.	.4108	1,010.	1,155.	.4087	11340	900 250
5	33,100	..	.1819	100.2	529.1	1,591.	.3258	1,264.	1,446.	.3241	9000	900 250
4	41,740	..	.2043	126.4	667.1	1,970.	.2584	1,584.	1,814.	.2570	7140	900 250
3	52,630	..	.2294	159.3	841.2	2,439.	.2049	1,984.	2,274.	.2038	5660	900 250
2	66,370	..	.2576	200.9	1,061.	3,003.	.1625	2,450.	2,815.	.1617	6965	1400 250
1	83,690	..	.2893	253.3	1,338.	3,688.	.1287	3,024.	3,484.	.1282	5280	1338 250
1/0	105,500	..	.3249	319.5	1,687.	4,517.	.1011	3,730.	4,310.	.1006	5280	1687 250
2/0	133,100	..	.3648	402.8	2,127.	5,519.	.08021	4,599.	5,330.	.07980	5280	2127 250
3/0	167,800	..	.4096	507.9	2,682.	6,722.	.06361	5,667.	6,590.	.06329	2640	1341 250
4/0	211,600	..	.4600	640.5	3,382.	8,143.	.05045	6,980.	8,143.	.05019	1000	641 250

## Stranded Conductors

6	26,250	3	.201	80.26	423.8	1,205.	.4149	933.9	1,064.	.4128	7000	565 250
5	33,100	3	.226	101.2	534.3	1,505.	.3291	1,170.	1,334.	.3274	5280	534 250
4	41,740	3	.254	127.6	673.8	1,879.	.2610	1,465.	1,672.	.2596	8000	1020 300
3	52,630	3	.285	160.9	849.6	2,359.	.2070	1,835.	2,096.	.2059	6000	970 300
2	66,370	3	.320	202.9	1,071.	2,913.	.1641	2,299.	2,627.	.1633	5280	1071 300
2	66,370	7	.292	204.9	1,082.	3,045.	.1658	2,361.	2,689.	.1649	5280	1082 300
1	83,690	7	.328	258.4	1,364.	3,804.	.1315	2,958.	3,372.	.1308	8000	2050 300
1/0	105,500	7	.368	325.7	1,720.	4,752.	.1043	3,703	4,227.	.1037	8000	2600 300
2/0	133,100	7	.414	410.9	2,170.	5,926.	.08265	4,641.	5,299.	.08223	5280	2170 300
3/0	167,800	7	.464	518.1	2,736.	7,366.	.06556	5,812.	6,642.	.06522	5280	2736 300
3/0	167,800	12	.492	518.1	2,736.	7,556.	.06556	5,890.	6,721.	.06522	5280	2736 300
4/0	211,600	7	.522	653.3	3,450.	9,154.	.05199	7,269.	8,325.	.05172	5280	3450 300
4/0	211,600	12	.552	653.3	3,450.	9,483.	.05199	7,378.	8,425.	.05172	5280	3450 300
4/0	211,600	19	.528	653.3	3,450.	9,617.	.05199	7,479.	8,526.	.05172	5280	3450 ...
...	250,000	12	.600	771.9	4,076.	11,130.	.04400	8,717.	9,957.	.04378	5280	4076 ...
...	250,000	19	.574	771.9	4,076.	11,360.	.04400	8,836.	10,080.	.04378	5280	4076 ...
...	300,000	12	.657	926.3	4,891.	13,170.	.03667	10,390.	11,870.	.03648	5280	4891 ...
...	300,000	19	.629	926.3	4,891.	13,510.	.03667	10,530.	12,010.	.03648	5280	4891 ...
...	350,000	12	.710	1081.	5,706.	15,140.	.03143	12,020.	13,770.	.03127	5280	5706 ...
...	350,000	19	.679	1081.	5,706.	15,590.	.03143	12,200.	13,940.	.03127	5280	5706 ...
...	400,000	19	.726	1235.	6,521.	17,560.	.02750	13,850.	15,840.	.02736	5280	6521 ...
...	450,000	19	.770	1389.	7,336.	19,750.	.02445	15,590.	17,810.	.02432	4650	6500 ...
...	500,000	19	.811	1544.	8,151.	21,950.	.02200	17,320.	19,790.	.02189	4200	6500 ...
...	500,000	37	.814	1544.	8,151.	22,510.	.02200	17,550.	20,030.	.02189	4200	6500 ...
...	600,000	37	.891	1853.	9,781.	27,020.	.01834	21,060.	24,030.	.01824	3500	6500 ...
...	700,000	37	.963	2161.	11,410.	31,170.	.01572	24,410.	27,870.	.01563	3000	6500 ...
...	750,000	37	.997	2316.	12,230.	33,400.	.01467	26,150.	29,860.	.01459	2800	6500 ...
...	800,000	37	1.029	2470.	13,040.	35,120.	.01375	27,710.	31,670.	.01368	2640	6500 ...
...	900,000	37	1.092	2779.	14,670.	39,510.	.01222	31,170.	35,630.	.01216	2300	6400 ...
...	1,000,000	37	1.151	3088.	16,300.	43,830.	.01100	34,350.	39,340.	.01094	2100	6500 ...

Basis for strength, weight, and resistance data:

Hard drawn conductors—A.S.T.M. Specifications B 1 and B 8.

Medium hard drawn conductors—A.S.T.M. Specifications B 2 and B 8.

Increments for stranded conductors (weight and resistance data): 3-wire strand—1%. 7-wire to 37-wire strand inclusive—2%.

The average resistivity of copper ordinarily furnished is somewhat lower than A.S.T.M. maximums.

When lengths are not specified, random lengths will be included. When lengths are specifically agreed upon for any item, 90 per cent of the reels shall have the specified length subject to a variation of 10% plus or minus; the remainder of the item may be shipped in random lengths of not less than 50% of the specified length.



### General Cable Hard Drawn Bare Copper Conductors Solid Conductors

Solid Conductors												PHASE TO NEUTRAL REACTANCE AT 1 FOOT SEPARATION									
SIZE		No. Strands	Overall Diameter Inches	RESISTANCE OHMS PER MILE—68°F.						RESISTANCE OHMS PER MILE—122°F.						OHMS PER MILE					
A.W.G.	CM			D.C.	25 Cycles		50 Cycles		60 Cycles	D.C.	25 Cycles		50 Cycles		60 Cycles	25 Cycles	50 Cycles	60 Cycles			
2	66,370	Solid	.2576	.8530	.8530	.8532	.8533	.9553	.9553	.9555	.9556	.2419	.4838	.5806							
3	52,630	Solid	.2294	1.082	1.082	1.082	1.082	1.205	1.205	1.205	1.205	.2478	.4955	.5946							
4	41,740	Solid	.2043	1.364	1.364	1.364	1.364	1.519	1.519	1.519	1.519	.2536	.5072	.6087							
5	33,100	Solid	.1819	1.720	1.720	1.720	1.720	1.915	1.915	1.915	1.915	.2595	.5190	.6228							
6	26,250	Solid	.1620	2.169	2.169	2.169	2.169	2.415	2.415	2.415	2.415	.2653	.5307	.6368							
7	20,820	Solid	.1443	2.735	2.735	2.735	2.735	3.045	3.045	3.045	3.045	.2712	.5424	.6509							
8	16,510	Solid	.1285	3.449	3.449	3.449	3.449	3.840	3.840	3.840	3.840	.2771	.5541	.6649							

### Stranded Conductors

...	750,000	37	.997	.07745	.07811	.08010	.08127	.08623	.08682	.08862	.08967	.1742	.3484	.4180						
...	700,000	37	.963	.08298	.08360	.08547	.08656	.09239	.09295	.09463	.09562	.1759	.3519	.4223						
...	600,000	37	.891	.09681	.09734	.09895	.09990	.1078	.1083	.1097	.1106	.1799	.3597	.4317						
...	500,000	37	.814	.1162	.1166	.1180	.1188	.1293	.1297	.1310	.1317	.1845	.3690	.4428						
...	500,000	19	.811	.1162	.1166	.1180	.1188	.1293	.1297	.1310	.1317	.1853	.3706	.4447						
...	450,000	19	.770	.1291	.1295	.1307	.1314	.1437	.1441	.1452	.1458	.1879	.3759	.4510						
...	400,000	19	.726	.1452	.1456	.1467	.1473	.1617	.1620	.1630	.1636	.1909	.3818	.4582						
...	350,000	19	.679	.1660	.1663	.1672	.1678	.1848	.1851	.1859	.1864	.1943	.3886	.4663						
...	350,000	12	.710	.1660	.1663	.1672	.1678	.1848	.1851	.1859	.1864	.1918	.3836	.4604						
...	300,000	19	.629	.1936	.1939	.1947	.1952	.2156	.2158	.2165	.2170	.1982	.3963	.4756						
...	300,000	12	.657	.1936	.1939	.1947	.1952	.2156	.2158	.2165	.2170	.1957	.3915	.4698						
...	250,000	19	.574	.2323	.2326	.2332	.2336	.2587	.2589	.2595	.2599	.2028	.4056	.4867						
...	250,000	12	.600	.2323	.2326	.2332	.2336	.2587	.2589	.2595	.2599	.2003	.4006	.4808						
4/0	211,600	19	.528	.2745	.2747	.2753	.2756	.3056	.3058	.3063	.3066	.2070	.4140	.4968						
4/0	211,600	12	.552	.2745	.2747	.2753	.2756	.3056	.3058	.3063	.3066	.2045	.4091	.4909						
4/0	211,600	7	.522	.2745	.2747	.2753	.2756	.3056	.3058	.3063	.3066	.2098	.4195	.5034						
3/0	167,800	12	.492	.3461	.3463	.3468	.3470	.3854	.3855	.3859	.3862	.2104	.4207	.5049						
3/0	167,800	7	.464	.3461	.3463	.3468	.3470	.3854	.3855	.3859	.3862	.2157	.4314	.5177						
2/0	133,100	7	.414	.4365	.4366	.4370	.4372	.4860	.4861	.4864	.4866	.2215	.4429	.5315						
1/0	105,500	7	.368	.5504	.5505	.5508	.5509	.6128	.6129	.6131	.6133	.2274	.4549	.5458						
1	83,690	7	.328	.6940	.6941	.6943	.6945	.7727	.7728	.7730	.7731	.2332	.4665	.5598						
2	66,370	7	.292	.8751	.8752	.8754	.8755	.9744	.9744	.9746	.9747	.2391	.4783	.5739						
2	66,370	3	.320	.8666	.8666	.8668	.8669	.9648	.9649	.9650	.9651	.2380	.4759	.5711						
3	52,630	3	.285	1.093	1.093	1.093	1.093	1.217	1.217	1.217	1.217	.2438	.4877	.5852						
4	41,740	3	.254	1.378	1.378	1.378	1.378	1.534	1.534	1.534	1.534	.2496	.4993	.5991						
5	33,100	3	.226	1.737	1.738	1.738	1.738	1.934	1.934	1.934	1.934	.2555	.5111	.6133						
6	26,250	3	.201	2.191	2.191	2.191	2.191	2.439	2.439	2.439	2.439	.2615	.5229	.6275						

Resistances based on conductivities in accordance with A.S.T.M. Specification B1.

Increments for stranded conductors: 3-wire strand, 1%; 7 to 37-wire strand inclusive, 2%.

### General Cable Hard Drawn Copper Trolley Wires

(97.16% I.A.C.S. Conductivity)

Round Conductors—A.S.T.M. B 47-39

Nominal Conductor Size MCM or A.W.G.	Overall Diameter Inches	AREA		NET WEIGHT, POUNDS Per 1000 Ft.	TENSILE STRENGTH Lb. per Sq. In.	Breaking Strength Pounds	Resistance Ohms per 1000 Ft. 68°F.	REELS	
		C.M.	Square Inches					Feet	Net Weight Pounds
300	.548	300,000	.2356	908.1	4795	46,400	.03558	2640	2400
4/0	.460	211,600	.1662	640.5	3382	49,000	.05044	5280	3382
3/0	.410	168,100	.1320	508.8	2687	51,000	.06350	5280	2687
2/0	.365	133,200	.1046	403.2	2129	52,800	.08014	5280	2129
1/0	.325	105,600	.08294	319.7	1688	54,500	.1011	5280	1688

### Grooved Conductors—A.S.T.M. B 47-39

350	.620	351,200	.2758	1063.	5612	42,800	.03039	1250	1330
300	.574	299,800	.2355	907.5	4792	44,200	.03560	2640	2400
4/0	.482	212,000	.1665	641.8	3389	46,600	.05035	5280	3389
3/0	.430	167,300	.1314	506.4	2674	48,500	.06380	5280	2674
2/0	.392	137,900	.1083	417.4	2205	50,200	.07740	5280	2205
*1/0	.360	105,600	.08294	319.7	1688	51,800	.1011	5280	1688

### †Figure 8 Conductors—A.S.T.M. B 116-40

350	.754x.570	350,100	.2750	1060.	5597	42,800	.03050	2640	2798
4/0	.600x.450	211,600	.1662	640.5	3382	46,600	.05044	5280	3382
3/0	.540x.400	167,800	.1318	507.9	2682	48,500	.06350	5280	2682
2/0	.480x.352	133,100	.1045	402.9	2127	50,200	.08014	5280	2127
1/0	.420x.312	105,600	.08294	319.7	1688	51,800	.1011	5280	1688

### †Figure 9, Deep, Section A.S.T.M. B 116-40

400	.745x.552	397,200	.3120	1202.	6347	41,300	.02687	1000	1202
350	.707x.496	348,900	.2740	1056.	5576	42,800	.03059	1000	1056

\*This size groove wire not included in A.S.T.M. B-47.

†For Figure 8 and Figure 9 wire dimensions given are nominal height of entire section and width of lower lobe.

Size 6/0 A.W.G. (336,200 CM) grooved or Figure 8 will regularly be furnished in 350,000 CM.

Tolerances: Round Wire—Diameter  $\pm 1$  per cent.

Grooved Wire—Dimensions—Area  $\pm 4$  per cent.

Figure 8 Wire—Dimensions.

Figure 9 Wire—Area  $\pm 5$  per cent.

Breaking strengths are based on nominal wire diameters and dimensions.

Resistances are based on nominal wire diameters and dimensions and on the following resistivity: 900.77 ohms (mile, pound) at 68°F. (20°C.)—97.16 per cent I.A.C.S. conductivity.

Weights are based on nominal wire diameters and dimensions.

The above data is approximate and subject to normal manufacturing tolerances.



## General Cable Bare Copper Wire

## Coarse and Intermediate Sizes

A.S.T.M. Standards: Hard Drawn B 1-40; Medium Hard Drawn B 2-40; Soft or Annealed B 3-41

Size A.	W. G.	Diam. Mils.	Area CM	Wt. Lb. per 1000 Ft.	SOFT OR ANNEALED				MEDIUM HARD				HARD DRAWN								
					STANDARD REELS Feet	PKG. Wt. Lb.	STRENGTH Max. Lb.	TENSILE Max. Lb. per Sq. In.	Max. Resist. Ohms per 1000 Ft. 68° F.	BREAKING STRENGTH Pounds	TENSILE STRENGTH POUNDS PER SQUARE INCH Max. Min.	Max. Resist. Ohms per 1000 Ft. Min. 68° F.	Breaking STRENGTH Pounds	TENSILE STRENGTH POUNDS PER SQUARE INCH Max. Min.	Max. Resist. Ohms per 1000 Ft. Min. 68° F.						
																STRENGTH Max. Lb.	TENSILE Max. Lb. per Sq. In.	Max. Resist. Ohms per 1000 Ft. 68° F.	BREAKING STRENGTH Pounds	TENSILE STRENGTH POUNDS PER SQUARE INCH Max. Min.	Max. Resist. Ohms per 1000 Ft. Min. 68° F.
4/0	460.0	211,600.	640.5	1000	641	250	5983.	36,000	.04901	8143.	6980.	49,000	42,000	.05019	8143.	49,000	.05045				
3/0	409.6	167,800.	507.9	2640	1341	250	4745.	36,000	.06180	6590.	5667.	50,000	43,000	.06329	6722.	51,000	.06361				
2/0	364.8	133,100.	402.9	5280	2127	250	3763.	36,000	.07793	5331.	4599.	51,000	44,000	.07980	5519.	52,800	.08021				
1/0	324.9	105,500.	319.3	5280	1686	250	2984.	36,000	.09827	4309.	3729.	52,000	45,000	.1006	4517.	54,500	.1011				
1	289.3	83,690.	253.3	5280	1337	250	2432.	37,000	.1239	3484.	3024.	53,000	46,000	.1282	3688.	56,100	.1287				
2	257.6	66,370.	200.9	5280	1061	250	1929.	37,000	.1563	2815.	2450.	54,000	47,000	.1617	3003.	57,600	.1625				
3	229.4	52,630.	159.3	5280	841	250	1530.	37,000	.1970	2273.	1984.	55,000	48,000	.2038	2439.	59,000	.2049				
4	204.3	41,740.	126.4	5280	667	250	1213.	37,000	.2485	1814.	1584.	55,330	48,330	.2570	1970.	60,100	.2584				
5	181.9	33,100.	100.2	.....	250	961.9	37,000	.....	.3133	1447.	1265.	55,660	48,660	.3241	1591.	61,200	.3258				
6	162.0	26,250.	79.46	.....	250	762.9	37,000	.....	.3951	1155.	1010.	56,000	49,000	.4087	1280.	62,100	.4108				
7	144.3	20,820.	63.02	.....	250	605.0	37,000	.....	.4982	921.0	806.6	56,330	49,330	.5154	1030.	63,000	.5181				
8	128.5	16,510.	49.97	.....	250	479.8	37,000	.....	.6282	734.7	643.9	56,660	49,660	.6499	826.0	63,700	.6533				
9	114.4	13,090.	39.63	.....	250	380.5	37,000	.....	.7921	586.0	514.0	57,000	50,000	.8195	661.2	64,300	.8238				
10	101.9	10,380.	31.43	.....	250	314.0	38,500	.....	.9989	467.4	410.4	57,330	50,330	1.033	529.2	64,900	1.039				
11	90.74	8,234.	24.92	.....	250	249.0	38,500	.....	1.260	372.9	327.6	57,660	50,660	1.303	422.9	65,400	1.310				
12	80.81	6,530.	19.77	.....	125	197.5	38,500	.....	1.588	297.5	261.6	58,000	51,000	1.643	337.0	65,700	1.652				
13	71.96	5,178.	15.68	.....	125	156.6	38,500	.....	2.003	237.2	208.8	58,330	51,330	2.072	268.0	65,900	2.083				
14	64.08	4,107.	12.43	.....	125	124.2	38,500	.....	2.525	189.2	166.6	58,660	51,660	2.613	213.5	66,200	2.626				
15	57.07	3,257.	9.858	.....	125	98.48	38,500	.....	3.184	150.9	133.0	59,000	52,000	3.295	169.8	66,400	3.312				
16	50.82	2,583.	7.818	.....	125	78.10	38,500	.....	4.016	120.3	106.2	59,330	52,330	4.154	135.1	66,600	4.176				
17	45.26	2,048.	6.200	.....	125	61.93	38,500	.....	5.064	95.97	84.71	59,660	52,660	5.239	107.5	66,800	5.266				
18	40.30	1,624.	4.917	.....	50	100	49.12	38,500	6.385	76.54	67.61	60,000	53,000	6.606	85.47	67,000	6.640				
19	35.89	1,288.	3.899	.....	25	50	38.95	38,500	8.051	61.03	53.95	60,300	53,300	8.330	67.99	67,200	8.373				
20	31.96	1,022.	3.092	.....	25	50	30.89	38,500	10.15	48.66	43.05	60,700	53,700	10.50	54.08	67,400	10.56				
21	28.46	810.1	2.452	.....	25	50	24.50	38,500	12.80	38.81	34.36	61,000	54,000	13.24	43.07	67,700	13.31				
22	25.35	642.4	1.945	.....	25	50	19.43	38,500	16.14	30.94	27.41	61,300	54,300	16.70	34.26	67,900	16.79				
23	22.57	509.5	1.542	.....	25	25	15.41	38,500	20.36	24.67	21.87	61,600	54,600	21.06	27.25	68,100	21.17				
24	20.10	404.0	1.223	.....	25	25	12.69	40,000	25.67	19.67	17.45	62,000	55,000	26.56	21.67	68,300	26.69				
25	17.90	320.4	.9699	.....	25	25	10.07	40,000	32.37	15.68	13.92	62,300	55,300	33.49	17.26	68,600	33.66				
26	15.94	254.1	.7692	.....	25	25	7.983	40,000	40.81	12.51	11.11	62,700	55,700	42.23	13.73	68,800	42.44				
27	14.20	201.5	.6100	.....	10	15	6.331	40,000	51.47	9.970	8.863	63,000	56,000	53.25	10.92	69,000	53.52				
28	12.64	159.8	.4837	.....	10	15	5.021	40,000	64.90	7.949	7.070	63,300	56,300	67.14	8.698	69,300	67.49				
29	11.26	126.7	.3836	.....	10	15	3.981	40,000	81.83	6.336	5.640	63,700	56,700	84.66	6.908	69,400	85.10				
30	10.03	100.5	.3042	.....	10	15	3.157	40,000	103.2	5.051	4.499	64,000	57,000	106.8	5.502	69,700	107.3				
31	8.928	79.70	.2413	.....	5	10	2.504	40,000	130.1	4.027	3.589	64,300	57,300	134.6	4.376	69,900	135.3				
32	7.950	63.21	.1913	.....	5	10	1.986	40,000	164.1	3.210	2.862	64,600	57,600	169.8	3.485	70,200	170.6				
33	7.080	50.13	.1517	.....	5	10	1.575	40,000	206.9	2.558	2.283	65,000	58,000	214.1	2.772	70,400	215.2				
34	6.305	39.75	.1203	.....	4	10	1.249	40,000	260.9	2.040	1.821	65,300	58,300	269.9	2.204	70,600	271.3				
35	5.615	31.52	.09542	.....	4	6	.9904	40,000	329.0	1.625	1.452	65,600	58,600	340.4	1.755	70,900	342.1				
36	5.000	25.00	.07568	.....	2	6	.7854	40,000	414.8	1.295	1.158	66,000	59,000	429.2	1.396	71,100	431.4				
37	4.453	19.83	.06002	.....	2	6	.6228	40,000	523.1	1.033	.9238	66,300	59,300	541.2	1.110	71,300	544.0				
38	3.965	15.72	.04759	.....	2	6	.4939	40,000	659.6	.8231	.7367	66,700	59,700	682.4	.8829	71,500	686.0				
39	3.531	12.47	.03774	.....	2	.....	.3917	40,000	831.8	.6561	.5876	67,000	60,000	860.5	.7031	71,800	865.0				
40	3.145	9.888	.02993	.....	2	.....	.3106	40,000	1049.0	.5227	.4685	67,300	60,300	1085.0	.5592	72,000	1091.0				
41	2.800	7.842	.02374	.....	1	.....	.2464	40,000	1323.0	.4145	.3716	67,300	60,300	1368.0	.4434	72,000	1375.0				
42	2.494	6.219	.01882	.....	1	.....	.1954	40,000	1668.0	.3287	.2947	67,300	60,300	1725.0	.3517	72,000	1734.0				
43	2.221	4.932	.01493	.....	1/2	.....	.1549	40,000	2103.0	.2607	.2337	67,300	60,300	2176.0	.2789	72,000	2187.0				
44	1.978	3.911	.01184	.....	1/2	.....	.1229	40,000	2652.0	.2067	.1853	67,300	60,300	2743.0	.2212	72,000	2758.0				
45	1.761	3.102	.009388	.....	1/2	.....	.09744	40,000	3344.0	.1639	.1469	67,300	60,300	3459.0	.1754	72,000	3477.0				

\*Size 18 A.W.G. and smaller on spools.

Weights are based on nominal wire diameters. Breaking strengths are based on nominal wire diameters.

## Tolerances

Diameter: Hard drawn A.S.T.M. B 1.

Medium hard drawn A.S.T.M. B 2.

Wires .100-inch diameter and larger.....  $\pm 1$  per cent.Wires under .100-inch diameter.....  $\pm .001$ -inch.

No A.S.T.M. requirements for hard or medium hard wire for wires smaller than size 18 A.W.G. (.0403-inch).

Soft or annealed A.S.T.M. B 3.

Wires .010-inch diameter and larger.....  $\pm 1$  per cent.Wires under .010-inch diameter.....  $\pm .001$ -inch.

Weight: Tolerances in weight conform to tolerances in diameter (area).

The Above data is approximate and subject to normal manufacturing tolerances.



## General Cable Square and Rectangular Copper Wire

Soft or Annealed, Bare (A.S.T.M. Specification B48)



Used in the construction of transformers and other electrical machinery. Made by processing, round wire. Finished with round corners. Physical characteristics are controlled to provide sections suitable for edgewise bending. Fabricated wire is subjected to special final polishing and cleaning.

### Tensile Properties

Specified Thickness Inches	Tensile Strength Max. per Sq. In.	Elongation in 10 In. Minimum Per Cent
0.290 and Over.....	36,000	35
0.289 to 0.051.....	37,000	32
0.050 to 0.021.....	38,000	30
0.020 to 0.011.....	40,000	25
0.010 and Under.....		20

### Dimensions and Permissible Variations

Specified Thickness Inches	Thickness		
	MAXIMUM THICKNESS, PLUS OR MINUS		
	1.001 In. and Over in Width	1.000 to 0.501 In. in Width	0.500 In. and Under in Width
0.501 and Over.....	1 Per Cent	1 Per Cent	.....
0.500 to 0.301.....	1 Per Cent	1 Per Cent	0.003 In.
0.300 to 0.201.....	0.003 In.	1 Per Cent	1 Per Cent
0.200 to 0.101.....	0.0025 In.	1 Per Cent	1 Per Cent
0.100 to 0.051.....	0.002 In.	0.001 In.	0.001 In.
0.050 and Under....	0.0015 In.	0.001 In.	0.001 In.

Specified Width Inches	Width		
	Maximum Width, Plus or Minus		
	1 Per Cent But Not to Exceed 0.016 In.	0.003 In.	1 Per Cent
0.501 and Over...	1 Per Cent But Not to Exceed 0.016 In.	0.003 In.	1 Per Cent
0.500 to 0.301....	1 Per Cent But Not to Exceed 0.016 In.	0.003 In.	1 Per Cent
0.300 to 0.101....	1 Per Cent But Not to Exceed 0.016 In.	0.003 In.	1 Per Cent
0.100 and Under..	1 Per Cent But Not to Exceed 0.016 In.	0.003 In.	1 Per Cent

### Radius of Corners

Specified Thickness Inches	Specified Width, INCHES		
	0.751 and Over	0.189 to 0.750 Incl.	Up to 0.188 Incl.
0.689 and Over	3/16	3/16	..
0.688 to 0.439 Incl.	1/8	3/32	..
0.438 to 0.266 Incl.	3/32	1/16	..
0.225 to 0.166 Incl.	1/16	3/64	3/64
0.165 to 0.126 Incl.	1/16	1/32	1/32
0.125 to 0.073 Incl.	1/16	1/32	1/64
*0.072 to 0.051 Incl.	†Rounded Edge	†Rounded Edge	1/64
0.050 and Under	†Rounded Edge	†Rounded Edge	†Rounded Edge

\*Square wire, 0.072 inches and under, shall have a corner radius of 0.012 inches  $\pm$  25 per cent.

†A rounded edge is an edge produced by rolling round wire to the size specified either with or without edging rolls.

### Density

For the purpose of calculating weights, cross-sections, etc., the density of the copper shall be taken as 8.89g. per cubic cm. (0.32117 pounds per cubic inch) at 20°C. (68°F.).

### Resistivity (Percentage Conductivity)

Resistivity is used in place of percentage conductivity. The value of 0.15328-ohm (meter, gram) at 20°C. (68°F.) is the international standard for the resistivity of annealed copper equal to 100 per cent conductivity. This term means that a wire 1 mile in length and weighing 1 gram would have a resistance of 0.15328-ohm. This is equivalent to a resistivity value of 875.20 Ohms (mile, pound), which signifies the resistance of a wire 1 mile in length weighing 1 pound. It is also equivalent, for example, to 1.7241 microhms per centimeter of length of a bar 1 square centimeter in cross-section. Conductivity at 20°C. (68°F.), Per Cent.... 100.00

Ohms (Mile, Pound).....	875.20
Ohm (Meter, Gram).....	0.15328
Ohms (Mil, Foot).....	10.371
Ohm (Meter, Square Millimeter).....	0.017241
Microhm—Inch.....	0.67879
Microhm—Centimeter.....	1.7241

## General Cable Bare Cable Composite Copper-Bronze



Composite cables unite the electrical conductance of copper with the mechanical strength of bronze. For rural lines and special constructions such as river crossings, etc., and long span construction or other service conditions.

Other sizes and constructions are available.

Conductor No.	HARD DRAWN COPPER EQUIV.		CONSTRUCTION		Conductor Diam. In.	Breaking Strength Pounds
	A.W.G.	CM	Hard Drawn Copper	Hard Drawn Bronze		
2DS3	2	66,370	1/.2196	2/.1717	0.408	6605
4DS3	4	41,740	1/.1742	2/.1362	0.324	4281
6DS3	6	23,250	1/.1381	2/.1080	0.257	2810
8DS3	8	16,510	1/.1090	2/.1059	0.223	2306
8BS3	8	16,510	.....	3/.1337	0.288	4192
9DS3	9	13,090	1/.0873	2/.0943	0.198	1845
10BS3	10	10,380	.....	3/.1061	0.229	2770

Conductor No.	AREA		Final Modulus of Elasticity	Coefficient of Linear Expansion per °F.	—Wt., Lb.—	
	CM	Sq. In.			Per 1000 Feet	Per Mile
2DS3	107,200	0.08418	15,500,000	0.0000096	325.20	1717.0
4DS3	67,410	0.05294	15,500,000	0.0000096	204.50	1080.0
6DS3	42,390	0.03329	15,500,000	0.0000096	128.60	679.2
8DS3	32,030	0.02516	15,250,000	0.0000097	97.04	512.4
8BS3	53,660	0.04214	15,250,000	0.0000097	162.10	855.7
9DS3	25,400	0.01995	15,000,000	0.0000098	76.96	406.3
10BS3	33,750	0.02650	15,000,000	0.0000098	101.90	538.1

## General Cable Alectral Weatherproof Service Wire

### Hard-Drawn Aluminum Conductors Gencaprene Type

A homogeneous, seamless covering made of Neoprene. Provides a Thermosetting, completely vulcanized covering that will not drip or become brittle under extreme weather conditions.

### Aluminum Wire

Size A.W.G.	Copper Equivalent	Diameter Mils	AREA		Resistance Ohms per 1000 Feet at 68° F.
			CM	Sq. In.	
2	4	257.6	66,370	.05213	.2563
4	6	204.3	41,740	.03278	.4075
6	8	162.0	26,210	.02062	.6480
8	10	128.5	16,510	.01297	1.0300

### Covered Wire

Size A.W.G.	Copper Equivalent	Diameter Mils	Breaking Strength Pounds	Wt. Lb. per 1000 Feet
2	4	257.6	1040	91
4	6	204.3	747	63
6	8	162.0	470	45
8	10	128.5	308	33

### U.R.C. Type

OK Braided Type conforms to A.S.A. and U.R.C. specifications.

Peerless Type is a weatherproof wire having the same weight covering as triple braided wire and characteristics providing exceptional length of life. Covering conforms to A.S.A. and U.R.C. specifications.

### Braided Type

Size A.W.G.	Copper Equivalent	Diameter Mils	Breaking Strength Pounds	Wt. Lb. per 1000 Feet
2	4	257.6	986	120.2
4	6	204.3	708	76.0
6	8	162.0	446	56.7
8	10	128.5	292	40.2

### Peerless Type—OK Braided Type

Size A.W.G.	Copper Equivalent	Diameter Mils	AREA		Resistance Ohms per 1000 Feet at 68° F.
			CM	Sq. In.	
2	4	257.6	66,370	.05213	.2563
4	6	204.3	41,740	.03278	.4075
6	8	162.0	26,210	.02062	.6480
8	10	128.5	16,510	.01297	1.0300

### Peerless Type—Triple Braid Weight

Size A.W.G.	Copper Equivalent	Diameter Mils	Breaking Strength Pounds	Wt. Lb. per 1000 Feet
2	4	257.6	986	120.2
4	6	204.3	708	76.0
6	8	162.0	446	56.7
8	10	128.5	292	40.2



## Copperweld-Copper 3-Wire Standard



No.	Conductance		Resistance	Diameter	Diameter
	A.W.G.	CM	68°F. Ohms per 1000 Ft.	Cable Inches	Wires Inches
2A	2	66,370	.1641	.366	.1699
3A	3	52,630	.2070	.326	.1513
4A	4	41,740	.2610	.290	.1347
5A	5	33,100	.3291	.258	.1200
5D	5	33,100	.3291	.310	.1438
6A	6	26,250	.4150	.230	.1068
6D	6	26,250	.4150	.276	.1281
7A	7	20,820	.5232	.223	*.1266
7D	7	20,820	.5232	.246	.1141
8A	8	16,510	.6598	.199	*.1127
8C	8	16,510	.6598	.179	*.08081
8D	8	16,510	.6598	.219	.1016
9½D	9½	11,750	.9170	.174	.08081

No.	Breaking	Cross-	WEIGHT, POUNDS	
	Load Pounds	Section Sq. In.	per 1000 Ft.	per Mile
2A	5,876	.06799	256.80	1356.0
3A	4,810	.05392	203.60	1075.0
4A	3,938	.04276	161.50	852.8
5A	3,193	.03391	128.10	676.3
5D	6,035	.04874	178.90	944.4
6A	2,585	.02689	101.60	536.3
6D	4,942	.03866	141.80	748.9
7A	2,754	.02516	93.66	494.6
7D	4,022	.03066	112.50	594.0
8A	2,233	.01995	74.27	392.2
8C	1,362	.01604	60.67	320.3
8D	3,256	.02431	89.21	471.0
9½D	1,743	.01539	56.46	298.1

Modulus of Elasticity		Coefficient of Expansion per Degree F.		*Copper Wires Diameter
2A to 6A Incl.	19,000,000	2A to 6A Incl.	.000,008,57	7A .08949"
7A and 8A	21,000,000	7A and 8A	.000,008,18	A .07969"
C	19,000,000	D	.000,008,58	C .08336"
C	22,000,000	D	.000,007,8	

## Copperweld Telephone Line Wire



Type	Diam. In.	Breaking Load Lb.	RESISTANCE OHMS		Wt. Lb. per Mile
			Per 1000 Ft.	Per Mile	
10 AWG H.S.	.1019	1130	2.547	13.45	152.1
.104" Diam. H.S.	.1040	1177	2.445	12.91	158.5
12 AWG H.S.	.08081	785	4.051	21.39	95.68
.080" Diam. H.S.	.080	770	4.133	21.82	93.77
.104" Diam. E.H.S.	.104	1325	2.445	12.91	158.5

## General Cable Weatherproof Wire and Cable



**Peerless\*-URC Triple or Double Braid Weight**



### "O.K.\*-URC" Triple Braid



**"O.K.\*-URC" Double Braid  
With Stranded Copper Conductors**

Size A.W.G.	No. Feet on Reel	Triple-Braided and Peerless Triple Braid			Double-Braided and Peerless Double Braid		
		Weight Net			Weight Net		
		WEIGHT, POUNDS—			WEIGHT, POUNDS—		
		Per 1000 Feet	Per Mile	Per Reel	Per 1000 Feet	Per Mile	Per Reel
8	4000	78	410	312	68	359	272
6	3000	115	610	345	103	544	309
5	2000	140	740	280	126	668	252
4	2000	170	900	340	155	820	310
3	1500	206	1090	309	190	1004	285
2	1250	270	1425	338	246	1301	308
1	1000	328	1735	328	303	1599	303
1/0	4000	424	2240	1700	388	2051	1552
2/0	3500	522	2760	1830	482	2544	1687
3/0	3000	653	3450	1960	604	3190	1812
4/0	2500	800	4220	2000	745	3935	1863
MCM							
250	2500	985	5200	2460	907	4788	2268
300	2000	1174	6200	2350	1083	5721	2166
350	2000	1345	7100	2690	1248	6589	2496
400	2000	1553	8200	3106	1436	7584	2872
450	2000	1724	9100	3448	1601	8452	3202
500	2000	1894	10000	3788	1765	9318	3530
600	1500	2235	11800	3340	2093	11052	3140
700	1200	2650	14000	3180	2471	13045	2965
750	1100	2822	14900	3104	2635	13913	2899
800	1000	2992	15800	2992	2799	14779	2799
900	1000	3332	17600	3332	3127	16513	3127
1000	900	3674	19400	3300	3456	18246	3110
1250	800	4508	23800	3606	4264	22516	3411
1500	700	5380	28400	3766	5098	26915	3569
1750	600	6193	32700	3716	5894	31119	3536
2000	500	7008	37000	3504	6690	35323	3345

**With Solid Copper Conductors**

		Triple-Braided and Peerless Triple Braid				Double-Braided and Peerless Double Braid				
		Weight NET				Weight NET				
		WEIGHT, POUNDS				WEIGHT, POUNDS				
Size	No. Ft. on Reel	No. Ft. in Coil	Per 1000 Feet	Per Mile	Per Reel	Per Coil	Per 1000 Feet	Per Mile	Per Reel	Per Coil
14	....	....	25	130	†	...	20	107	....	†
12	....	....	35	185	†	...	30	158	....	†
10	6400	3970	53	280	340	210	46	241	295	180
9	6300	3150	62	325	390	195	54	283	340	170
8	5000	2500	75	395	370	185	66	349	330	165
6	3150	1575	112	590	350	175	100	529	315	160
5	2000	1260	135	710	270	170	122	646	244	154
4	1980	990	164	865	320	160	151	795	295	150
3	1600	753	199	1050	320	160	185	977	295	150
2	1240	620	260	1370	320	160	239	1264	295	150
1	990	495	316	1670	310	155	294	1553	290	145
1/0	4000	....	407	2150	1630	...	377	1989	1508	...
2/0	3500	....	502	2650	1760	...	467	2467	1635	...
3/0	3000	....	629	3320	1890	...	587	3098	1761	...
4/0	2500	....	767	4050	1920	...	723	3817	1808	...

Sizes 12 and 14 A.W.G. are supplied in 100-pound bundles of four coils each, weighing approximately 25 pounds. Sizes 8, 9 and 10 A.W.G. may also be supplied in bundles.



## General Cable \*Super Service S Cable

Single Conductor—600 Volts



Designed for general portable power supply service whenever a heavy duty flexible cable is required. Specific uses, especially in the smaller conductor sizes, are for gathering reel locomotives in mines. For motor lead use, this cable can be supplied with a paper separator over the conductor.

Size A.W.G.	CONDUCTORS WIRE			Current Carrying Capacity Amperes	Insulation Thickness Inches	Overall Diameter Inches
	No.	Diam. In.	Diam. In.			
8	49	.0184	.166	45	$\frac{1}{64}$	.44
6	49	.0231	.208	60	$\frac{1}{64}$	.51
6	133	.0140	.210	60	$\frac{1}{64}$	.51
4	49	.0292	.263	85	$\frac{1}{64}$	.57
4	133	.0177	.266	85	$\frac{1}{64}$	.57
3	49	.0328	.295	95	$\frac{1}{64}$	.63
3	133	.0199	.299	95	$\frac{1}{64}$	.63
2	133	.0223	.335	110	$\frac{1}{64}$	.66
2	259	.0160	.336	110	$\frac{1}{64}$	.66
1	133	.0251	.377	130	$\frac{5}{64}$	.74
1	259	.0180	.378	130	$\frac{5}{64}$	.74
1/0	133	.0282	.423	150	$\frac{5}{64}$	.77
1/0	259	.0202	.424	150	$\frac{5}{64}$	.77
2/0	133	.0316	.474	175	$\frac{5}{64}$	.82
2/0	259	.0227	.477	175	$\frac{5}{64}$	.82
3/0	259	.0255	.536	205	$\frac{5}{64}$	.87
3/0	427	.0198	.535	205	$\frac{5}{64}$	.87
4/0	259	.0286	.601	235	$\frac{5}{64}$	.93
4/0	427	.0222	.600	235	$\frac{5}{64}$	.93
MCM						
250	259	.0311	.653	275	$\frac{9}{64}$	1.03
250	427	.0242	.653	275	$\frac{9}{64}$	1.03
300	259	.0340	.714	305	$\frac{9}{64}$	1.09
300	427	.0265	.716	305	$\frac{9}{64}$	1.09
350	259	.0368	.773	345	$\frac{9}{64}$	1.15
350	427	.0286	.772	345	$\frac{9}{64}$	1.15
400	259	.0393	.825	375	$\frac{9}{64}$	1.20
400	427	.0306	.826	375	$\frac{9}{64}$	1.20
450	259	.0417	.876	400	$\frac{9}{64}$	1.26
450	427	.0325	.878	400	$\frac{9}{64}$	1.26
500	259	.0439	.922	425	$\frac{9}{64}$	1.31
500	427	.0342	.923	425	$\frac{9}{64}$	1.31
550	427	.0359	.969	450	$\frac{7}{64}$	1.41
550	703	.0280	.980	450	$\frac{7}{64}$	1.42
600	427	.0375	1.013	475	$\frac{7}{64}$	1.45
600	703	.0292	1.022	475	$\frac{7}{64}$	1.46
650	427	.0390	1.053	495	$\frac{7}{64}$	1.49
650	703	.0304	1.064	495	$\frac{7}{64}$	1.50
700	427	.0405	1.094	520	$\frac{7}{64}$	1.53
700	703	.0316	1.106	520	$\frac{7}{64}$	1.54
750	427	.0419	1.131	540	$\frac{7}{64}$	1.57
750	703	.0327	1.145	540	$\frac{7}{64}$	1.58

\*Trade-mark.

Sizes 4, 3, and 2 A.W.G. single-conductor cable are made with a spider web braid of heavy single end cotton between inner insulating rubber and outer jacket to serve the special requirements of cables used on gathering reel locomotives in coal mines. All other sizes have helical winds.

## General Cable \*Super Service S Welding Cable



This cable possesses an overall protective jacket of tough resilient Neoprene compound especially designed to withstand severe service and yet remain flexible.

Exceptional flexibility is obtained by the use of a large number of extremely fine bare copper wires, rope stranded.

Coils easily, lies flat, does not kink or tangle. May be dragged through puddles and subjected to all kinds of hard usage in damp places.

				I.P.C.E.A.		
				CABLE RATINGS		
				Based on		
				Voltage Drop		
				60°C. Copper		
				Temperature		
				per 100 Ft.		
				Volts		
CONDUCTOR				Overall Diam. In.	Current Carrying Capacity Amperes	60°C. Copper Temperature per 100 Ft. Volts
Size A.W.G.	Construction	Diam. In.				
4	7x7x 22/#34	.300	.495	100	3.18	
3	7x7x 27/#34	.335	.500	150	3.70	
2	7x7x 34/#34	.375	.560	200	3.92	
1	7x7x 43/#34	.415	.625	250	3.88	
1/0	7x7x 54/#34	.460	.675	300	3.72	
2/0	7x7x 68/#34	.520	.750	375	3.68	
3/0	7x7x 87/#34	.575	.815	450	3.51	
4/0	7x7x 109/#34	.630	.900	550	3.41	

\*Trade-mark.

The above values for carrying capacity are based on a copper temperature of 60°C. and an ambient temperature of 40°C. and yield load factors of from approximately 32% for 2 A.W.G. cable to approximately 23% for 3 A.W.G. cable, and higher for the smaller sizes. The sizes of cable used range from 2 to 3/0 A.W.G. In actual service the load factor may be much higher without overheating the cable as the ambient temperature will generally be substantially lower than 40°C.

## General Cable \*Super Service S Grounding Cable



Extensively used for temporary grounding of transmission lines of all voltages to 132,000 volts.

Ground clamp with cable attached is hooked on the line by means of a grounding stick, the other end having previously been connected to ground by clamping to transmission tower or when working on a pole, to any temporary ground connection available. This cable is also used in generating stations and substations for grounding apparatus during repairs.

CONDUCTOR			Current Carrying Capacity Amperes	Overall Diam. In.
Size A.W.G.	Construction	Diam. In.		
6	133x .0140"	.210	60	.625
4	133x .0177"	.265	85	.675
3	133x .0199"	.298	95	.750
2	133x .0223"	.334	110	.750
1	133x .0251"	.376	130	.800
1/0	259x .0202"	.424	150	.850
2/0	259x .0227"	.477	175	.900
3/0	259x .0255"	.535	205	1.000
4/0	259x .0286"	.600	235	1.050

\*Trade-mark.



## General Cable \*Super Service S Mining Machine Cable

### 2-Conductor Concentric Type—600 Volts



Used almost exclusively in mines on cutting machines and locomotives and are designed to have maximum flexibility for this type of cable. Manufactured in sizes 6 to 4/0 A.W.G. inclusive.

The central conductor is insulated with Performance Grade synthetic rubber or rubber compound over which is applied a compound filled tape. Concentric wires, having a conductivity equal to the central conductor, are laid helically, to provide full coverage over the insulated and taped inner conductor. The core thus formed is then covered with a layer of Performance Grade synthetic rubber or rubber compound which adheres strongly to the concentric strands. There is then applied a spider web braid of heavy single end cotton, and finally a heavy Neoprene jacket overall.

Size A.W.G.	CONDUCTORS		Diam. In.	Current Carrying Capacity Amperes	Insulation Thickness Inches	Overall Diameter Inches
	Construction					
6	6x7 / .0250"		.214	50	$\frac{5}{64}$	.77
6	6x19 / .0152"		.216	50	$\frac{5}{64}$	.77
4	6x7 / .0315"		.284	65	$\frac{5}{64}$	.84
4	6x19 / .0191"		.287	65	$\frac{5}{64}$	.84
3	6x7 / .0354"		.319	75	$\frac{5}{64}$	.89
3	6x19 / .0215"		.322	75	$\frac{5}{64}$	.89
2	6x19 / .0241"		.362	90	$\frac{5}{64}$	.94
2	6x37 / .0173"		.363	90	$\frac{5}{64}$	.94
1	6x19 / .0271"		.406	100	$\frac{5}{64}$	1.05
1	6x37 / .0194"		.408	100	$\frac{5}{64}$	1.05

The concentric conductor construction has a resistance no greater than that of the inner conductor.

Cables of larger sizes, up to and including 4/0 A.W.G. can also be furnished.

### 2-Conductor Parallel Duplex Type—600 Volts



Used in mines on cutting machines as a battery charging cable, and for other general uses requiring a 2 conductor all-rubber cable. Insulated with Performance Grade synthetic rubber or rubber compound. Identified by black insulation on one conductor and white insulation on the other. Conductors are laid parallel with rubber-like fillers in lateral interstices, and covered with a Neoprene sheath. A strong reinforcing cord directly under the sheath strengthens the cable and opposes kinking.

Size A.W.G.	CONDUCTORS		Diam. In.	Diam. In.	Current Carrying Capacity Amperes	Insulation Thickness Inches	Overall Diameter Inches
	WIRE						
No.		Diam. In.					
8	49	.0184	.166	40	$\frac{5}{64}$	.57x.88	
6	49	.0231	.208	50	$\frac{5}{64}$	.62x.98	
6	133	.0140	.210	50	$\frac{5}{64}$	.62x.98	
4	49	.0292	.263	70	$\frac{5}{64}$	.71x1.13	
4	133	.0177	.266	70	$\frac{5}{64}$	.71x1.13	
3	49	.0328	.295	80	$\frac{5}{64}$	.74x1.20	
3	133	.0199	.299	80	$\frac{5}{64}$	.74x1.20	
2	133	.0223	.335	95	$\frac{5}{64}$	.77x1.27	
2	259	.0160	.336	95	$\frac{5}{64}$	.77x1.27	
1	133	.0251	.377	110	$\frac{5}{64}$	.88x1.44	
1	259	.0180	.378	110	$\frac{5}{64}$	.88x1.44	

Cables of larger sizes, up to and including 4/0 A.W.G. can also be furnished.

\*Trade-mark.

## General Cable \*Super Service S Cable

### 2-Conductor Round Type—600 Volts

### 3-Conductor—600 Volts

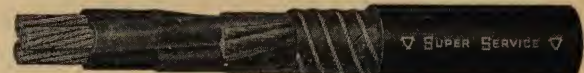
Used for general power supply purposes for motors and various types of portable equipment.

Type G cable is furnished with ground wires.

Type W cable is furnished without ground wires.



2-Conductor



3-Conductor

		-2-CONDUCTOR				-3-CONDUCTOR			
CONDUCTORS		Diam. In.	Diam. In.	Insulation Thick- ness In.	Current Carrying Cap. Amp.	Over-all Diam. In.	Current Carrying Cap. Amp.	Over-all Diam. In.	Ground Wire Construction
Size A.W.G.	No.								
8	49	.0184	.166	$\frac{5}{64}$	40	.81	35	.91	7x7 / #31
6	49	.0231	.208	$\frac{5}{64}$	50	.93	50	1.01	7x7 / #29
6	133	.0140	.210	$\frac{5}{64}$	50	.93	50	1.01	7x7 / #29
4	49	.0292	.263	$\frac{5}{64}$	70	1.08	65	1.17	19x7 / #31
4	133	.0177	.266	$\frac{5}{64}$	70	1.08	65	1.17	19x7 / #31
3	49	.0328	.295	$\frac{5}{64}$	80	1.17	75	1.24	19x7 / #30
3	133	.0199	.299	$\frac{5}{64}$	80	1.17	75	1.24	19x7 / #30
2	133	.0223	.335	$\frac{5}{64}$	95	1.27	90	1.34	19x7 / #29
2	259	.0160	.336	$\frac{5}{64}$	95	1.27	90	1.34	19x7 / #29
1	133	.0251	.377	$\frac{5}{64}$	110	1.44	100	1.51	19x7 / #28
1	259	.0180	.378	$\frac{5}{64}$	110	1.44	100	1.51	19x7 / #28
1/0	133	.0282	.423	$\frac{5}{64}$	130	1.52	120	1.65	19x7 / #27
1/0	259	.0202	.424	$\frac{5}{64}$	130	1.52	120	1.65	19x7 / #27
2/0	133	.0316	.474	$\frac{5}{64}$	150	1.65	135	1.75	19x7 / #26
2/0	259	.0227	.477	$\frac{5}{64}$	150	1.65	135	1.75	19x7 / #26
3/0	259	.0255	.536	$\frac{5}{64}$	175	1.77	155	1.89	19x7 / #25
3/0	427	.0198	.535	$\frac{5}{64}$	175	1.77	155	1.89	19x7 / #25
4/0	259	.0286	.601	$\frac{5}{64}$	200	1.92	180	2.04	19x7 / #24
4/0	427	.0222	.600	$\frac{5}{64}$	200	1.92	180	2.04	19x7 / #24

### 4-Conductor—600 Volts



CONDUCTORS				Current Carrying Capacity Amperes	Insul- ation Thick- In:	Over- all Diam. In.	Ground Wire Construc- tion
Size A.W.G. No.	WIRE	Diam. In.	Diam. In.				
8	49	.0184	.166	30	$\frac{5}{64}$	.99	7x7 / #32
6	49	.0231	.208	40	$\frac{5}{64}$	1.10	7x7 / #30
6	133	.0140	.210	40	$\frac{5}{64}$	1.10	7x7 / #30
4	49	.0292	.263	55	$\frac{5}{64}$	1.27	7x7 / #28
4	133	.0177	.266	55	$\frac{5}{64}$	1.27	7x7 / #28
3	49	.0328	.295	65	$\frac{5}{64}$	1.34	19x7 / #31
3	133	.0199	.299	65	$\frac{5}{64}$	1.34	19x7 / #31
2	133	.0223	.335	75	$\frac{5}{64}$	1.48	19x7 / #30
2	259	.0160	.336	75	$\frac{5}{64}$	1.48	19x7 / #30
1	133	.0251	.377	85	$\frac{5}{64}$	1.68	19x7 / #29
1	259	.0180	.378	85	$\frac{5}{64}$	1.68	19x7 / #29

CONDUCTORS				Current Carrying Capacity Amperes	Insu- lation Thick. In.	Over- all Diam. In.	Ground Wire Construc- tion
Size A.W.G.	WIRE		Diam. In.				
No.							
1/0	133	.0282	.423	100	$\frac{5}{64}$	1.79	19x7 / #28
1/0	259	.0202	.424	100	$\frac{5}{64}$	1.79	19x7 / #28
2/0	133	.0316	.474	115	$\frac{5}{64}$	1.93	19x7 / #27
2/0	259	.0227	.477	115	$\frac{5}{64}$	1.93	19x7 / #27
3/0	259	.0255	.536	130	$\frac{5}{64}$	2.07	19x7 / #26
3/0	427	.0198	.535	130	$\frac{5}{64}$	2.07	19x7 / #26
4/0	259	.0286	.601	150	$\frac{5}{64}$	2.26	19x7 / #25
4/0	427	.0222	.600	150	$\frac{5}{64}$	2.26	19x7 / #25

\*Trade-mark.



## General Cable \*Super Service S High-voltage Cable

SUPER SERVICE S high-voltage portable power cables are designed for a wide variety of purposes. In general their use covers both transmission of power from the supply to the portable equipment and distribution of that power to the electrical machines or control devices which are installed in or on the equipment.

The principal use of SUPER SERVICE S portable power cables is to convey energy for electrically operated shovels, dredges, cranes, etc., where arduous service and safety must combine for uninterrupted production and long cable life.

Further use of SUPER SERVICE S high-voltage cables of this type is found wherever both high voltage and portability are required, such as in construction work and for temporary or emergency power transfer in central stations and substations during equipment repairs and alterations. SUPER SERVICE S cables are available for operating voltages up to and including 15,000 volts, in single and multi-conductor form, and in a wide range of conductor sizes.

When unusual service conditions are encountered it is highly desirable that all requirements be known before attempting to select the proper type of SUPER SERVICE S cable to use. General Cable engineers are prepared to submit recommendations and to furnish full information on modifications.

There are three general types of SUPER SERVICE S high-voltage cables. These are:

TYPE W, without ground wires.

TYPE G, with ground wires.

TYPE SH (shielded) with or without ground wires.

### Type W—(Without Ground Wires)

This cable is not recommended for service exceeding 2500 volts, although it can be furnished for higher voltages. Even at 2500 volts, special precautions should be used in the handling of the cable to minimize hazard of shock to workmen.

Has heavy walls of insulation and jacket.

### Type G—(With Ground Wires)

The same construction as Type W except that it has a flexible ground wire in each filler space. While cables operating above 2500 volts should preferably be shielded, the ground wires in Type G cables in effect provide some shielding and afford a certain degree of protection to operators when the wires are grounded at both ends of the cable length. In some instances Type G cables have proved satisfactory at 4500 volts. The ground wires are normally of tinned copper strands covered with a cushioning cotton braid. If desired, ground wires composed of tinned steel strands can be supplied in place of copper.

### Type SH—(Shielded—With or Without Ground Wires)

Similar to Types W and G, as previously described, except for the addition of shielding braids, and are recommended for all operating voltages above 2500 volts. These cables are classified in four groups as follows:

Type	Ground Wires	Shielding
SH-A	Without	On Each Conductor
SH-B	Without	Over Cabled Conductors
SH-C	With	Over Cabled Conductors
SH-D	With	On Each Conductor

Shielding braids over the assembled conductors confine the voltage stress within the core of the cable. When applied over the separate conductors, shielding confines the stress to the individual conductor insulations, eliminating corona and the attendant formation of ozone which is deleterious to synthetic rubber or rubber. Shielding braids, properly grounded, afford protection to the cable and to the operator.

The preferred shield consists of a combination copper-cotton braid with the tinned copper wires running in a direction opposite to the lay of the cable, and the cotton threads running in the same direction as the lay of the cable. An all-copper shielding braid can be furnished if desired but the combination shield has been found to give better service in cables subjected to repeated flexing.

It is considered good practice to employ ground wires in all shielded high-voltage portable cables. These ground wires are normally uninsulated to permit electrical contact with the shielding braids.

Where maximum safety is desired, Type SH-D cable with grounding conductors are recommended for circuit voltages over 2000.

\*Trade-mark.

## General Cable \*Super Service S High-voltage Cable

Type G—2001-3000 Volts—With Ground Wires

Type W—2001-300 Volts—Without Ground Wires



### 3-Conductor

Size A.W.G.	CONDUCTORS		Diam. In.	Diam. In.	Current Carrying Capacity Amperes	Insulation Thick- ness Inches	Overall Diameter Inches	Ground Wire Construction
	No.	Wire						
8	49	.0184	.166	35	$\frac{7}{64}$	1.21	7x7/#31	
6	49	.0231	.208	50	$\frac{8}{64}$	1.37	7x7/#29	
6	133	.0140	.210	50	$\frac{8}{64}$	1.39	7x7/#29	
4	49	.0292	.263	65	$\frac{8}{64}$	1.51	19x7/#31	
4	133	.0177	.266	65	$\frac{8}{64}$	1.54	19x7/#31	
3	49	.0328	.295	75	$\frac{8}{64}$	1.58	19x7/#30	
3	133	.0199	.299	75	$\frac{8}{64}$	1.61	19x7/#30	
2	133	.0223	.335	90	$\frac{8}{64}$	1.72	19x7/#29	
2	259	.0160	.336	90	$\frac{8}{64}$	1.71	19x7/#29	
1	133	.0251	.377	100	$\frac{8}{64}$	1.81	19x7/#28	
1	259	.0180	.378	100	$\frac{8}{64}$	1.80	19x7/#28	
1/0	133	.0282	.423	120	$\frac{8}{64}$	1.91	19x7/#27	
1/0	259	.0202	.424	120	$\frac{8}{64}$	1.90	19x7/#27	
2/0	133	.0316	.474	135	$\frac{8}{64}$	2.05	19x7/#26	
2/0	259	.0227	.477	135	$\frac{8}{64}$	2.04	19x7/#26	
3/0	259	.0255	.536	155	$\frac{8}{64}$	2.17	19x7/#25	
3/0	427	.0198	.535	155	$\frac{8}{64}$	2.18	19x7/#25	
4/0	259	.0286	.601	180	$\frac{8}{64}$	2.34	19x7/#24	
4/0	427	.0222	.600	180	$\frac{8}{64}$	2.37	19x7/#24	

### 4-Conductor

8	49	.0184	.166	30	7/8	1.31	7x7/#32
6	49	.0231	.208	40	8/8	1.52	7x7/#30
6	133	.0140	.210	40	8/8	1.55	7x7/#30
4	49	.0292	.263	55	8/8	1.65	7x7/#28
4	133	.0177	.266	55	8/8	1.68	7x7/#28
3	49	.0328	.295	65	8/8	1.76	19x7/#31
3	133	.0199	.299	65	8/8	1.79	19x7/#31
2	133	.0223	.335	75	8/8	1.88	19x7/#30
2	259	.0160	.336	75	8/8	1.87	19x7/#30
1	133	.0251	.377	85	8/8	2.01	19x7/#29
1	259	.0180	.378	85	8/8	2.00	19x7/#29
1/0	133	.0282	.423	100	8/8	2.12	19x7/#28
1/0	259	.0202	.424	100	8/8	2.11	19x7/#28
2/0	133	.0316	.474	115	8/8	2.28	19x7/#27
2/0	259	.0227	.477	115	8/8	2.27	19x7/#27
3/0	259	.0255	.536	130	8/8	2.41	19x7/#26
3/0	427	.0198	.535	130	8/8	2.44	19x7/#26
4/0	259	.0286	.601	150	8/8	2.60	19x7/#25
4/0	427	.0222	.600	150	8/8	2.63	19x7/#25

### 3-Conductor Type G—3001-4000V.—With Ground Wires

### 3-Conductor Type G—4001-5000V.—With Ground Wires

CONDUCTORS				Current Carrying Capacity Amperes	3001-4000 VOLTS		4001-5000 VOLTS		Ground Wire Construction
Size A.W.G.	No.	WIRE Diam. In.	Diam. In.		Insul- ation Thick. In.	Over- all Diam. In.	Insula- tion Thick. In.	Over- all Diam. In.	
6	49	.0231	.208	50	$\frac{9}{64}$	1.46	$\frac{10}{64}$	1.53	7x7/#29
6	133	.0140	.210	50	$\frac{9}{64}$	1.48	$\frac{10}{64}$	1.55	7x7/#29
4	49	.0292	.263	65	$\frac{9}{64}$	1.58	$\frac{10}{64}$	1.65	19x7/#31
4	133	.0177	.266	65	$\frac{9}{64}$	1.59	$\frac{10}{64}$	1.67	19x7/#31
3	49	.0328	.295	75	$\frac{9}{64}$	1.68	$\frac{10}{64}$	1.75	19x7/#30
3	133	.0199	.299	75	$\frac{9}{64}$	1.71	$\frac{10}{64}$	1.78	19x7/#30
2	133	.0223	.335	90	$\frac{9}{64}$	1.79	$\frac{10}{64}$	1.86	19x7/#29
2	259	.0160	.336	90	$\frac{9}{64}$	1.77	$\frac{10}{64}$	1.85	19x7/#29
1	133	.0251	.377	100	$\frac{9}{64}$	1.87	$\frac{10}{64}$	1.97	19x7/#28
1	259	.0180	.378	100	$\frac{9}{64}$	1.87	$\frac{10}{64}$	1.97	19x7/#28
1/0	133	.0282	.423	120	$\frac{9}{64}$	2.01	$\frac{10}{64}$	2.08	19x7/#27
1/0	259	.0202	.424	120	$\frac{9}{64}$	2.00	$\frac{10}{64}$	2.07	19x7/#27
2/0	133	.0316	.474	135	$\frac{9}{64}$	2.12	$\frac{10}{64}$	2.19	19x7/#26
2/0	259	.0227	.477	135	$\frac{9}{64}$	2.11	$\frac{10}{64}$	2.18	19x7/#26
3/0	259	.0255	.536	155	$\frac{9}{64}$	2.27	$\frac{10}{64}$	2.34	19x7/#25
3/0	427	.0198	.535	155	$\frac{9}{64}$	2.29	$\frac{10}{64}$	2.36	19x7/#25
4/0	259	.0286	.601	180	$\frac{9}{64}$	2.41	$\frac{10}{64}$	2.48	19x7/#24
4/0	427	.0222	.600	180	$\frac{9}{64}$	2.43	$\frac{10}{64}$	2.50	19x7/#24

\*Trade-mark.



## General Cable \*Super Service S High-Voltage Cable

## 3-Conductor

Types SH-B and SH-C—Shielded Over Assembled Conductors

Types SH-A and SH-D—Shielded Over Individual Conductors



Size A.W.G. No.	CONDUCTORS		Current Carrying Capacity Amperes	Insu- lation Thick. In.	2001-3000 VOLTS		Ground Wire Construc- tion
	Diam. In.	Diam. In.			Insu- lation Thick. In.	Over- all Diam. In.	
8	49	.0184	.166	35	8/64	1.39	6x 7/#30
6	49	.0231	.208	50	9/64	1.57	6x11/#30
6	133	.0140	.210	50	9/64	1.59	6x11/#30
4	49	.0292	.263	65	9/64	1.72	6x17/#30
4	133	.0177	.266	65	9/64	1.74	6x17/#30
3	49	.0328	.295	75	9/64	1.80	6x21/#30
3	133	.0199	.299	75	9/64	1.82	6x21/#30
2	133	.0223	.335	90	9/64	1.89	6x27/#30
2	259	.0160	.336	90	9/64	1.88	6x27/#30
1	133	.0251	.377	100	9/64	2.01	6x33/#30
1	259	.0180	.378	100	9/64	2.01	6x33/#30
1/0	133	.0282	.423	120	9/64	2.11	6x33/#29
1/0	259	.0202	.424	120	9/64	2.10	6x33/#29
2/0	133	.0316	.474	135	9/64	2.23	6x36/#28
2/0	259	.0227	.477	135	9/64	2.22	6x36/#28
3/0	259	.0255	.536	155	9/64	2.37	6x36/#27
3/0	427	.0198	.535	155	9/64	2.40	6x36/#27
4/0	259	.0286	.601	180	9/64	2.55	6x36/#26
4/0	427	.0222	.600	180	9/64	2.57	6x36/#26

Size A.W.G. No.	CONDUCTORS		Current Carrying Capacity Amperes	Insu- lation Thick. In.	4001-5000 VOLTS		Ground Wire Construc- tion
	Diam. In.	Diam. In.			Insu- lation Thick. In.	Over- all Diam. In.	
6	49	.0231	.208	50	12/64	1.81	6x11/#30
6	133	.0140	.210	50	12/64	1.82	6x11/#30
4	49	.0292	.263	65	12/64	2.00	6x17/#30
4	133	.0177	.266	65	12/64	1.97	6x17/#30
3	49	.0328	.295	75	12/64	2.02	6x21/#30
3	133	.0199	.299	75	12/64	2.05	6x21/#30
2	133	.0223	.335	90	12/64	2.13	6x27/#30
2	259	.0160	.336	90	12/64	2.12	6x27/#30
1	133	.0251	.377	100	12/64	2.22	6x33/#30
1	259	.0180	.378	100	12/64	2.21	6x33/#30
1/0	133	.0282	.423	120	12/64	2.35	6x33/#29
1/0	259	.0202	.424	120	12/64	2.34	6x33/#29
2/0	133	.0316	.474	135	12/64	2.46	6x36/#28
2/0	259	.0227	.477	135	12/64	2.46	6x36/#28
3/0	259	.0255	.536	155	12/64	2.61	6x36/#27
3/0	427	.0198	.535	155	12/64	2.63	6x36/#27
4/0	259	.0286	.601	180	12/64	2.76	6x36/#26
4/0	427	.0222	.600	180	12/64	2.78	6x36/#26

Size A.W.G. No.	CONDUCTORS		Current Carrying Capacity Amperes	Insu- lation Thick. In.	6001-7000 VOLTS		Ground Wire Construc- tion
	Diam. In.	Diam. In.			Insu- lation Thick. In.	Over- all Diam. In.	
4	49	.0292	.263	65	15/64	2.15	6x17/#30
4	133	.0177	.266	65	15/64	2.17	6x17/#30
3	49	.0328	.295	75	15/64	2.25	6x21/#30
3	133	.0199	.299	75	15/64	2.28	6x21/#30
2	133	.0223	.335	90	15/64	2.36	6x27/#30
2	259	.0160	.336	90	15/64	2.35	6x27/#30
1	133	.0251	.377	100	15/64	2.45	6x33/#30
1	259	.0180	.378	100	15/64	2.44	6x33/#30
1/0	133	.0282	.423	120	15/64	2.58	6x33/#29
1/0	259	.0202	.424	120	15/64	2.57	6x33/#29
2/0	133	.0316	.474	135	15/64	2.69	6x36/#28
2/0	259	.0227	.477	135	15/64	2.68	6x36/#28
3/0	259	.0255	.536	155	15/64	2.84	6x36/#27
3/0	427	.0198	.535	155	15/64	2.86	6x36/#27
4/0	259	.0286	.601	180	15/64	2.98	6x36/#26
4/0	427	.0222	.600	180	15/64	3.01	6x36/#26

\*Trade-mark.

Four conductor type SH cables also supplied

## General Cable Wire Armored Cable

## 3-Conductor

For semi-portable use, such as power supply to dredges. Galvanized steel armor wire provides longitudinal strength, allowing long lengths to be pulled into position or moved about without imposing undue strain on conductors or insulation. Protection is also afforded against fouling by ship anchors, abrasion, and impact of heavy bodies.

Conductors are of lead-alloy coated, soft annealed copper, and are flexible stranded (A.S.T.M. Class C).

Insulation on conductors is either a synthetic-rubber or rubber compound enclosed in a compound filled and varnish cambric tapes. Compound filled tape is color coded for circuit identification. Insulated and taped conductors are cabled with a short lay with presaturated jute fillers, and bound together with a heavy compound filled tape. A bedding of presaturated jute yarn is next applied, over which the galvanized steel armor wires are served. Armor wires are applied tightly with a short lay to provide maximum flexibility in finished cable.

## Rated Voltage, 2001-3000 Phase to Phase

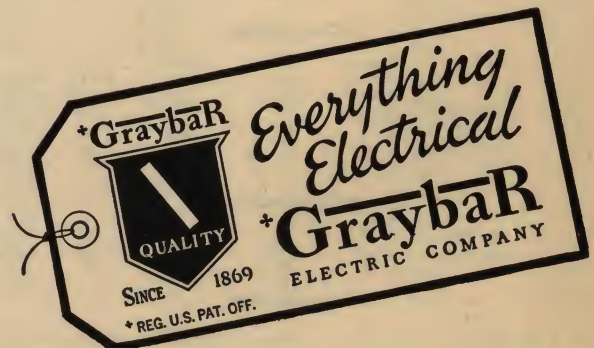
Size A.W.G.	CONDUCTORS		Size of Armor Wires B.W.G.	Over- all Diam. In.	Insu- lation Thick. In.
	No. of Strands	Diam. In.			
6	19	.186	12	1.79	10/64
4	19	.234	12	1.89	10/64
2	19	.296	12	2.03	10/64
1	37	.333	12	2.11	10/64
1/0	37	.374	10	2.25	10/64
2/0	37	.420	10	2.35	10/64
3/0	37	.471	10	2.46	10/64
4/0	37	.529	10	2.59	10/64
MCM					
250	61	.576	10	2.75	11/64
500	61	.815	8	2.36	11/64
1000	91	1.153	8	4.09	11/64

## Rated Voltage, 4001-5000 Phase to Phase

Size A.W.G.	CONDUCTORS		Size of Armor Wires B.W.G.	Over- all Diam. In.	Insu- lation Thick. In.
	No. of Strands	Diam. In.			
6	19	.186	12	1.92	12/64
4	19	.234	12	2.03	12/64
2	19	.296	10	2.21	12/64
1	37	.333	10	2.30	12/64
1/0	37	.374	10	2.39	12/64
2/0	37	.420	10	2.49	12/64
3/0	37	.471	10	2.60	12/64
4/0	37	.529	10	2.72	12/64
MCM					
250	61	.576	10	2.89	13/64
500	61	.815	8	3.50	13/64
1000	91	1.153	8	4.23	13/64

## Rated Voltage, 6001-7000 Phase to Phase

Size A.W.G.	CONDUCTORS		Size of Armor Wires B.W.G.	Over- all Diam. In.	Insu- lation Thick. In.
	No. of Strands	Diam. In.			
6	19	.186	10	2.24	16/64
4	19	.234	10	2.35	16/64
2	19	.296	10	2.48	16/64
1	37	.333	10	2.57	16/64
1/0	37	.374	10	2.66	16/64
2/0	37	.420	10	2.76	16/64
3/0	37	.471	10	2.87	16/64
4/0	37	.529	8	3.08	16/64
MCM					
250	61	.576	8	3.18	16/64
500	61	.815	8	3.70	16/64
1000	91	1.153	8	4.43	16/64





## Type S General Cable Cords

### 600 Volts

Approved by Underwriters' Laboratories, Inc.



Used as portable supply lines to small electric tools or machinery. Prescribed by the N.E.C. for use in damp places and where subject to extra hard usage.

Made of flexible or extra flexible stranded conductors of soft, annealed copper, fibrous separator, synthetic-rubber insulation (color coded), cabled with cushioning soft jute or cotton fillers, a fibrous separator and enclosed in a synthetic rubber jacket. Put up in 250-foot lengths.

### 2-Conductor

Size A.W.G.	Construction	Current Carrying Capacity Amperes	Insu- lation Thick. In.	Over- all Diam. In.	Wt. Lb. per 1000 Feet	Wt. Lb. per 250 Ft. Coil
18	16/#30	7	$\frac{3}{64}$	.390	80	20
16	26/#30	10	$\frac{3}{64}$	.405	90	23
14	41/#30	15	$\frac{3}{64}$	.530	155	39
12	65/#30	20	$\frac{3}{64}$	.600	190	48
10	105/#30	25	$\frac{3}{64}$	.640	240	60

### 3-Conductor

Size A.W.G.	Construction	Current Carrying Capacity Amperes	Insu- lation Thick. In.	Over- all Diam. In.	Wt. Lb. per 1000 Feet	Wt. Lb. per 250 Ft. Coil
18	16/#30	7	$\frac{3}{64}$	.405	90	23
16	26/#30	10	$\frac{3}{64}$	.430	110	28
14	41/#30	15	$\frac{3}{64}$	.560	185	47
12	65/#30	20	$\frac{3}{64}$	.635	225	56
10	105/#30	25	$\frac{3}{64}$	.690	300	75

### 4-Conductor

Size A.W.G.	Construction	Current Carrying Capacity Amperes	Insu- lation Thick. In.	Over- all Diam. In.	Wt. Lb. per 1000 Feet	Wt. Lb. per 250 Ft. Coil
18	16/#30	7	$\frac{3}{64}$	.435	105	27
16	26/#30	10	$\frac{3}{64}$	.485	140	35
14	41/#30	15	$\frac{3}{64}$	.605	220	55
12	65/#30	20	$\frac{3}{64}$	.665	280	70
10	105/#30	25	$\frac{3}{64}$	.745	370	93

For current carrying capacities—N.E.C. 1947—see index.

Color-coding of conductors, insulation colors: black and white; black, white and green; black, white, green and red; for 2, 3 or 4-conductor cords, respectively.

## Type SJ General Cable Cords

300 Volts

Approved by Underwriters' Laboratories, Inc.



Used with office, household, and similar appliances. Prescribed by the N.E.C. for use in damp places and where subject to hard usage.

Made of flexible or extra flexible stranded conductors of soft, annealed copper, fibrous separator, synthetic-rubber insulation (color coded), cabled with cushioning soft jute or cotton fillers, a fibrous separator and enclosed in a synthetic rubber jacket.

Put up in 250-foot lengths.

### 2-Conductor

Size A.W.G.	Construction	Current Carrying Capacity Amperes	Insu- lation Thick. In.	Over- all Diam. In.	Wt. Lb. per 1000 Feet	Wt. Lb. per 250 Ft. Coil
18	16/#30	7	$\frac{3}{64}$	.305	50	13
16	26/#30	10	$\frac{3}{64}$	.330	65	16

### 3-Conductor

Size A.W.G.	Construction	Current Carrying Capacity Amperes	Insu- lation Thick. In.	Over- all Diam. In.	Wt. Lb. per 1000 Feet	Wt. Lb. per 250 Ft. Coil
18	16/#30	7	$\frac{3}{64}$	.335	60	15
16	26/#30	10	$\frac{3}{64}$	.360	80	20

### 4-Conductor

Size A.W.G.	Construction	Current Carrying Capacity Amperes	Insu- lation Thick. In.	Over- all Diam. In.	Wt. Lb. per 1000 Feet	Wt. Lb. per 250 Ft. Coil
18	16/#30	7	$\frac{3}{64}$	.360	82	21
16	26/#30	10	$\frac{3}{64}$	.390	105	27

For Current Carrying Capacities, N.E.C. 1947 see index.

## General Cable Gencaseal\*



Gencaseal is an electrical insulation made from a synthetic thermoplastic material. The physical properties of Gencaseal are comparable to those of rubber compounds; dielectric strength is higher. Gencaseal is highly resistant to the deteriorating effects of heat, oxidation, sunlight, oil, acids and alkalis, water, and other chemical solutions; will not support combustion. Overall protection such as a tape, braid or lead sheath is not required.

Principal characteristics are:

1. Dielectric strength substantially above that of rubber compounds.

2. Resistance to oils and chemical solutions beyond comparison with rubber or most rubber-like insulations.

3. Ages more slowly than rubber because of its greater resistance to oxidation and light.

4. Flame-resistant to the extent that it will not support combustion even in open flame.

5. Tough, flexible, and durable; needs no protective coverings except where subjected to severe mechanical abuse.

6. Attractive finish; a clean, glossy, enamel-like appearance. Available in a number of bright, permanent colors.

7. Small diameter and reduced weight compared to other types of insulation which require protective coverings.

8. Strips easily from the conductor leaving the tin clean and bright.

Gencaseal insulated wire is recommended for station and industrial switchboard, meter and control wiring; for machine shop and printing press motor leads and control circuits; for distributing frame and other small wiring in the telephone plant; for appliance wiring or other small applications at 600 volts or less and where the operating temperature does not exceed 80°C.

The Underwriters' Laboratories have no fixed standards covering this type of wire for any particular application. However, their "Appliance Wiring Material" procedure provides for the listing and labeling of the wire after a sample appliance, motor or machine with suitable wiring as a component part has been submitted by the appliance maker to the Underwriters' Laboratories and approval given.

For low voltage wiring problems where severe conditions are encountered, Gencaseal may be the solution. However, it should be employed only on the recommendation of engineers who are familiar with its characteristics performance.

In solid, flexible, or extra flexible stranding. Sizes smaller than 14 A.W.G. rated at 300 volts. Insulation thickness is the same as the standard rubber wall for the size involved. Other sizes and wall thicknesses on request.

Standard colors: black, white, red, yellow, green, and blue. Unless otherwise specified, black will be supplied. Ridged insulation can be supplied for further identification where required.

All conductors soft tinned copper. Protective tapes or braids are not required.

Other strandings for flexible and extra flexible conductors can be supplied when quantity justifies.

Size A.W.G.	Strands	Wall Thick. In.	Approx. O.D. In.	Net Wt. Lb. per 1000 Feet	Size A.W.G.	Strands	Wall Thick. In.	Approx. O.D. In.	Net Wt. Lb. per 1000 Feet
†18	Solid	$\frac{3}{64}$	.102	9	12	Solid	$\frac{3}{64}$	.175	32
	7	$\frac{3}{64}$	.108	10		7	$\frac{3}{64}$	.186	33
	16	$\frac{3}{64}$	.110	10		19	$\frac{3}{64}$	.187	33
†16	Solid	$\frac{3}{64}$	.115	13		47	$\frac{3}{64}$	.198	34
	7	$\frac{3}{64}$	.120	14	10	Solid	$\frac{3}{64}$	.196	47
	19	$\frac{3}{64}$	.121	14		7	$\frac{3}{64}$	.210	50
	26	$\frac{3}{64}$	.122	15		19	$\frac{3}{64}$	.211	55
14	Solid	$\frac{3}{64}$	.158	23		49	$\frac{3}{64}$	.215	57
	7	$\frac{3}{64}$	.167	24	8	Solid	$\frac{3}{64}$	.255	76
	19	$\frac{3}{64}$	.168	25		7	$\frac{3}{64}$	.271	81
	41	$\frac{3}{64}$	.170	25		19	$\frac{3}{64}$	.272	85
					49	$\frac{3}{64}$	.286	87	

†For 300-volt service.

\*Trade-mark.



## General Cable Varnished Cambric Insulated Building Wire and Cable

Single Conductor—600 Volts



## Solid Conductors

Size A.W.G.	No. Strands	CONDUCTORS Diameter of Individual Strands Inches	Diameter Inches	Varnished Cambric Thickness Inches	Braided Cables			Taped and Braided		Lead Sheathed Cables		
					SINGLE BRAIDED	DOUBLE BRAIDED	WEIGHT POUNDS per 1000 Ft.	OVER- ALL DIAMETER INCHES	WEIGHT POUNDS per 1000 Ft.	OVER- ALL DIAMETER INCHES	WEIGHT POUNDS per 1000 Ft.	WEIGHT POUNDS per 1000 Ft.
14	..	.....	.06408	$\frac{3}{64}$	.188	.253	36	.....	.....	$\frac{3}{64}$	.252	179
12	..	.....	.08081	$\frac{3}{64}$	.235	.300	53	.....	.....	$\frac{3}{64}$	.269	209
10	..	.....	.1019	$\frac{3}{64}$	.256	.321	69	.....	.....	$\frac{3}{64}$	.290	230
8	..	.....	.1285	$\frac{3}{64}$	.282	.347	91	.....	.....	$\frac{3}{64}$	.316	269
6	..	.....	.1620	$\frac{3}{64}$	.352	.417	139	.....	.....	$\frac{3}{64}$	.381	358
Stranded Conductors												
6	7	.0612	.184	$\frac{4}{64}$	.373	.438	151	.....	.....	$\frac{3}{64}$	.405	377
4	7	.0772	.232	$\frac{4}{64}$	.422	.487	203	.....	.....	$\frac{3}{64}$	.453	468
2	7	.0974	.292	$\frac{4}{64}$	.482	.547	294	.....	.....	$\frac{3}{64}$	.515	720
1	19	.0664	.332	$\frac{5}{64}$	.553	.618	373	.....	.....	$\frac{3}{64}$	.613	876
1/0	19	.0745	.373	$\frac{5}{64}$	.594	.659	451	.....	.....	$\frac{3}{64}$	.654	973
2/0	19	.0837	.418	$\frac{5}{64}$	.640	.705	548	.....	.....	$\frac{3}{64}$	.700	1,116
3/0	19	.0940	.470	$\frac{5}{64}$	.691	.756	661	.....	.....	$\frac{3}{64}$	.751	1,290
4/0	19	.1055	.528	$\frac{5}{64}$	.749	.814	810	.....	.....	$\frac{3}{64}$	.809	1,690
MCM												
250	37	.0822	.575	$\frac{6}{64}$	.828	.913	966	.....	.....	$\frac{5}{64}$	.919	1,926
300	37	.0900	.630	$\frac{6}{64}$	.903	.988	1153	.....	.....	$\frac{5}{64}$	.974	2,170
350	37	.0973	.681	$\frac{6}{64}$	.955	1.040	1327	.....	.....	$\frac{5}{64}$	1.026	2,386
400	37	.1040	.728	$\frac{6}{64}$	1.001	1.086	1490	.....	.....	$\frac{5}{64}$	1.072	2,609
450	37	.1103	.772	$\frac{6}{64}$	1.050	1.135	1672	.....	.....	$\frac{5}{64}$	1.121	2,825
500	37	.1162	.814	$\frac{6}{64}$	.....	1.172	1866	1.117	1776	$\frac{5}{64}$	1.158	3,040
550	61	.0950	.855	$\frac{7}{64}$	.....	1.213	2023	1.158	1930	$\frac{6}{64}$	1.261	3,548
600	61	.0992	.893	$\frac{7}{64}$	.....	1.282	2238	1.227	2140	$\frac{6}{64}$	1.300	3,850
700	61	.1071	.964	$\frac{7}{64}$	.....	1.366	2591	1.311	2486	$\frac{6}{64}$	1.384	4,298
750	61	.1109	.998	$\frac{7}{64}$	.....	1.388	2762	1.333	2655	$\frac{6}{64}$	1.406	4,400
1000	61	.1280	1.152	$\frac{7}{64}$	.....	1.541	3577	1.486	3458	$\frac{6}{64}$	1.559	5,518
1500	91	.1284	1.412	$\frac{8}{64}$	.....	1.861	5310	1.806	5165	$\frac{7}{64}$	1.894	8,101
1750	127	.1174	1.526	$\frac{8}{64}$	.....	1.973	6107	1.918	5954	$\frac{7}{64}$	2.006	9,076
2000	127	.1255	1.631	$\frac{8}{64}$	.....	2.067	6975	2.012	6814	$\frac{7}{64}$	2.100	10,091

## 3-Conductor—600 Volts

Size A.W.G.	No. Strands	CONDUCTORS Diameter of Individual Strands Inches	Diameter Inches	Varnished Cambric Thickness Inches	Taped and Braided Cables		Lead Sheathed Cables		
					OVER- ALL DIAMETER INCHES	WEIGHT POUNDS per 1000 Ft.	SHEATH THICKNESS INCHES	OVER- ALL DIAMETER INCHES	WEIGHT POUNDS per 1000 Ft.
14	..	.....	.06408	$\frac{3}{64}$	.420	103	$\frac{3}{64}$	.449	390
12	..	.....	.08081	$\frac{3}{64}$	.456	131	$\frac{3}{64}$	.485	445
10	..	.....	.1019	$\frac{3}{64}$	.501	187	$\frac{3}{64}$	.562	663
8	..	.....	.1285	$\frac{3}{64}$	.557	257	$\frac{3}{64}$	.618	788
6	..	.....	.1620	$\frac{3}{64}$	.697	395	$\frac{3}{64}$	.757	1,066
Stranded Conductors									
6	7	.0612	.184	$\frac{4}{64}$	.742	412	$\frac{3}{64}$	.803	1,128
4	7	.0772	.232	$\frac{4}{64}$	.848	598	$\frac{5}{64}$	.939	1,641
2	7	.0974	.292	$\frac{4}{64}$	.997	899	$\frac{5}{64}$	1.068	2,076
1	19	.0664	.332	$\frac{5}{64}$	1.164	1,172	$\frac{6}{64}$	1.252	2,825
1/0	19	.0745	.373	$\frac{5}{64}$	1.252	1,441	$\frac{6}{64}$	1.340	3,202
2/0	19	.0837	.418	$\frac{5}{64}$	1.351	1,756	$\frac{6}{64}$	1.439	3,661
3/0	19	.0940	.470	$\frac{5}{64}$	1.461	2,146	$\frac{6}{64}$	1.549	4,204
4/0	19	.1055	.528	$\frac{5}{64}$	1.586	2,630	$\frac{6}{64}$	1.674	4,868
MCM									
250	37	.0822	.575	$\frac{6}{64}$	1.755	3,149	$\frac{7}{64}$	1.873	6,087
300	37	.0900	.630	$\frac{6}{64}$	1.874	3,708	$\frac{7}{64}$	1.992	6,847
350	37	.0973	.681	$\frac{6}{64}$	1.986	4,258	$\frac{7}{64}$	2.104	7,584
400	37	.1040	.728	$\frac{6}{64}$	2.084	4,796	$\frac{7}{64}$	2.202	8,289
450	37	.1103	.772	$\frac{6}{64}$	2.205	5,356	$\frac{8}{64}$	2.340	9,566
500	37	.1162	.814	$\frac{6}{64}$	2.284	5,916	$\frac{8}{64}$	2.419	10,292
550	61	.0950	.855	$\frac{7}{64}$	2.436	6,617	$\frac{8}{64}$	2.571	11,260
600	61	.0992	.893	$\frac{7}{64}$	2.517	7,169	$\frac{8}{64}$	2.652	11,979
700	61	.1071	.964	$\frac{7}{64}$	2.698	8,289	$\frac{8}{64}$	2.833	13,444
750	61	.1109	.998	$\frac{7}{64}$	2.745	8,817	$\frac{8}{64}$	2.880	14,061
1000	61	.1280	1.152	$\frac{8}{64}$	3.074	11,478	$\frac{8}{64}$	3.209	17,349

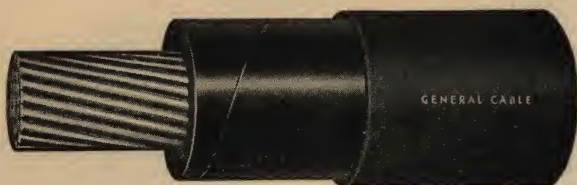
\*Belt dimensions:  $\frac{3}{64}$ -inch on individual conductors;  $\frac{2}{64}$ -inch overall belt.

Dimensions and weights are approximate and subject to normal manufacturing tolerances.

For allowable current carrying capacities, see N.E.C., Var-Cam Type V index.



## General Cable Varnished Cambric Insulated Power Cable

Rated Voltage, 2001-3000 Phase to Phase  
(Grounded or Ungrounded)

## Single Conductor

Size A.W.G.	No. Strands	CONDUCTORS SOLID OR CONCENTRIC STRANDED		Overall Diam. In.	Wt. Lb. per 1000 Ft.	Lead Sheath Thickness In.	Overall Diam. In.	Wt. Lb. per 1000 Ft.
		Individual Strands In.	Varnished Cambric Thick- ness In.					
10	(Solid)	.....	$\frac{5}{64}$	.355	78	$\frac{3}{64}$	.384	322
8	(Solid)	.....	$\frac{5}{64}$	.381	101	$\frac{3}{64}$	.410	362
6	(Solid)	.....	$\frac{5}{64}$	.415	140	$\frac{3}{64}$	.444	422
6	7	.0612	$\frac{5}{64}$	.436	151	$\frac{3}{64}$	.468	450
4	7	.0772	$\frac{5}{64}$	.485	205	$\frac{3}{64}$	.515	602
2	7	.0974	$\frac{5}{64}$	.545	296	$\frac{3}{64}$	.609	814
1	19	.0664	$\frac{5}{64}$	.585	354	$\frac{3}{64}$	.646	926
1/0	19	.0745	$\frac{5}{64}$	.626	432	$\frac{3}{64}$	.687	1029
2/0	19	.0837	$\frac{5}{64}$	.672	528	$\frac{3}{64}$	.733	1168
3/0	19	.0940	$\frac{5}{64}$	.723	635	$\frac{3}{64}$	.784	1338
4/0	19	.1055	$\frac{5}{64}$	.781	781	$\frac{5}{64}$	.872	1750
MCM								
250	37	.0822	$\frac{7}{64}$	.858	942	$\frac{5}{64}$	.950	1987
500	37	.1162	$\frac{7}{64}$	*1.147	*1803	$\frac{5}{64}$	1.190	3247
750	61	.1109	$\frac{7}{64}$	*1.333	*2655	$\frac{5}{64}$	1.406	4400
1000	61	.1280	$\frac{7}{64}$	*1.486	*3458	$\frac{5}{64}$	1.559	5518
1500	91	.1284	$\frac{8}{64}$	*1.806	*5165	$\frac{7}{64}$	1.894	8101
2000	127	.1255	$\frac{8}{64}$	*2.012	*6814	$\frac{7}{64}$	2.100	10091

Rated Voltage, 4001-5000 Phase to Phase  
(Grounded or Ungrounded)

## Single Conductor

Size A.W.G.	No. of Strands	CONDUCTORS SOLID OR CONCENTRIC STRANDED		Overall Diam. In.	Wt. Lb. per 1000 Feet	Lead Sheath Thick. In.	Overall Diam. In.	Wt. Lb. per 1000 Feet
		Individual Strands In.	Varnished Cambric Thick. In.					
8	(Solid)	.....	$\frac{5}{64}$	.474	136	$\frac{3}{64}$	.503	456
6	(Solid)	.....	$\frac{5}{64}$	.508	175	$\frac{3}{64}$	.568	660
6	(7)	.....	$\frac{5}{64}$	.530	191	$\frac{3}{64}$	.592	696
4	(7)	.....	$\frac{5}{64}$	.579	253	$\frac{3}{64}$	.640	803
2	(7)	.....	$\frac{5}{64}$	.639	336	$\frac{3}{64}$	.702	951
1	(19)	.....	$\frac{5}{64}$	.679	398	$\frac{3}{64}$	.738	1054
1/0	(19)	.....	$\frac{5}{64}$	.720	483	$\frac{3}{64}$	.779	1238
2/0	(19)	.....	$\frac{5}{64}$	.766	575	$\frac{3}{64}$	.857	1392
3/0	(19)	.....	$\frac{5}{64}$	.817	697	$\frac{3}{64}$	.908	1701
4/0	(19)	.....	$\frac{5}{64}$	.895	850	$\frac{5}{64}$	.966	1918
MCM								
250	(37)	.....	$\frac{10}{64}$	.972	1019	$\frac{5}{64}$	1.045	2170
500	(37)	.....	$\frac{10}{64}$	*1.241	*1904	$\frac{5}{64}$	1.315	3628
750	(61)	.....	$\frac{10}{64}$	*1.426	*2754	$\frac{5}{64}$	1.500	4742
1000	(61)	.....	$\frac{10}{64}$	*1.579	*3577	$\frac{5}{64}$	1.653	5770
1500	(91)	.....	$\frac{10}{64}$	*1.868	*5260	$\frac{7}{64}$	1.958	8300
2000	(127)	.....	$\frac{10}{64}$	*2.074	*6922	$\frac{7}{64}$	2.164	10310

Rated Voltage, 2001-3000 Phase to Phase (Grounded or Ungrounded)

## 2-Conductor

Size A.W.G.	Type	CONDUCTOR		Overall Diam. In.	Wt. Lb. per 1000 Ft.	Lead Sheath Thick- ness In.	Overall Diam. In.	Wt. Lb. per 1000 Ft.
		Con- ductor	Belt					
10	Solid	$\frac{5}{64}$	$\frac{3}{64}$	.644	215	$\frac{3}{64}$	.704	786
8	Solid	$\frac{5}{64}$	$\frac{3}{64}$	.696	275	$\frac{3}{64}$	.756	900
6	Solid	$\frac{5}{64}$	$\frac{3}{64}$	.764	373	$\frac{3}{64}$	.825	1054
6	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	.806	389	$\frac{3}{64}$	.897	1311
4	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	.924	565	$\frac{3}{64}$	.995	1585
2	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	1.044	822	$\frac{3}{64}$	1.115	1966
1	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.218	*1058	$\frac{3}{64}$	1.291	2645
1/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.300	*1262	$\frac{3}{64}$	1.373	2970
2/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.392	*1526	$\frac{3}{64}$	1.465	3369
3/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.494	*1849	$\frac{3}{64}$	1.567	3840
4/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.610	*2256	$\frac{3}{64}$	1.683	4413
MCM								
250	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.704	*2598	$\frac{7}{64}$	1.807	5311
500	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*2.197	*4852	$\frac{7}{64}$	2.332	8959
750	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*2.598	*7106	$\frac{8}{64}$	2.733	12058
1000	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*2.904	*9244	$\frac{8}{64}$	3.039	14860

## 3-Conductor

Size A.W.G.	Type	CONDUCTOR		Overall Diam. In.	Wt. Lb. per 1000 Ft.	Lead Sheath Thick- ness In.	Overall Diam. In.	Wt. Lb. per 1000 Ft.
		Con- ductor	Belt					
10	Solid	$\frac{5}{64}$	$\frac{3}{64}$	.644	215	$\frac{3}{64}$	.704	786
8	Solid	$\frac{5}{64}$	$\frac{3}{64}$	.696	275	$\frac{3}{64}$	.756	900
6	Solid	$\frac{5}{64}$	$\frac{3}{64}$	.764	373	$\frac{3}{64}$	.825	1054
6	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	.806	389	$\frac{3}{64}$	.897	1311
4	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	.924	565	$\frac{3}{64}$	.995	1585
2	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	1.044	822	$\frac{3}{64}$	1.115	1966
1	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.218	*1058	$\frac{3}{64}$	1.291	2645
1/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.300	*1262	$\frac{3}{64}$	1.373	2970
2/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.392	*1526	$\frac{3}{64}$	1.465	3369
3/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.494	*1849	$\frac{3}{64}$	1.567	3840
4/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.610	*2256	$\frac{3}{64}$	1.683	4413
MCM								
250	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.704	*2598	$\frac{7}{64}$	1.807	5311
500	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*2.197	*4852	$\frac{7}{64}$	2.332	8959
750	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*2.598	*7106	$\frac{8}{64}$	2.733	12058
1000	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*2.904	*9244	$\frac{8}{64}$	3.039	14860

Rated Voltage, 4001-5000 Phase to Phase (Grounded or Ungrounded)

Size A.W.G.	Type	CONDUCTOR		Overall Diam. In.	Wt. Lb. per 1000 Ft.	Lead Sheath Thick- ness In.	Overall Diam. In.	Wt. Lb. per 1000 Ft.
		Con- ductor	Belt					
8	Solid	$\frac{5}{64}$	$\frac{3}{64}$	.822	354	$\frac{5}{64}$	.913	1275
6	Solid	$\frac{5}{64}$	$\frac{3}{64}$	.910	460	$\frac{5}{64}$	.981	1452
6	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	.952	482	$\frac{5}{64}$	1.023	1530
4	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	1.050	661	$\frac{5}{64}$	1.121	1808
2	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.200	*937	$\frac{5}{64}$	1.273	2482
1	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.280	*1108	$\frac{5}{64}$	1.353	2778
1/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.362	*1318	$\frac{5}{64}$	1.435	3111
2/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.454	*1586	$\frac{5}{64}$	1.527	3506
3/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.556	*1914	$\frac{5}{64}$	1.629	3982
4/0	Stranded	$\frac{5}{64}$	$\frac{3}{64}$	*1.672	*2320	$\frac{7}{64}$	1.775	4964
MCM								
250	Stranded	$\frac{7}{64}$	$\frac{3}{64}$	*1.828	*2744	$\frac{7}{64}$	1.931	5655
500	Stranded	$\frac{7}{64}$	$\frac{3}{64}$	*2.321	*5024	$\frac{8}{64}$	2.456	9381
750	Stranded	$\frac{7}{64}$	$\frac{3}{64}$	*2.691	*7275	$\frac{8}{64}$	2.826	12397
1000	Stranded	$\frac{7}{64}$	$\frac{3}{64}$	*2.997	*9446	$\frac{8}{64}$	3.132	15220

\*Weights and diameters are for cables with tape and braid;  
other braided cables have single braid only.

Dimensions and weights are approximate and subject to  
normal manufacturing tolerances.

All conductors untinned, soft annealed copper (also sup-  
plied with tin or alternate lead alloy coated strands).

Construction data for cables of other sizes, types, and  
voltage ratings will be supplied on request.



## General Cable Bus Drop Cable



Designed for transmitting power in factories where a flexible and extensible connecting circuit is desired between an overhead open or enclosed fixed bus and the electrical motors running machinery such as lathes or punch presses. Where equipment is likely to be shifted from one position to a nearby location on the floor, this method of installation is particularly advantageous.

Stranded conductors for flexibility. Gencaseal or Underwriters' Type R insulation. Conductors color-coded for easy identification. Uninsulated conductor for grounding frame of machine. Impervious Gencaseal sheath or a tough heavy loom-woven covering with flame and moisture-resisting finish overall for mechanical protection.

### Types of Bus Drop Cable

**Type TG** has three Gencaseal insulated conductors and one uninsulated conductor of the same size used to ground the frame of the machine. The popular sizes range from 14 to 1/0 A.W.G. and are stranded in accordance with A.S.T.M. B-8 for Class B stranding. The insulated conductors meet the requirements of Underwriters' Laboratories Standard for Type T wire and are color-coded black, white and red unless otherwise specified. The three insulated conductors are cabled with the uninsulated grounding conductor. Fillers are used to round out and make a firm core and the assembled conductors are enclosed in a tape and an impervious Gencaseal sheath.

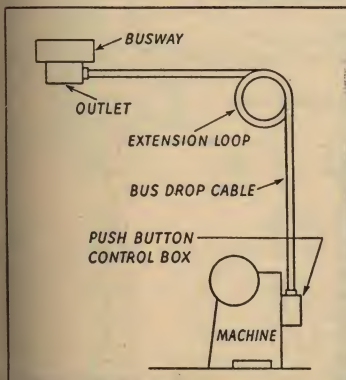
**Type TM** is identical to Type TG as far as individual conductors are concerned but the overall covering, in place of the Gencaseal sheath, is a heavy cotton loom covering having a flame and moisture-resisting finish.

**Type RM** is furnished with rubber or synthetic rubber insulated conductors in accordance with Underwriters' Standard for Type R wire. The individual conductors are covered with color-coded Guardian braids and the assembled conductors with the grounding conductor are enclosed in a heavy cotton loom covering having a flame and moisture-resisting finish.

**Table of Diameters and Weights**  
For Circuits Not Exceeding 600 Volts

Size A.W.G.	No. of Strands	Types TG Type TM RM	INSULATION THICK- NESS, 64THS INCH			APPROX. O. D. INCHES			APPROX. NET WEIGHT POUNDS PER 1000'		
			Type TG	Type TM	Type RM	Type TG	Type TM	Type RM	Type TG	Type TM	Type RM
14	7	2	3	.40	.43	.57	109	120	180		
12	7	2	3	.45	.47	.61	149	159	232		
10	7	2	3	.51	.53	.67	214	226	310		
8	7	3	4	.66	.67	.80	353	351	446		
6	7	4	4	.81	.82	.96	556	549	635		
4	7	4	4	.94	.95	1.09	830	798	906		
2	7	4	4	1.11	1.16	1.26	1203	1190	1304		
1/0	19	5	5	1.38	1.40	1.52	1906	1844	2012		

### Installation



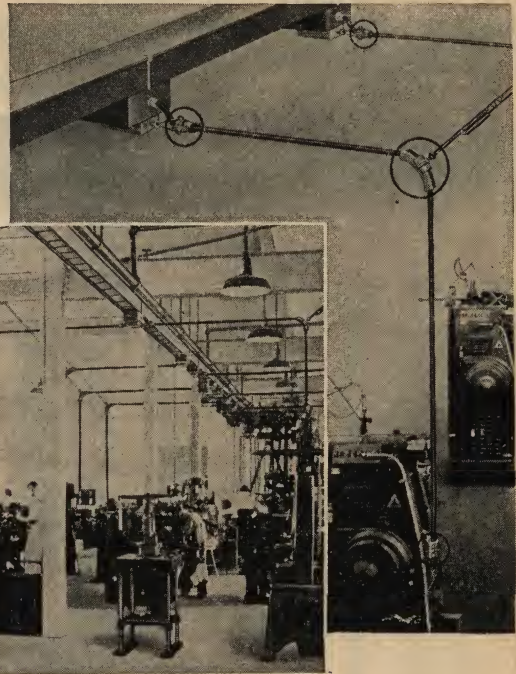
Bus drop cable is connected to the overhead bus at one end and usually to a push-button control box mounted on or near the motor or machine at the other end. A loop of several turns provides the desired reserve length for the circuit between the bus and control box. This loop makes it unnecessary to cut or splice the cable when the machine is moved and is ordinarily held

in place near the bus end of the circuit. The cable is connected to the overhead bus through standard fittings in an outlet box and may be suspended by a cable grip.

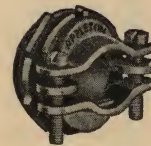
## Appleton Cable Clamps

Schedule CFS

For Exposed Industrial Wiring



Quarter-Bend  
Cable Clamp



Connector



Mooring  
Cable Clamp

Used in making branch feeder installations from the main distribution system without the use of rigid conduit (heavy-wall).

The flexibility of arrangement and mounting is especially desirable for mass machinery installations.

The quarter-bend cable clamp provides the proper bending radius without injury to the cable.

The mooring clamp is used to anchor cable at supply and output ends without due strain on cable line.

Made from unbreakable malleable iron.

Quarter-Bend Cable Clamp			Mooring Cable Clamp			For Cable Diam. Inches
No.	Wt. Lb. per 100		No.	Wt. Lb. per 100		
18890	166		18895	50		Up to 5/8
18891	183		18896	75		5/8 to 7/8
18892	250		18897	100		7/8 to 1
18893	275		18898	125		1 to 1 1/8

### Connectors for Clamps

No.	For Cable Diam. Inches	Fits K.O. Inches	Wt. Lb. per 100
15233	1/2 to 3/4	3/4	20
15234	3/4 to 1 1/8	1	24
15235	1 1/8 to 1 3/8	1 1/4	27



## USS Firefite Rubber-Insulated Braid-Covered Building Wire and Cable

600 Volts

N.E.C. Standard

### Single Conductor

Americore Type R—Code Grade  
Amerite Type RP—Performance Grade (30%)  
Amperox Type RH—Heat-Resistant Grade  
Amarine Type RW—Moisture-Resistant Grade



Size A.W.G. or CM.	No. Strands	Rub- ber Wall In.	Solid		Double Braid		Strd. Pkg.	
			Approx. O.D. In.	Wt. Lb. per 1000 Ft.	Approx. O.D. In.	Wt. Lb. per 1000 Ft.	No. Ft. on Coils	No. Ft. on Reels
14	Solid	$\frac{3}{64}$	.19	29	.22	33	500	....
12	Solid	$\frac{3}{64}$	.21	38	.24	43	500	....
10	Solid	$\frac{3}{64}$	.23	53	.26	58	500	....
8	Solid	$\frac{3}{64}$	.29	87	.32	94	500	....
6	Solid	$\frac{3}{64}$	...	...	.36	131	500	....
Stranded								
14	7	$\frac{3}{64}$	.20	30	.23	35	500	....
12	7	$\frac{3}{64}$	.22	41	.25	45	500	....
10	7	$\frac{3}{64}$	.25	56	.27	61	500	....
8	7	$\frac{3}{64}$	.31	93	.35	101	500	....
6	7	$\frac{3}{64}$	...	...	.39	139	500	....
4	7	$\frac{3}{64}$	...	...	.44	200	...	1000
3	7	$\frac{3}{64}$	...	...	.47	240	...	1000
2	7	$\frac{3}{64}$	...	...	.50	290	...	1000
1	19	$\frac{5}{64}$	...	...	.56	368	...	1000
1/0	19	$\frac{5}{64}$	...	...	.60	447	...	1000
2/0	19	$\frac{5}{64}$	...	...	.64	545	...	1000
3/0	19	$\frac{5}{64}$	...	...	.70	671	...	1000
4/0	19	$\frac{5}{64}$	...	...	.76	822	...	1000
250,000	37	$\frac{9}{64}$	...	...	.84	981	...	1000
300,000	37	$\frac{9}{64}$	...	...	.91	1158	...	1000
350,000	37	$\frac{9}{64}$	...	...	.96	1329	...	1000
400,000	37	$\frac{9}{64}$	...	...	1.01	1502	...	1000
450,000	37	$\frac{9}{64}$	...	...	1.05	1675	...	1000
500,000	37	$\frac{9}{64}$	...	...	1.09	1845	...	1000
600,000	61	$\frac{7}{64}$	...	...	1.20	2215	...	1000
700,000	61	$\frac{7}{64}$	...	...	1.28	2550	...	1000
750,000	61	$\frac{7}{64}$	...	...	1.31	2720	...	1000
800,000	61	$\frac{7}{64}$	...	...	1.34	2886	...	1000
900,000	61	$\frac{7}{64}$	...	...	1.40	3230	...	1000
1,000,000	61	$\frac{7}{64}$	...	...	1.46	3552	...	1000
1,250,000	91	$\frac{8}{64}$	...	...	1.65	4449	...	500
1,500,000	91	$\frac{8}{64}$	...	...	1.78	5279	...	500
1,750,000	91	$\frac{8}{64}$	...	...	1.90	6095	...	500
2,000,000	91	$\frac{8}{64}$	...	...	2.01	6910	...	500

### Twin Conductor

Americore Type RD—Code Grade  
Amerite Type RPD—Performance Grade (30%)  
Amperox Type RHD—Heat-Resistant Grade



Size A.W.G. Inches	Rubber Wall Inches	Solid		Stranded		Strd. Pkg.	
		Approx. O.D. In.	Wt. Lb. per 1000 Ft.	Approx. O.D. In.	Wt. Lb. per 1000 Ft.	No. Ft. on Coils	No. Ft. on Reels
14	$\frac{3}{64}$	.24x.42	68	.25x.44	71	500	....
12	$\frac{3}{64}$	.26x.46	87	.27x.49	93	500	....
10	$\frac{3}{64}$	.28x.51	118	.29x.54	124	500	....
8	$\frac{3}{64}$	.34x.63	191	.35x.66	202	...	1000
6	$\frac{3}{64}$	...	...	.40x.72	280	...	1000
4	$\frac{3}{64}$	...	...	.45x.82	398	...	1000
3	$\frac{3}{64}$	...	...	.48x.88	478	...	1000
2	$\frac{3}{64}$	...	...	.51x.95	580	...	1000
1	$\frac{5}{64}$	...	...	.58x1.08	740	...	1000

## Other American Steel & Wire Company Products

Firefite Thin-Wall Building Wire  
Types RPT, RHT, and SN Single Conductor  
Rubber-Insulated Lead-Sheathed Building Wire  
Type RL, RPL, and RHL Single Conductor  
Type ROL, RPOL, and RHOL Two Conductor  
Type RML, RPML, and RHML Three Conductor

Amerite Service Drop Cable  
Type SD Two and Three Conductor  
Type SO-F Two and Three Conductor

Amerite Service Entrance Cable  
Type SE Two and Three Conductor  
Type ASE Two and Three Conductor

Heavy Duty Braided Mining Cable

Steel Taped Parkway Cable  
Type RLJFJ

Non-Metallic Sheathed Parkway Cable  
Type RJ

Varnished Cambric Insulated Wire and Cable  
Reliance U.R.C. Type Weatherproof Wire and Cable  
Reliance Slow-Burning Wire and Cable

Amerfelt Weatherproof Wire

Magnet Wire

Bare Copper Wire

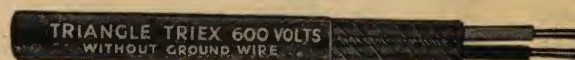
Amerclad Rubber-Sheathed Portable Cord and Cable

Amerbestos Asbestos-Insulated Wire and Cable

Asbestos-Insulated Rheostat and Switchboard Wire  
Stove Wire Control Cable  
Boiler-Room Wire Fixture Wire  
Apparatus Cable Heat-Resistant Cord

Complete Information Upon Request

## Triangle Triex Non-Metallic Sheathed Cable



Without Ground Wire



With Ground Wire

Designed for residence and small buildings.

Made of tinned copper conductors, solid or stranded, with 1946 Code Grade Insulation and fibrous covering.

Triex is also made with thermo-plastic insulated conductors over which is wound a multi-folded Kraft paper tape. The conductors are then laid together with jute fillers, enclosed in a folded paper wrap over which is applied an extra heavy cotton braid jacket, thoroughly impregnated in moisture-resisting and flame-retarding compounds, and is given a slick finish.

Available with or without ground wire.

Also available in rubber insulations to meet federal specification JC-106a.

Conforms to REA specifications.

Cable Size	Without Ground Wire		With Ground Wire		Approx. Feet per Coil
	Per 1000 Feet	Wt., Lb. per 1000 Feet	Per 1000 Feet	Wt., Lb. per 1000 Feet	
14	...	77	...	89	250
12	...	97	...	124	200
10	...	127	...	175	200
8	...	195	...	260	125
6	...	340	...	410	125
4	...	445	...	560	125
14	...	109	...	133	200
12	...	156	...	180	200
10	...	205	...	270	200
8	...	330	...	435	125
6	...	535	...	630	125
4	...	710	...	860	125



### National Canvas-Back Loom Wire Non-Metallic Sheathed Cable



#### With Type T Conductors

Without Ground Wire				With Ground Wire			
Size Cable	Per 1000 Feet	Approx. Feet per Coil	Approx. Wt., Lb. per 1000 Ft.	Size Cable	Per 1000 Feet	Approx. Feet per Coil	Approx. Wt., Lb. per 1000 Ft.
14/2	.....	250	*74	.....	.....	.....	.....
12/2	.....	250	*93	.....	.....	.....	.....

#### With Type R Conductors

14/2	\$48.80	250	85	14/2	\$53.80	250	89
12/2	76.00	250	102	12/2	82.30	250	112
10/2	105.60	200	145	10/2	115.40	200	165
8/2	191.00	125	240	8/2	201.20	125	260
6/2	271.60	125	320	6/2	301.40	125	362
4/2	400.80	125	488	4/2	439.60	125	560
14/3	93.00	200	120	14/3	99.60	200	130
12/3	121.80	200	148	12/3	129.20	200	158
10/3	146.20	200	245	10/3	155.00	200	265
8/3	233.00	125	265	8/3	247.60	125	300
6/3	346.20	125	512	7/3	362.20	125	566
4/3	569.40	125	712	4/3	604.00	125	796

### National Canvas-Back Loom Wire Fittings

#### No. 9000 Clips



For open wiring 14/2 and 12/2.

Packed 50 in a unit package, 500 in a standard package.

Weight per standard package, 8½ pounds.

No. 9000.....per 100 \$2.26

#### Straps



No. 9011



No. 9012

For concealed wiring.

Packed 50 in a unit package, 1000 in a standard package.

No. ....	9011	9012
Per 100.....	\$ .50	.50
For Size Wire.....	14/2, 12/2	14/3, 12/3
Weight per Standard Package, lb.	7	7¾



No. 9050-EZ



No. 708-N

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt., Lb. per 1000
9050-EZ	\$5.00	For 14/2, 12/2, 14/3 and 12/3 Wire.....	..	1000	87½
708-N	17.90	For 14/4, 14/3, 12/4, 12/3, 10/4, 10/3 and 8/2 Cable; Fits ¾-Inch K.O.....	25	50	*11
709-N	28.90	For 8/4, 8/3, 6/3, 6/2 and 4/2 Cable; Fits 1-In. K.O.....	10	20	*5

\*Per coil.

†Weight per 100.

### Triangle Double Bushed Armored Cable With Hot-Dip Galvanized Armor

Licenser

PATENTED U.S. PAT. NO. 1,940,225

Approved by Underwriters' Laboratories, Inc.



Conductors are individually insulated, twisted, provided with a fibrous covering impregnated with flame-retarding and moisture-resisting compound, and are enclosed in a continuous sheath of cross-inkled heavy, waterproofed Kraft paper of high dielectric strength.

#### Single Conductor

Size	Type	Feet per Coil	Approx. Outside Diameter Inches	Bushings to Bag per Coil	Approx. Wt. Lb. per 1000 Feet	Per Foot
14	Solid	250	.380	35	168	.....
12	Solid	250	.410	35	200	.....
10	Solid	250	.435	35	212	.....
8	Solid	250	.465	35	268	.....
6	Solid	250	.510	35	320	.....
10	Strand	250	.440	35	224	.....
8	Strand	250	.485	35	280	.....
6	Strand	250	.520	35	336	.....
4	Strand	250	.565	35	420	.....
2	Strand	250	.628	35	520	.....
1	Strand	100	.742	16	790	.....

#### Two-Conductor

14	Solid	250	.545	35	207	.....
14	Solid	100	.545	16	207	.....
14	Solid	50	.545	8	207	.....
14	Solid	25	.545	4	207	.....
14	Solid	15	.545	4	207	.....
12	Solid	250	.580	35	236	.....
12	Solid	100	.580	16	236	.....
12	Solid	50	.580	8	236	.....
12	Solid	25	.580	4	236	.....
12	Solid	15	.580	4	236	.....
10	Solid	250	.640	35	340	.....
8	Solid	150	.780	20	607	.....
8	Strand	150	.815	20	607	.....
6	Strand	100	.885	16	700	.....
4	Strand	100	.990	16	850	.....
2	Strand	100	1.220	16	1120	.....

#### Three-Conductor

14	Solid	250	.595	35	237	.....
14	Solid	100	.595	16	237	.....
14	Solid	50	.595	8	237	.....
14	Solid	25	.595	4	237	.....
14	Solid	25	.595	4	237	.....
12	Solid	250	.620	35	276	.....
10	Solid	250	.620	35	416	.....
8	Solid	150	.820	20	720	.....
8	Strand	150	.860	20	732	.....
6	Strand	100	.975	16	850	.....
4	Strand	100	1.045	16	1150	.....
2	Strand	100	1.260	16	1450	.....

#### Four-Conductor

14	Solid	250	.625	35	275	.....
12	Solid	250	.655	35	325	.....
10	Solid	150	.760	20	600	.....
8	Strand	100	.895	16	950	.....
6	Strand	100	1.015	16	1050	.....
4	Strand	100	1.070	16	1430	.....

### Triangle Bare Armored Ground Wire

Consists of a single solid, tinned uninsulated copper conductor covered with a flexible interlocking steel armor.

#### Single Conductor

Size	Type	Feet per Coil	Approx. Outside Diameter Inches	Approx. Wt. Lb. per 1000 Feet	Per Foot
8	Solid	250	.225	136	.....
6	Solid	250	.260	168	.....
4	Solid	250	.378	241	.....



## Triangle Lead Armored Cable



## Two-Conductor

Size	Per Foot	Type	Feet per Coil	Approx. Outside Diameter Inches	Approx. Wt., Lb. per 1000 Feet
14	....	Solid	150	.580	447
12	....	Solid	150	.625	480
10	....	Solid	100	.650	670
8	....	Strand	100	.840	1020
6	....	Strand	100	.910	1240

## Three-Conductor

Size	Per Foot	Type	Feet per Coil	Approx. Outside Diameter Inches	Approx. Wt., Lb. per 1000 Feet
14	....	Solid	150	.620	507
12	....	Solid	150	.655	746
10	....	Solid	100	.750	810
8	....	Strand	100	.935	1360
6	....	Strand	100	1.020	1480
4	....	Strand	100	1.150	2740

## Triangle Double Bushed Flat Armored Cable

## Hot-Dip Galvanized

Same as round type. Designed for extension wiring in existing buildings. May be laid in a channel cut in a plaster wall and replastered so as to be invisible. Also used in ship-building.

## Two-Conductor

Size	Per Foot	Type	Feet per Coil	Approx. Outside Diameter Inches	Bushings to Bag per Coil	Approx. Wt., Lb. per 1000 Feet
14	....	Solid	250	.625x.455	35	250
12	....	Solid	250	.640x.470	35	285
10	....	Solid	250	.685x.485	35	352

## Three-Conductor

Size	Per Foot	Type	Feet per Coil	Approx. Outside Diameter Inches	Bushings to Bag per Coil	Approx. Wt., Lb. per 1000 Feet
14	....	Solid	125	.755x.500	20	340
12	....	Solid	125	.850x.480	20	375

## National Ovalflex A.B.C. Flat Armored Bushed Cable



A safely bushed and insulated flat armored cable for underplaster installations and alterations. Its neat appearance recommends it for exposed surface wiring. Easy bending, edgewise or flatwise, makes it suitable for fitting snugly into corners and around machinery.

Anti-short dependable bushes cut end of steel armor, preventing damage to wires. Regularly made with solid conductors and N.E.C. insulation, but can be furnished with stranded conductors or special insulation.

Size B. & S. Gage.....	14/2	12/2	10/2	14/3	12/3
Per 1000 Feet.....	\$80.00	115.63	158.80	120.38	156.29
Feet per Coil.....	250	250	125	125	125
No. of Bushings to Bag per Std. Coil...	35	35	20	20	20
Wt. per 1000 Feet...lb.	272	296	345	344	376

## Ovalflex Fittings



No.	Description	Per 100
24CQ	<b>Extension Box Cover</b> for 4-In. Sq. Outlet Boxes; 3 $\frac{3}{8}$ -In. Diam. Plaster Ring; 3.4-In. Deep Overall, with 6 K.O.'s; Flat Closing Disc Fitting Flush with Rim; and two $\frac{3}{8}$ x $\frac{3}{32}$ -In. Flat Head Screws.....	\$35.00
26CQ	<b>Extension Box Cover</b> for 4-In. Octagon Outlet Box; 4-In. Diam. Plaster Ring; $\frac{3}{4}$ -In. Deep Overall with 6 K.O.'s; Flat Closing Disc Fitting Flush with Rim. For Connecting Ovalduct in Boxes Buried in Walls and Ceiling. With two $\frac{3}{8}$ x $\frac{3}{32}$ -In. Flat Head Screws.....	35.00
412	<b>Connector</b> for 14/2, 12/2, and 10/2 Ovalflex to Metal Molding Devices.....	23.04
413	<b>Connector</b> for 14/3 and 12/3 Ovalflex to Metal Molding Devices.....	27.60
2143	<b>Pitcher Lip Box Connector</b> for 14/3 Ovalflex or Ovalduct to Oval K.O.'s.....	6.30
2150	<b>Adapter Bushing</b> for Use with Connectors Nos. 2179 and 2181 in $\frac{1}{2}$ -In. Conduit K.O.'s.....	1.16
2154	<b>Set Screw Connector</b> for 14/2, 12/2, and 10/2 Ovalflex to Boxes Equipped with Cable Clamps.....	11.52
2155	<b>90° Box Connector</b> with Removable Back; Takes 14/2 and 12/2 Ovalflex into $\frac{1}{2}$ -In. Conduit K.O.'s.....	24.00
2156	<b>90° Box Connector</b> will Take 14/3, 10/3, and 10/2 Ovalflex or Ovalduct into Conduit or $\frac{1}{2}$ -In. K.O.'s.....	24.00
2157	<b>Special Folding Strap</b> for 14/2, 12/2, 10/2 Ovalflex; One Screw Type.....	.93
2159	<b>Wire Toggle Fastener</b> with Wire Loop for Use in Hollow Tile, Plaster Board, Wire Lath etc.; for Supporting Ovalflex.....	2.00
2160	<b>Strap Fastener</b> for 14/2 and 12/2 Ovalflex.....	.80
2161	<b>Strap Fastener</b> for 14/3 and 12/3 Ovalflex and Ovalduct.....	.80
2163EZ	<b>Connector</b> for 14/2 and 12/2 Ovalflex...	4.60
2176A	<b>Box Connector</b> for 14/2 and 12/2 Ovalflex into $\frac{1}{2}$ -In. Threaded Fittings or Boxes with $\frac{1}{2}$ -In. K.O.'s.....	11.52
2179	<b>Special Box Connector</b> for 14/2, 12/2, and 10/2 Ovalflex into Oval K.O.'s.....	6.72
2181	<b>Special Box Connector</b> 14/3 and 12/3 Ovalflex and Ovalduct.....	6.30
2180	<b>Box Connector</b> with $\frac{1}{2}$ -In. Bondnut; will Take 14/3 and 12/3 Ovalflex and Ovalduct into Conduit or $\frac{1}{2}$ -In. K.O.'s.....	16.00
2662	<b>Outlet Box</b> 4x $\frac{3}{4}$ -In. Outside; 6 Oval K.O.'s in Side; 5 $\frac{1}{2}$ -In. Conduit K.O.'s in Bottom.....	14.00
2663	<b>Extension or Plaster Ring</b> 4x34 In. Outside; 6 Oval K.O.'s in Side; Fits Nos. 2662 and 2665 or any 4-In. Round or Octagon Box..	\$15.00
2665	<b>Outlet Box</b> Same as No. 2662 with Addition of $\frac{3}{8}$ -In. Fixture Stud.....	19.20
2862	<b>Outlet Box</b> 3 $\frac{1}{4}$ x $\frac{3}{4}$ In. Outside; 4 Oval K.O.'s in Side; One $\frac{1}{2}$ -In. Conduit K.O. in Bottom.....	13.00
2865	<b>Outlet Box</b> Same as No. 2862 with addition of $\frac{3}{8}$ -In. Fixture Stud.....	18.20
4170S1	<b>Sectional Switch Box</b> 4x2x1 $\frac{1}{2}$ In. Deep; One Oval K.O. Each End; Two Oval K.O.'s One Side; One 1 $\frac{1}{2}$ -In. and 1 $\frac{3}{32}$ -In. K.O. on Opposite Side (Sherardized).....	30.60
4172S1	<b>Spacer</b> for No. 4170S1; Box Less Sides (Sherardized).....	27.00



## National A.B.C. Armored Bushed Cable



National A.B.C. Cable with Anti-Short bushing has a moisture-proofed wrapping of Kraft over conductors. Stripping conductors for terminals, Kraft unwinds quickly without use of sharp tools next to conductors, can be broken off by hand, and allows space inside steel for Anti-Short bushing.

## Type SE Triangle Service Entrance Cable

For use on circuits not exceeding 208 volts to ground. Recommended for use from the pole to building and down the side of the building, in places not subject to mechanical injury, without conduit.

## Type SE-ABN Armored Flat Type

Galvanized Steel  
Approved by Underwriters' Laboratories, Inc.



The flat steel tape gives an added protection, permits easy removal of outer jacket without nicking of concentrically wound conductor, and helps to prevent contact of bare neutral with outer coverings.

Construction detail: (1) Solid or stranded tinned copper conductors. (2) Triangle standard code grade and thickness of insulation. (3) Each conductor braided and weather-proofed—color coded. (4) Bare neutral, concentrically laid, consists of small tinned copper wires. (5) Galvanized flat steel armor wrapped around and over bare neutral. (6) Double wrap of rubber tape. (7) Substantial weatherproof and flameproof braid overall, having a grey paint finish; is clean and takes any color house paint.

Solid Wires					Stranded Wires				
Duplex Conductors					Duplex Conductors				
Size B.&S. Gage	Per 1000 Feet	Feet Bushings per Coil	No. of Bushings to Bag per Coil	Approx. Wt. Lb. per 1000 Feet	Size B.&S. Gage	Per 1000 Feet	Feet Bushings per Coil	No. of Bushings to Bag per Coil	Approx. Wt. Lb. per 1000 Feet
*14	\$57.10	250	35	240	8	\$180.20	150	20	607
*12	71.60	250	35	268	6	240.40	100	16	700
10	104.20	250	35	340	4	375.00	100	16	850
8	174.40	150	20	607	2	411.80	100	16	1120
Triplex Conductors					Triplex Conductors				
*14	\$72.40	250	35	296	8	\$241.60	150	20	732
12	92.80	250	35	348	6	299.60	100	16	850
10	131.20	250	35	416	4	297.40	100	16	1100
8	224.40	150	20	732	2	346.60	100	16	1450
Four Conductors					Four Conductors				
14	124.00	250	35	348	8	\$292.80	100	16	950
12	151.80	250	35	420	6	381.40	100	16	1050
10	191.80	150	20	600	4	556.60	100	16	1430
Single Conductors					Single Conductors				
14	\$51.00	250	35	168	10	\$83.00	250	35	214
12	71.20	250	35	200	8	91.20	250	35	280
10	77.60	250	35	210	6	116.00	250	35	320
8	74.40	250	35	268	4	197.80	250	35	420
6	97.60	250	35	320	2	230.80	250	35	530
					1	279.20	100	16	790

\*Can be furnished in coil lengths 100, 50, 25, and 15 feet.

## National Armored Leaded Cable

Solid Wires					Stranded Wires				
Duplex Conductors					Duplex Conductors				
Size B.&S. Gage	Per 1000 Feet	Feet Bushings per Coil	No. of Bushings to Bag per Coil	Approx. Wt. Lb. per 1000 Feet	Size B.&S. Gage	Per 1000 Feet	Feet Bushings per Coil	No. of Bushings to Bag per Coil	Approx. Wt. Lb. per 1000 Feet
14	\$110.00	150	..	407	8	\$267.20	100	..	1020
12	132.20	150	..	480	6	334.00	100	..	1240
10	165.40	100	..	670	..	..	..	..	..
Triplex Conductors					Triplex Conductors				
14	\$152.80	150	..	500	8	\$370.80	100	..	1360
12	187.20	150	..	746	6	463.00	100	..	1480
10	224.60	100	..	810	4	604.40	100	..	2200
Four Conductors					Four Conductors				
14	\$279.00	150	..	740	..	..	..	..	..

## National A.B.C. Armored Lampcord Plain

Twisted Conductors					Solid				
Size B.&S. Gage	Per 1000 Feet	Feet Bushings per Coil	No. of Bushings to Bag per Coil	Approx. Wt. Lb. per 1000 Feet	Size	Per 1000 Feet	Feet Bushings per Coil	Approx. Wt. Lb. per 1000 Feet	Approx. Weight per 1000 Ft., Lb.
18	\$69.40	250	16	200	8/1	\$119.76	250	136	
16	79.40	250	16	212	6/1	162.48	250	168	
14	103.80	250	16	272	4/1	230.88	250	241	

## National Bare Armored Ground Wire



## Anti-Short Bushings

No. Per Bag	A.B.C. Armored Cable	FOR USE WITH	A.B.C. Armored Leaded Cable	A.B.C. Armored Lampcord	No. Bags in Carton	No. to Bag
1	...	14/2,14/3,12/2	14/2,6/1	16/4,14/2	35	30
2	...	14/4,12/3,12/4	14/3,12/2,12/3	.....	35	30
	...	10/2,10/3,2/1	4/1,2,1,1/1			

## Type SE-UBN Unarmored Concentric Bare Neutral Type

Approved by Underwriters' Laboratories, Inc.



Consists of either one or two insulated inner conductors over which is laid a concentric bar conductor protected by heavy, moisture-proof coverings.

Construction detail: (1) Inner conductors No. 8 A.W.G. and larger to be stranded, smaller to be solid, tinned copper wire; (2) Insulated with standard N.E.C. grade and thickness of insulation; (3) Each conductor braided and weather-proofed and color coded in three conductor cables; (4) Outer conductor is formed of tinned copper wires, concentrically stranded around the inner conductor or conductors; (5) Overall are two heavy, rubberized tapes and a weatherproof cotton braid, having a grey paint finish.

Uninsulated					2-Conductor					3-Conductor				
Insulated Conductors	Neutral Concentric	Ap-prox. O.D. Inches	Std. Lgth. Ft.	Coil per 1000 Ft.	Approx. Wt., Lb. per 1000 Ft.	Per Foot	Approx. O.D. Inches	Std. Lgth. Ft.	Coil per 1000 Ft.	Approx. Wt., Lb. per 1000 Ft.	Per Foot	Approx. O.D. Inches	Std. Lgth. Ft.	Coil per 1000 Ft.
12	12	.36	250	142	...	...	.36x	.57	250	215	...	.36x	.61	250
10	*12	...	...	...	...	...	.38x	.61	250	260	...	.39x	.62	250
10	10	.39	250	177	...	...	.45x	.73	250	360	...	.46x	.74	250
8	*10	.45	250	222	...	...	.52x	.85	200	490	...	.53x	.87	150
8	8	.46	250	246	...	...	.58x	.96	150	660	...	.59x	.98	150
6	8	.52	250	305	...	...	.65x1	1.10	100	920	...	.68x1	1.12	100
6	6	.53	250	340	...	...								
4	6	.58	200	410	...	...								
4	4	.59	200	465	...	...								
2	4	.65	200	580	...	...								
2	2	.68	200	655	...	...								

\*Not approved for use under N.E.C.

†Where specified, a paper wrap under the concentric tinned copper wires will be furnished.



## Type SD-SDC Triangle Concentric Service Drop Cable

With Concentrically Wound Bare Neutral Wire

Approved by Underwriters' Laboratories, Inc.



For use on circuits not exceeding 208 volts to ground.

Recommended for use from the pole to the building and down the side of the building either on insulators or in rigid conduit. The cable must be in conduit at least 8 feet above the ground.

Also used as range feeder cable.

### Construction Detail

Two conductor: inner conductor insulated with N.E.C. grade compound and covered with single fibrous covering, outer conductor concentrically stranded thereafter, paper tape and weather-resisting and flame-resisting cotton braid overall.

Three conductor: two conductors insulated with N.E.C. grade compound and covered with single fibrous covering and laid parallel with the third conductor stranded concentrically thereafter, paper tape and weather-resisting and flame-resisting cotton braid overall.

Available in all-conductor-insulated-type.

Insulated Conductor Size	Uninsulated Neutral Conductor Size	2-Conductor				3-Conductor			
		Approx. O.D. Inches	Std. Coil Lgth. Ft.	Approx. Ship. Wt. per 1000 Ft. Lb.	Per Foot	Approx. O.D. Inches	Std. Coil Lgth. Ft.	Approx. Ship. Wt. per 1000 Ft. Lb.	Per Foot
12	12	.33	250	92	...	.33x	53	250	150
10	*12	...	...	...	...	.35x	57	250	183
10	10	.36	250	120	...	.36x	58	250	198
8	*10	.42	250	152	...	.42x	70	250	265
8	8	.43	250	170	...	.43x	71	250	285
6	8	.48	250	223	...	.48x	82	200	375
6	6	.50	250	255	...	.50x	83	150	415
4	6	.54	200	320	...	.54x	93	150	535
4	4	.56	200	370	...	.56x	94	150	590
2	4	.62	200	475	...	.62x1	.06	100	780
2	2	.64	200	550	...	.64x1	.09	100	885

\*Not approved for use under N.E.C.

Paper tape will be furnished under the concentric conductor, when specified, at no extra cost.

Rubberized cloth tape over the concentric conductor will be furnished, when specified, at extra cost.

## OTHER TRIANGLE PRODUCTS

Building Wires, Rubber Insulated,  
600 Volts, N.E.C.S.

1946 Code Type R, RH, RW, RL, and RHL

Therm-O-Plastic Insulated,  
600 Volts, N.E.C.S. Building Wire  
Type: (Triplastic) T and (Trioseal) TW

Varnished Cambric Insulated Cable, All Voltages  
Type: Braid Covered and Lead Covered

Rubber Insulated Parkway Cable, All Voltages  
Type RLJF and RLJ

Rubber Insulated Power Cable, All Voltages  
Type: Braid Covered and Lead Covered

## FURTHER INFORMATION ON REQUEST

## Crescent Impervex Trenchwire Underwriters' Laboratories Type USE Single Conductor—600 Volts



Designed for direct earth burial. A narrow trench is dug preferably two feet or more in depth and two or more Trenchwires laid together to form a cable.

Particularly suitable for underground services from power line to meter and/or service equipment; for connecting several buildings from the same service as on farms, estates and institutions; and for street, airport, and other outdoor lighting.

Consists of soft annealed tinned copper conductor, solid in sizes No. 12 to No. 8 A.W.G. and standard concentric stranded in larger sizes. The conductor is insulated for 600 volts with Impervex special moisture-resisting rubber compound and a tough Neoprene jacket is applied overall.

The Neoprene jacket is flameproof; acid, alkali, moisture and oil resisting, and practically unaffected by sunlight, air, and exposure to weather.

Insulation Thick. 64ths Inch	Jacket Thick. 64ths Inch	Overall Diam. In.	Maximum Allowable Current Amperes	*FACTOR SINGLE PHASE, A.C. 60 CY. PER SEC. LOAD POWER FACTOR		Weight Pounds per 1000 Feet
				80 Per Cent Lagging	100 Per Cent Lagging	
12	3	.275	20	318	260	55
10	3	.295	30	502	415	75
8	4	.355	45	792	667	105
6	4	.410	65	1203	1034	155
4	4	.490	85	1846	1637	230
2	4	.550	115	2781	2581	325
1	5	.655	130	3362	3255	425
1/0	5	.695	150	4058	4075	510
2/0	5	.740	175	4849	5066	615
3/0	5	.790	200	5780	6345	740
4/0	5	.850	230	5887	8000	900

Dimensions and weights listed above are approximate.

\*To determine the proper size to use multiply the one-way length of the circuit by the current in amperes and divide by the desired voltage drop. This gives a factor. Select the size with the next larger factor for the proper load power factor, but not exceeding the maximum allowable current.

For 3 phase A.C. circuits, multiply calculated factor by 0.87 and proceed as above.

## Crescent Motor Lead Wire Rubber Insulated—Single Braid—600 Volts



Consists of flexible, soft annealed copper conductor with a paper or cotton separator in sizes No. 18 to No. 10 A.W.G. and tinned copper conductor, without a separator, in larger sizes.

The conductor is insulated with Code Grade rubber compound and covered with a single cotton braid thoroughly saturated with a high melting point asphalt and finished with a moisture-resistant, flame-retarding compound.

Available with a lacquer finish also.

Size A.W.G.	No. of Wires	Insulation Thick. 64ths Inch	Overall Diam. In.	Stand-ard Lgth. Pkg. Ft.	Std. Pkg.	Standard Shipping Package	Std. Pkg. Weight Pounds
18	16	2	.150	1000	Spool	Ctn-2 Spools	30
16	26	2	.160	1000	Spool	Ctn-2 Spools	38
14	41	3	.220	500	Coil	Bdle-2 Coils	31
12	65	3	.245	500	Coil	Bdle-2 Coils	39
10	105	3	.270	500	Coil	Bdle-2 Coils	58
8	133	4	.330	500	Coil	Coil	45
6	133	4	.380	500	Coil	Coil	60
4	133	4	.440	500	Coil	Coil	90

\*Sizes No. 18 and No. 16 rated at 300 volts.

Dimensions and weights listed above are approximate.



### Crescent Flexible and Extra Flexible Wire

Rubber Insulated—Braided—600 Volts



Consists of flexible or extra flexible soft annealed tinned copper conductor insulated for 600 volts with Code Grade rubber compound (a higher grade can be furnished if required).

Over the insulation is applied a single or double braid.

Braids are thoroughly saturated with a high melting point asphalt and outer braids are finished with a moisture-resistant, flame-retarding compound.

#### Flexible

Size A.W.G.	No. of Wires	Insulation Thick. 64ths Inch	Type of Covering	Overall Diam. In.	Stand-ard Lgth. Pkg. Ft.	Stand-ard Pkg. Wt., Lb.	Std. Pkg. Ship. Wt., Lb.
14	19	3	Single Braid	.200	500	Coil	15
12	19	3	Single Braid	.225	500	Coil	19
10	19	3	Single Braid	.265	500	Coil	29
8	49	4	Single Braid	.335	500	Coil	45
14	19	3	Double Braid	.235	500	Coil	17
12	19	3	Double Braid	.260	500	Coil	22
10	19	3	Double Braid	.300	500	Coil	32
8	49	4	Double Braid	.370	500	Coil	50
6	49	4	Double Braid	.415	500	Coil	65
4	49	4	Double Braid	.475	500	Coil	95
2	49	4	Double Braid	.550	500	Coil	135
1	133	5	Double Braid	.615	1000	Reel	435
1/0	133	5	Double Braid	.660	1000	Reel	510
2/0	133	5	Double Braid	.710	1000	Reel	605
3/0	133	5	Double Braid	.770	1000	Reel	765
4/0	133	5	Double Braid	.835	1000	Reel	915

#### Extra Flexible

14	41	3	Single Braid	.215	500	Coil	15
12	65	3	Single Braid	.235	500	Coil	19
10	105	3	Single Braid	.265	500	Coil	29
8	133	4	Single Braid	.335	500	Coil	45
14	41	3	Double Braid	.250	500	Coil	17
12	65	3	Double Braid	.270	500	Coil	22
10	105	3	Double Braid	.300	500	Coil	32
8	133	4	Double Braid	.370	500	Coil	50
6	133	4	Double Braid	.420	500	Coil	65
4	133	4	Double Braid	.480	500	Coil	95
2	133	4	Double Braid	.555	500	Coil	135
1	259	5	Double Braid	.615	1000	Reel	435

Dimensions and weights listed above are approximate.

### Crescent Annunciator Wire

Single Conductor—Twisted Pair



Consists of solid, soft annealed bare copper conductor insulated with two wraps of cotton applied in reverse directions, saturated in paraffin, and polished.

Single conductor is furnished in assorted standard colors.

Twisted pair is made up of two different colored conductors for polarity identification.

Available with a black, weatherproof finish for use in damp places.

Standard carton, 10 spools. Single conductor is also put up in 1/4, 1/2, and 1-pound coils packed individually.

*SINGLE CONDUCTOR—SHIPPING CARTON—WEIGHT, LB.						—TWISTED PAIR—Ship. Wt. Lb.			
Size A.W.G.	Approx. Ft. per Spool	Std. Spool Lb.	10 Spools	Quarter-Pound Coils	Half-Pound Coils	One-Pound Coils	Approx. Ft. per Spool	Std. Spool Lb.	10 Spools
22	310	5	58	30	55	55	155	5	58
20	230	6	68	30	55	55	115	5	58
18	160	7 1/2	83	30	55	55	80	5	58
16	106	8 1/2	93	30	55	55	53	5	58

**Connecting wire:** single conductor wire is also used as connecting wire for blasting purposes and is furnished on 1-pound spools packed 50 spools in a carton weighing 58 pounds.

### Crescent Gas Tube Sign and Oil Burner Ignition Cable

Underwriters' Laboratories Type GTO



Consists of flexible stranded, soft annealed tinned copper conductor insulated with a special high-voltage rubber compound.

The weatherproof type has a rubber-faced tape and a cotton braid thoroughly saturated with a high melting point asphalt and finished with a moisture-resistant, flame-retarding compound.

The lacquer type has a close cotton braid which is impregnated with a lacquer saturant and finished with a number of coats of black, flame-retarding lacquer.

A glass braid can be furnished in place of cotton at slightly higher cost and will give increased life under severe operating conditions.

#### Weatherproof Finish

Type	Max. Voltage	Size A.W.G.	No. of Wires	Overall Diam. In.	Stand-ard Lgth. Pkg. Ft.	Std. Pkg. Ship. Weight Pounds
GTO-5	5000	14	19	.270	500	Coil 25
GTO-10	10000	14	19	.320	500	Coil 30
GTO-15	15000	14	19	.405	250	Coil 23

#### Lacquer Finish

GTO-5	5000	14	19	.240	500	Coil 23
GTO-10	10000	14	19	.290	500	Coil 28
GTO-15	15000	14	19	.375	250	Coil 22

Dimensions and weights listed above are approximate.

### Crescent Damp-Proof Office Wire

#### Single Conductor—Duplex



Consists of solid, soft annealed bare copper conductor insulated with two wraps of cotton applied in reverse directions and saturated in a weatherproof compound. Over a single conductor or two conductors laid parallel is a cotton braid, saturated in paraffin and polished.

Standard colors are red, blue, red-white, and blue-white for single conductor, and red-white for duplex.

Standard carton, 5 coils. Standard coil weight, 10 pounds.

SINGLE CONDUCTOR					DUPLEX				
			No. Coils				No. Coils		
Size	Approx.	Std.	in Std.	Ship.	Approx.	Std.	in Std.	Ship.	
A.W.G.	Ft. per	Coil	Ship.	Wt.	Ft. per	Coil	Ship.	Wt.	
	Pound	Pounds	Ctn.	Lb.	Pound	Pounds	Ctn.	Lb.	
18	106	10	5	53	53	10	5	53	
16	74	10	5	53	37	10	5	53	
14	54	10	5	53	27	10	5	53	

**Leading wire:** duplex office wire is also used as leading wire for setting off explosive charges in coal mines and for this purpose is put up in 100-foot and 125-foot coils packed in individual cartons.

#### Leading Wire Standard Shipping Cartons and Weights

No.	No. of Coils	Weight, Pounds per 100-Foot Coils	Weight, Pounds per 125-Foot Coils
18	30	66	80
16	20	62	76
14	20	84	103



## Crescent Thermostat Cable

## Braided



Consists of solid soft annealed bare copper conductors each insulated with two wraps of cotton applied in reverse directions, saturated in paraffin, and polished.

Two or more insulated conductors, color coated for polarity identification, are cabled and covered with a white cotton braid, saturated in paraffin and polished.

Standard length of coil in package, 500 feet.

No. of Con-ductors	Size A.W.G.	Overall Diam. Inches	Standard Ship. Pkg.	No. of Coils Standard Ship. Pkg.	Pkg. Shipping Weight Pounds
2	18	.190	Carton	5	45
3	18	.200	Carton	5	60
4	18	.225	Bundle	4	67
5	18	.245	Bundle	2	40
2	16	.215	Carton	5	58
3	16	.230	Carton	5	78
4	16	.250	Bundle	4	82
5	16	.275	Bundle	2	50

## Armored



Consists of solid soft annealed bare copper conductors insulated with two wraps of cotton applied in reverse directions, saturated in paraffin and polished.

Two or more insulated conductors, color coated for polarity identification, are cabled and covered with a white cotton braid saturated in paraffin.

Has half-oval galvanized steel armor overall.

Standard length of coil in package, 500 feet.

No. of Con-ductors	Size A.W.G.	Overall Diam. Inches	Standard Ship. Pkg.	No. of Coils Std. Ship. Pkg.	Pkg. Shipping Wt. Lb.
2	18	.230	Carton	4	71
3	18	.240	Carton	4	83
4	18	.260	Bundle	2	52
5	18	.280	Bundle	2	63
2	16	.250	Carton	4	103
3	16	.265	Carton	4	123
4	16	.285	Bundle	2	73
5	16	.310	Bundle	2	92

Dimensions and weights listed above are approximate.

## Armored—Rubber Insulated

Armored thermostat cables with rubber insulated conductors in the following constructions can be supplied on orders of sufficient quantity of a size:

Two to ten conductors of No. 18 or No. 16 solid, soft annealed tinned copper, insulated with  $\frac{3}{64}$ -inch Code Grade rubber compound and covered with a paraffin saturated cotton braid. Two or more color coded conductors are cabled and covered with a wrap of tough, impregnated paper. An interlocking, galvanized steel armor is applied overall.

Two to ten conductors of No. 18 or No. 16 solid, soft annealed tinned copper, insulated with  $\frac{3}{64}$ -inch Code Grade rubber compound and covered with a paraffin saturated cotton braid. Two or more color coded conductors are cabled and covered with a paraffin saturated cotton braid. Half-oval, galvanized steel armor is applied overall.

## Type S Simplex-Tirex Portable Cord

Selenium Neoprene Armored



A non-kinking cord with flexible copper conductors, rubber insulation and a Selenium neoprene rubber sheath which is highly resistant to abrasion. Waterproof, and acids, greases and alkalis have little, if any, effect upon it. Single conductor is approved by Underwriters' for car wiring only. The 2, 3, and 4 conductor is N.E.C. standard for 600 volts. It fits standard bushings and is satisfactory for portable lamps, tools and other appliances.

Supplied in standard lengths of approximately 250 feet in cartons or spools or coils. Longer lengths on reels.

Cured in lead.

## 1-Conductor

Size A.W.G.	18	16	14	12	10
Approx. O.D.	.18	.19	.25	.26	.29
Gross Wt. per 1000 Ft.	23	27	40	50	70

## 2-Conductor

Size A.W.G.	18	16	14	12	10
Approx. O.D.	.39	.41	.53	.61	.64
Gross Wt. per 1000 Ft.	80	90	160	320	360

## 3-Conductor

Size A.W.G.	18	16	14	12	10
Approx. O.D.	.41	.43	.56	.64	.69
Gross Wt. per 1000 Ft.	90	110	330	360	420

## 4-Conductor

Size A.W.G.	18	16	14	12	10
Approx. O.D.	.44	.49	.61	.67	.75
Gross Wt. per 1000 Ft.	110	140	340	400	490

Prices upon application.

## Type SJ Simplex-Tirex Portable Cord

Selenium Neoprene Armored

Made practically the same as the Type S except that it is smaller in diameter and lighter in weight. Suitable for service in offices, dwellings and similar places. Intended for service on such equipment as vacuum cleaners, refrigerators, fans, washing machines, lamps, office equipment and small electric tools. No N.E.C. standards for size 18, 16, 14; 2, 3, and 4 conductor approved by Underwriters' for 300 volts.

Packed in cartons or on spools, each package containing approximately 250 feet of 2-conductor cord.

Cured in lead.

## 2-Conductor

Size A.W.G.	18	16	14
Approx. O.D.	.31	.33	.43
Approx. Gross Wt. 1000 Ft.	60	70	120

## 3-Conductor

Size A.W.G.	18	16	14
Approx. O.D.	.34	.36	.47
Approx. Gross Wt. per 1000 Ft.	80	100	150

## 4-Conductor

Size A.W.G.	18	16
Approx. O.D.	.36	.39
Approx. Gross Wt. per 1000 Ft.	90	110

Prices upon application.

## Tirex Shot Fire Cable

## 2-Conductor

Selenium Neoprene Armored



Suitable for rough work in damp or wet places. Not affected by acid, gas or oil.

The particular features which will appeal to the shot firer, are the small diameter of about  $\frac{1}{4}$  inch and the light weight of  $4\frac{1}{2}$  pounds to 100 feet.

Cable is flexible and has adequate tensile strength for the work for which it was designed. Does not kink or snarl.

Cured in lead.

Size A.W.G.	18
Approximate Outside Diameter	inches 27
Approximate Weight per 1000 Feet	pounds 45



### Simplex-Anhydrex 600 Volt Non-Leaded Underground Cable



A modern cable particularly applicable to networks, series lighting circuits, municipal street lighting, park, playground and airport illuminating systems, etc.

Has low water absorption insulation on the conductor and a tough, neoprene jacket for burial directly in the ground without a lead sheath or without the use of ducts.

Furnished in either single or multi-conductors.

Prices upon request.

#### Single Conductor—Solid

Size A.W.G.	Strands	Approx. O.D. Inches	Cond. Rubber Wall Inches	Jacket Rubber Wall Inches	Approx. Ship. Wt., Lb. per 1000 Feet
14	Solid	.27	.047	.047	60
12	Solid	.29	.047	.047	70
10	Solid	.31	.047	.047	90
8	Solid	.37	.063	.063	140
6	Solid	.40	.063	.063	180

#### Single Conductor—Stranded

6	7	.43	.063	.063	200
4	7	.47	.063	.063	260
2	7	.53	.063	.063	380
1	19	.64	.078	.078	510
1/0	19	.68	.078	.078	600
2/0	19	.73	.078	.078	720
3/0	19	.78	.078	.078	880
4/0	19	.83	.078	.078	1070
M CM					
250	37	.95	.094	.094	1290
300	37	1.00	.094	.094	1500
350	37	1.05	.094	.094	1710
400	37	1.10	.094	.094	1940
500	37	1.18	.094	.094	2300
600	61	1.33	.109	.094	2820
750	61	1.43	.109	.094	3330
1000	61	1.59	.109	.094	4460

#### Two Conductor—Twin Flat

16	Solid	.27x .45	.047	.063	90
14	Solid	.29x .48	.047	.078	100
12	Solid	.30x .51	.047	.078	120
10	Solid	.32x .55	.047	.078	150
8	Solid	.41x .70	.063	.078	260
6	Solid	.43x .74	.063	.078	350
6	7	.46x .79	.063	.078	360
4	7	.51x .88	.063	.078	500
2	7	.60x1.04	.063	.094	740
1	19	.67x1.18	.078	.094	900
1/0	19	.71x1.26	.078	.094	1100
2/0	19	.76x1.35	.078	.094	1330
3/0	19	.84x1.49	.078	.109	1660
4/0	19	.90x1.60	.078	.109	2010

#### Mine Telephone—300-Volt Maximum

16	Solid, Twin	.24x .39	.031	.063	80
16	Solid, 2-Cond.	.39	.031	.063	90

#### Two Conductor—Twisted

16	Solid	.45	.047	.078	110
14	Solid	.48	.047	.078	120
12	Solid	.51	.047	.078	130
10	Solid	.58	.047	.078	210
8	Solid	.70	.063	.078	300
6	Solid	.74	.063	.078	390
6	7	.79	.063	.078	400
4	7	.91	.063	.094	580
2	7	1.04	.063	.094	800
1	19	1.18	.078	.094	1030
1/0	19	1.29	.078	.109	1280
2/0	19	1.49	.078	.109	1550
3/0	19	1.60	.078	.109	1860
4/0	19		.078	.109	2240

#### Three Conductor

14	Solid	.51	.047	.078	160
12	Solid	.57	.047	.078	240
10	Solid	.62	.047	.078	290
8	Solid	.74	.063	.078	430
6	Solid	.79	.063	.094	550
6	7	.87	.063	.094	610
4	7	.97	.063	.094	860
2	7	1.10	.063	.094	1220
1	19	1.29	.078	.109	1530
1/0	19	1.38	.078	.109	1860
2/0	19	1.48	.078	.109	2190
3/0	19	1.59	.078	.109	2640
4/0	19	1.74	.078	.109	3320
M CM					
250	37	1.92	.094	.125	3940
300	37	2.03	.094	.125	4850
350	37	2.14	.094	.125	5180
400	37	2.27	.094	.125	5910
500	37	2.46	.094	.125	7190

### Simplex-Telex Twin Underground Telephone Cable

A rubber insulated, non-water absorptive telephone cable made with a rodent resistant tough rubber jacket, or with an armor over the jacket, but without lead, for laying directly in the ground for rural telephone lines, private estates and similar applications.

Standard packages of 2500 feet of rubber jacketed and 1500 feet of armored cable are carried in stock on 22-inch non-returnable reels. No charge for this stock type reel; and no credit will be allowed.

If other lengths are required, there will be an extra charge for packaging or for the use of returnable reels.

#### Rubber Jacket Telex Cable



No. 17 solid tinned copper twin cable, insulated with tough rubber jacket.

Outside diameter, .35 x.20-inch.

Standard package is 2500-foot length on 22-inch non-returnable reel.

Shipping weight per 1000 feet, 50 pounds.

Per 1000 Feet.....

#### Armored Telex Cable



No. 17 solid tinned copper twin cable, insulated with a tough rubber jacket; armored with 2 bright steel tapes. Impregnated paper tape overall.

Does not require a ground wire, but the following precautions should be taken.

At each splice a jumper wire should be soldered from steel to steel to assure continuous electrical circuits in the steel.

At the pole line end a jumper wire should be soldered onto the steel of the cable and connected to the grounding system which is always a part of the installation at the last pole of the overhead run.

The jumper wire should be about No. 14 A.W.G. either tinned or lead coated and without insulation. A special solder should be used to resist corrosion.

Outside diameter, .42x.32-inch.

Standard package is 1500-foot length on 22-inch non-returnable reel.

Shipping weight per 1000 feet, 140 pounds.

Per 1000 Feet.....

#### Telex Ground Wire

No. 14 (.066) lead dipped bare copper wire for grounding.

Furnished on 11-inch non-returnable reels containing 3000 feet.

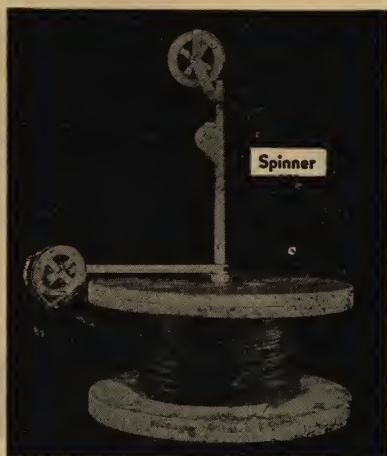
Shipping weight per 1000 feet, 14 pounds.

Per 1000 Feet.....



## Accessories for Simplex-Telex Twin Underground Telephone Cable

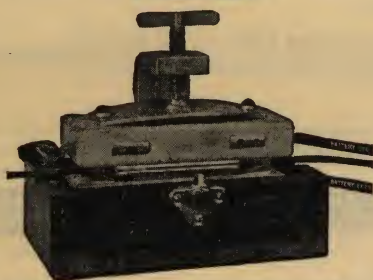
### Spinners



A means of transposing conductor every 3 to 5 feet, and at the same time protecting the cable as it comes off over the head of the reel.

Each.....

### Vulcanizers



Including mold, indicating light, buzzer, battery leads and clips, self-contained in cover box for use with 6-volt automobile battery.

Each.....

### No. 102-A U-Type Terminal Boxes

For rubber jacket or armored cable.

Each.....

### No. 153-A Loading Coil Cases Equipped with No. 638 Coil



Each.....

### Crimping Tools



For crimping brass sleeves to copper conductors.

Each..... \$4.00

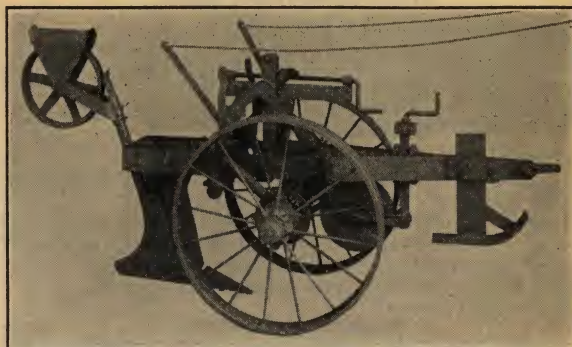
### Splicing Kits

Rubber slab and four brass conductor splicing sleeves, two extra.

Packed in individual packages.

For One Splice.....each ....

## Killefer Cable Layers



Designed for burying small cable, flat counterpoise and heavily insulated wire without ditching or backfilling.

Strongly constructed frame of structural steel; welded and hot riveted. Wearing parts are protected and reinforced. Each part is removable and replaceable.

Wheels are constructed of highest-grade steel for lasting strength. Heavy-duty spokes are riveted into wide rims which are flanged and grooved for extra sturdiness and to protect the spoke heads. Each wheel turns on a low-cost replaceable sleeve which takes the wear and protects the axle.

No.	201-C	251-C
Maximum Penetration.....inches	20	24
Point Size.....inches	1x2 1/2	1x3
Standard.....inches	1x6	1x8
Shin Blade.....inches	1x2	1x2
Planting Tube, Inside Diameter.....inches	1 3/4	1 3/4
Wheel Diameter.....inches	42	48
Wheel Tread.....inches	38	40
Wheel Tire.....inches	5	6
Power Required.....horsepower	25 to 35	25 to 40
Weight.....pounds	1150	1730

### Tirex Motor Lead Cable Single Conductor—Paper Taped Selenium Neoprene Armored



Recommended for the interior wiring of motors, mine locomotives and wherever a flexible cable is needed. Cured in lead.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.44	180	2	259	.66	470
6	49	.51	250	1	133	.74	570
6	133	.51	250	1/0	133	.77	630
5	133	.52	280	1/0	259	.77	630
4	49	.57	330	2/0	133	.82	750
4	133	.57	330	2/0	259	.82	750
3	133	.63	390	3/0	427	.87	950
2	133	.66	470	4/0	427	.93	1110

### Tirex Welding Cable Super Flexible—Single Conductor Selenium Neoprene Armored



Safe for both operator and the public when used on streets and public ways.

Conductor consists of fine copper wires stranded to give maximum flexibility.

The insulation is compounded and cured in lead to meet the unusual service conditions. It strips clean because of the separator between the insulation and the conductor.

Size A.W.G.	2	1	1/0	2/0	3/0	4/0
Strands No. 34 N.T.	1715	2156	2695	3381	4263	5341
Minimum O.D. inches	.56	.63	.68	.75	.82	.90
Approx. Gross Wt. per 1000 Ft. .... pounds	350	450	530	640	770	950



## Tirex Selenium Rubber Armored Cable

600 Volts

## Single Conductor—Portable



Specially suitable for electric mine locomotives of the gathering reel type where it is necessary to leave the trolley wire in the main entry and enter rooms to pick up or place cars. Cured in lead.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.44	180	*1	133	.74	580
*6	49	.51	250	1/0	133	.77	630
*5	49	.52	280	1/0	259	.77	630
*4	49	.57	330	2/0	133	.82	750
*4	133	.57	330	2/0	259	.82	750
*3	49	.63	410	3/0	259	.87	950
3	133	.63	410	3/0	427	.87	950
2	133	.66	470	4/0	259	.93	1110
2	259	.66	470	4/0	427	.93	1110

\*With steel reinforcing strands—to be used as mine locomotive cable.

With or without steel reinforcing strands.

## Twin—Parallel



For use where 2-conductor cable of this construction is preferred. Easy to reel as it lies flat. May also be used for battery charging. Cured in lead.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
6	49	.62x1.00	620	1	133	.88x1.46	1310
4	133	.71x1.15	780	1	259	.88x1.46	1310
3	133	.74x1.22	880	1/0	259	.93x1.57	1490
2	133	.78x1.29	1000	2/0	259	.99x1.68	1870

## 2-Conductor—Concentric



This type of cable is recommended for mining machines where the greater weight and diameter of the 2-conductor twisted type is a disadvantage. Cured in lead.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.65	360	1/0	133	1.10	1440
6	49	.77	510	2/0	259	1.10	1440
5	49	.80	570	1/0	133	1.17	1660
4	49	.84	750	2/0	259	1.17	1660
4	133	.84	750	3/0	259	1.25	2020
3	49	.89	870	3/0	427	1.25	2020
3	133	.89	870	4/0	259	1.33	2340
2	133	.94	970	4/0	427	1.33	2340
1	133	1.05	1250	...	...	....	....

## 2-Conductor—Round



This twisted cable is recommended for use on mining machines, cranes and portable equipment. An excellent utility cable for d.c. motors and single-phase portable machinery and for battery charging. Cured in lead.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.81	510	1/0	133	1.52	2130
6	49	.93	770	1/0	259	1.52	2130
5	49	1.01	880	2/0	133	1.65	2780
4	49	1.08	1000	2/0	259	1.65	2780
4	133	1.08	1000	3/0	259	1.78	2940
3	49	1.17	1160	3/0	427	1.78	2940
3	133	1.17	1160	4/0	259	1.92	3870
2	133	1.27	1450	4/0	427	1.92	3870
1	133	1.44	1880	...	...	....	....

Type W—3-Conductor  
Without Ground Wires

For 3-phase portable machinery. Frequently used for dredges and shovels. The tough outer armor is suited for rough work out of doors. Atmospheric conditions, oils, acids, and greases do not affect this cable to any appreciable extent. Cured in lead.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.91	750	1	259	1.51	2210
6	49	1.01	910	1/0	133	1.65	2910
5	49	1.10	1060	1/0	259	1.65	3250
4	49	1.17	1230	2/0	133	1.75	3250
4	133	1.17	1230	2/0	259	1.75	3250
3	133	1.24	1490	3/0	259	1.89	4060
2	133	1.34	1690	3/0	427	1.89	4120
2	259	1.34	1690	4/0	259	2.04	4650
1	133	1.51	2210	4/0	427	2.04	4730

Type W—4-Conductor  
Without Ground Wires

For 3-phase portable machinery where an extra conductor is needed for grounding purposes, also for use on 2-phase circuits. Cured in lead.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.99	850	1	259	1.68	3020
6	49	1.10	1070	1/0	133	1.79	3310
6	133	1.10	1070	1/0	259	1.79	3250
5	49	1.19	1360	2/0	133	1.93	4300
4	49	1.27	1580	2/0	259	1.93	4240
4	133	1.27	1590	3/0	259	2.07	4820
3	133	1.34	1800	3/0	427	2.07	4890
2	133	1.48	2270	4/0	259	2.26	5640
2	259	1.48	2230	4/0	427	2.26	5760



### Whitney Blake No. 17 A.W.G. Teleprene Drop Wire

Bronze, Parallel, Specification 17 TBP  
Bronze, Reinforced Parallel, Specification 17 TBP-R



Used to extend telephone circuit from open wire or distributing cable terminals on pole to subscribers' station.

Teleprene drop wire is furnished with No. 17 A.W.G. Teleplate coated bronze conductors insulated with a rubber compound designed for long life and excellent electrical characteristics, and jacketed with a tire tread type of Neoprene compound.

The Teleplate coating consists of a lead coating applied directly to the bronze wire to resist corrosion and an electroplated brass coating over the lead to give enduring adhesion of the insulation to the conductor.

The protective lead coating meets the Ammonium Persulfate Test for continuity of coating of A.S.T.M. Specification B-189-44T.

The reinforced types have a tough reinforcing textile braid between the conductor insulation and the outer jacket.

A double ridge raised tracer on the side of the jacket gives positive polarity identification.

Reinforced Teleprene has, substantially, twice the compression resistance, half again higher insulation resistance, three times the dielectric strength, and, by test, is fifteen times as rugged as corresponding weather-proof drop wires.

The tire tread type Neoprene jacket has extremely good resistance to sunlight, weather, and natural aging. The Neoprene jacket has excellent resistance to oil, most acids, alkalis, and other corrosive chemicals which destroy braids. It is practically unaffected by changes in temperature, does not melt or soften in summer, or become hard and brittle in winter. It withstands the effects of smoke, various fumes, and air conditions found in manufacturing areas, mines, and railroad centers.

Specification No. ....	17TBP	17TBP-R
Conductor Resistance,		
Ohms per 1000 Ft. Max. ....	16	16
Conductor Breaking Strength, Min. lb. ....	170	170
Overall Dimensions, Nominal. .... in. ....	.175x.286	.195x.306
Coil Eye, Approx. .... in. ....	16	16
Approx. Weight per 1000 Feet. .... lb. ....	41	42

### Whitney Blake No. 17 A.W.G. Teleprene Drop Wire

Bronze, Twisted Pair, Specification 17TB2  
Bronze, Reinforced Twisted Pair, Specification 17TB2-R



Has double ridged tracer on jacket of one wire for polarity identification.

Has same Teleplate coated conductors, rubber conductor insulation, and tough Neoprene outer jacket as Specification 17TBP.

Reinforced twisted pair has strong textile inner braid similar to Specification 17TBP-R.

Specification No. ....	17TB2	17TB2-R
Coil Eye, Approximate. .... in. ....	16	16
Approx. Weight per 1000 Feet. .... lb. ....	40	40

### Whitney Blake No. 17 A.W.G. Weatherproof Drop Wire

Bronze, Parallel, Specification 17BP



The standard bronze conductor is signal bronze but Hitensso bronze, having properties listed below, can be supplied when specified.

All conductors are Teleplate coated for corrosion resistance and to promote good adhesion between conductor and insulation.

Conductor insulation is long life, highly compression resistant rubber compound with excellent electrical properties. A raised ridge in the rubber insulation on one conductor provides polarity identification.

A heavy braid of strong, unbleached, two-ply cotton yarn is closely woven over the two parallel insulated conductors to give added service life to the wire.

The braid is completely saturated with an asphalt base compound, containing straight asphalt of crude oil origin, that is both moisture and weather resistant. A tough, flexible, high melting point, finishing coat of Stearine pitch and mica is applied over the saturated braid. The life of the rubber and braid are increased by this effective seal against light, moisture and oxygen.

Specification No. ....	17BP	*17
Max. Conductor Resistance,		
Ohms per 1000 Feet. ....	16	6
Conductor Breaking Strength,		
Minimum. .... lb. ....	170	145
Diameter over Rubber, Nominal. .... in. ....	.110	.110
Coil Eye, Approximate. .... in. ....	16	16
Approx. Weight per 1000 Feet. .... lb. ....	32	32

\*Hitensso Bronze.

### Whitney Blake No. 17 A.W.G. Weatherproof Drop Wire

Bronze, Twisted Pair, Specification 17B2  
Copperweld, Twisted Pair, Specification 17CW2



Has raised tracer in rubber insulation on one wire, permitting more even application of weatherproof finish and providing more uniform wear of the braid.

Conductors are Teleplate coated.

Has same high grade rubber insulation, braid, and weather-proofing conductor resistance, breaking strength and diameter over rubber as Specification 17BP.

Specification 17B2 can be furnished also with Hitensso Bronze conductor.

Specification No. ....	17B2	17CW2
Coil Eye, Approximate. .... in. ....	16	16
Approx. Weight per 1000 Feet. .... lb. ....	33	33

### Whitney Blake No. 17 A.W.G. Weatherproof Drop Wire

Bronze, Parallel, Specification 17BT  
Hawser Twine Braid, Abrasion Resistant Tree Wire



Made for service where swaying of tree limbs rub and fray the standard braids quickly.

Constructed similar to Specification 17BP except that the braid is heavy hawser twine.

Standard conductor is signal bronze Teleplate coated. Conductor resistance, breaking strength, diameter over rubber, rubber insulation, and weatherproofing are the same as Specification 17BP.

Specification No. ....	17BT
Coil Eye, Approx. .... in. ....	16
Approx. Weight per 1000 feet. .... lb. ....	47



**Whitney Blake No. 14 A.W.G. Outside Wire****Hard Copper, Twisted Pair, Specification 14HC2**

Used in drops extending telephone circuits from open wire or distributing cable terminals where transmission loss of the drop must be lower than that of No. 17 Bronze or Copperweld.

Used also in bridling toll line circuits.

Has raised ridge in rubber insulation on one conductor for polarity identification.

All conductors are Teleplate coated for corrosion resistance and to promote good adhesion between conductor and insulation.

Conductor insulation is long life, highly compression resistant rubber compound with excellent electrical properties.

A heavy braid of strong, unbleached, two-ply cotton yarn is closely woven over each of the two parallel insulated conductors to give added service life to the wire.

The braid is completely saturated with an asphalt base compound, containing straight asphalt of crude oil origin, that is both moisture and weather resistant. A tough, flexible, high melting point, finishing coat of Stearine pitch and mica is applied over the saturated braid. The life of the rubber and braid are increased by this effective seal against light, moisture, and oxygen.

Specification No.....	14HC2
Max. Conductor Resistance, Ohms per 1000 Feet..	3
Conductor Breaking Strength, Minimum.....lb.	190
Diameter over Rubber, Nominal.....in.	.156
Coil Eye, Approximate.....in.	16
Approximate Weight per 1000 Feet.....lb.	60

**Whitney Blake No. 16 A.W.G. Outside Wire****Hard Copper, Twisted Pair, Specification 16HC2**

For same application as Specification 14HC2.

Rubber insulation, braid, Teleplate coated conductors and weatherproofing are the same grade as Specification 14HC2.

Specification No.....	16HC2
Max. Conductor Resistance, Ohms per 1000 Feet..	4.55
Conductor Breaking Strength, Minimum.....lb.	125
Diameter over Rubber, Nominal.....in.	.125
Coil Eye, Approximate.....in.	16
Approximate Weight per 1000 Feet.....lb.	42

**Whitney Blake Bridle Wire**

**No. 18 Soft Copper, Twisted Pair, Specification 18B2**  
**No. 20 Soft Copper, Twisted Pair, Specification 20B2**



Used in ring wiring and in bridling open wire lines.

Conductor Teleplate coated for corrosion resistance and good adhesion of insulation to conductor.

Weatherproof braid has raised tracer threads or threads to identify conductors in pair, triple, or quadruple wires.

Rubber insulation similar to Specification 14HC2.

Saturated and finished the same as Specification 14HC2.

Specification No.....	18B2	20B2
Max. Conductor Resistance,		
Ohms per 1000 Feet.....	7.5	11
Diameter over Rubber, Nominal.....in.	.090	.080
Coil Eye, Approximate.....in.	16	9
Approximate Weight per 1000 Ft.....lb.	31	20

**Whitney Blake Teleprene Outside Wire****No. 14 A.W.G. Hard Copper, Twisted Pair, Specification 14THC-2****No. 16 A.W.G. Hard Copper, Twisted Pair, Specification 16THC-2**

Used in drops extending telephone circuits from open wire or distributing cable terminals where transmission loss of the drop must be lower than that of No. 17 bronze or copperweld. Used also in bridling toll line circuits.

Has double ridged tracer in jacket on one conductor for polarity identification.

Teleplate conductors, rubber insulation, and tough Neoprene jacket same as that for Specification 17TB-2.

Size A.W.G.....	14	16
Conductor Resist., Ohms per 1000 Ft. Max.	3	4.55
Conductor Breaking Strength.....pounds	190	125
Nominal Diameter Over Jacket.....inches	0.226	0.185
Approximate Coil Eye Size.....inches	16	16
Approximate Weight per 1000 Feet...pounds	80	55

**Whitney Blake No. 18 A.W.G. Teleprene Bridle Wire****Soft Copper, Twisted Pair, Specification 18TBC-2****Soft Copper, Triple, Specification 18TBC-3**

Used in ring wiring and in bridling open wire lines.

Conductor Teleplate-coated for corrosion resistance and good adhesion of insulation to conductor.

Rubber insulation and tough Neoprene outer jacket similar to that of Specification 17TB-2.

Double and triple ridge tracers on jacket identify conductors in twisted pair and triple types.

Specification No.....	18TBC-2	18TBC-3
Conductor Resistance, Ohms per 1000		
Ft. Max.....	7.5	7.5
Nominal Diameter Over Jacket.inches	0.140	0.140
Approximate Coil Eye Size.....	16	16
Approximate Weight per		
1000 Feet.....pounds	32	48

**Whitney Blake Teleseal Signal and Communication Wire****Twisted Pair, Hard Copper**

For low voltage signal and communication purposes in wet locations. Has double-ridged tracer on jacket of one wire for polarity identification.

Furnished in two sizes, Nos. 14 and 16, with Teleplate coated hard copper conductors. Characterized by low moisture absorption, low transmission losses at telephone frequencies, and stability of operation under water.

Over the insulation, and adherent to it, is a tough, tire tread type of Neoprene jacket identical in composition to that used on Teleprene.

Size A.W.G.....	14	16
Conductor Resistance, Ohms per 100 Ft. Max.	3	4.55
Conductor Breaking Strength, Minimum.lb.	190	125
Nominal Diameter Over Jacket.....inches	0.238	0.203
Approximate Coil Eye Size.....inches	16	16
Approximate Weight per 1000 Feet...pounds	85	60



### Whitney Blake No. 22 A.W.G. Distributing Frame or Duct Wire



#### Twisted Pair Plastite Insulation, Specification 22S2

#### Triple, Plastite Insulation, Specification 22S3

#### Quadruple, Plastite Insulation, Specification 22S4

Used on distributing frames, cross connecting racks, and in conduit or duct.

Bare soft copper conductor insulated with tough, high dielectric strength Plastite insulation.

Twisted pair has one black and one red conductor; in triple, third leg is cream; and in the quadruple, fourth leg is green.

Specification No.	22S2	22S3	22S4
Number of Conductors	2	3	4
Conductor Resistance, Ohms per 1000 Feet.....Max.	20	20	20
Diameter over Insulation, Nominal.....in.	.074	.074	.074
Coil Eye, Approximate.....in.	7	7	7
Approx. Weight per 1000 Ft.....lb.	9	13	17

### Whitney Blake Inside Telephone Wire

#### No. 22 A.W.G. Soft Copper, Twisted Pair, Plastite Insulation, Specification 22PN2

#### No. 19 A.W.G. Soft Copper, Twisted Pair, Plastite Insulation, Specification 19PN2

#### No. 19 A.W.G. Soft Copper, Twisted Pair, 1/64-Inch Rubber Insulation, Specification 19N2



Used inside buildings for extending circuits from arrestors or other terminating fixtures of outside lines to station sets.

Furnished in single pair, triple, and quadruple.

Plastite insulated types have soft copper conductors with smooth Plastite, synthetic resin insulation that has high dielectric strength and is tough, flame proof, and highly resistant to abrasion, water, oil, alkali, and most solvents.

Plain, single and double ridged tracers make identification easy. Standard colors are ivory and brown.

Rubber insulated type has braid of brown hard glazed yarn over each insulated conductor.

Specification No.	22PN2	19PN2	19N2
Conductor Resistance, Ohms per 1000 Feet.....Max.	20	20	10
Diameter over Insulation, Nominal.....in.	.074	.086	.096
Coil Eye, Approximate.....in.	7	9	9
Approx. Weight per 1000 Ft.....lb.	9	14	21

### Whitney Blake Single Conductor Concentric Microphone Cable



For ribbon and single button carbon microphones, loud speaker circuits, permanent or tie-in wiring, low impedance transmission lines up to about 600 ohms, and communication system circuits where shield is used for grounded side of the circuit.

**No. N-26J-1.** Low capacity flexible cable for crystal microphones and for permanent or tie-in wiring on medium or high impedance transmission lines. No. 26 A.W.G. stranded tinned bronze conductor, high grade, low capacity rubber insulation, braided tinned copper shield, cotton covering, and tough oil-resistant neoprene jacket.

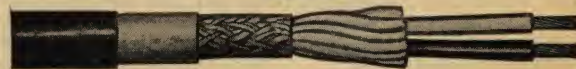
**No. N-22J-1.** No. 22 A.W.G. tinned solid copper conductor, high quality rubber insulation, braided tinned copper shield, cotton covering, and oil-resistant neoprene covering.

**No. N-18J-1.** Same as No. N-22J-1 except has No. 18 A.W.G. tinned stranded Copper conductor.

No.	N-26J-1	N-22J-1	N-18J-1
Conductor Size A.W.G.	26	22	18
Capacity Conductor-Shield .....mmf/foot	30	85	150
Outside Diameter.....inches	0.245	0.150	0.171
Approximate Weight per 1000 Feet.....pounds	46	17	21

No. N-22J-1 and No. N-18J-1 furnished with Plastite synthetic resin insulation and jacket on special order.

### Whitney Blake Two-Conductor Shielded Cable



For double button carbon microphones, dynamic microphones, and photo-electric cell circuits using shield as grounding connection and for low impedance transmission lines up to 600 ohms.

**No. N-22J-2.** No. 22 A.W.G. tinned solid copper conductors, high grade rubber insulation, braided tinned copper shield, cotton covering, and neoprene jacket.

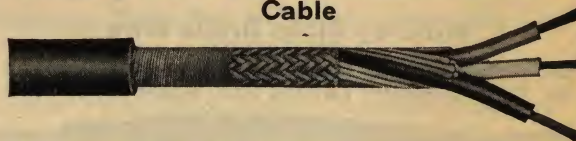
**No. N-20J-2.** Same as No. N-22J-2 except conductors are No. 20 A.W.G. tinned stranded copper.

**No. N-18J-2.** Same as No. N-22J-2 except conductors are No. 18 A.W.G. tinned stranded copper.

No.	N-22J-2	N-20J-2	N-18J-2
Conductor Size A.W.G.	22	20	18
Capacity: Conductor to Shield.....mmf/ft.	85	115	125
Conductor to Conductor .....mmf/ft.	45	60	70
Outside Diameter.....inches	0.225	0.280	0.280
Approximate Weight per 1000 Feet.....pounds	30	50	60

Furnished with Plastite synthetic resin insulation on special order.

### Whitney Blake Three-Conductor Shielded Cable



For double button carbon microphones operating into circuits where diaphragm of microphone must be above ground potential, dynamic loud speaker extensions, and low impedance circuits up to 600 ohms.

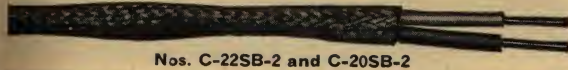
**No. N-20J-3.** No. 20 A.W.G. tinned stranded copper conductors, high grade rubber insulation, braided tinned copper shield, cotton covering, and neoprene jacket.

No.	N-20J-3
Conductor Size A.W.G.	20
Capacity: Conductor to Shield.....mmf/ft.	115
Conductor to Conductor.....mmf/ft.	60
Outside Diameter.....inches	0.285
Approximate Weight per 1000 Feet.....pounds	60

Corresponding type with Plastite synthetic resin insulation can be furnished on special order.



## Whitney Blake Speech Input and Sound System Cable Inter-Panel and Communication Equipment Wiring Cable



Nos. C-22SB-2 and C-20SB-2



Nos. C-22SBC-2 and C-20SBC-2

For inside use for internal equipment and panel wiring. Types with overall cotton braid may be used for speech and audio circuits on inside communication systems, equipment and panel cross-connection, etc.

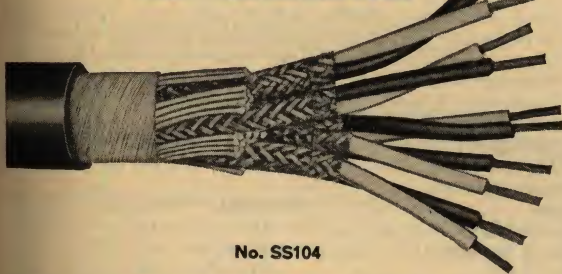
Has two tinned enameled solid copper conductors, silk or rayon wind, polarized cotton wind or braid, lacquer or wax finish and a braided bare copper shield.

No.	Conductors	A.W.G.	Shield to Conductor	Conductor to Conductor	Outside Diameter Inches	Overall Cotton Braid	Approximate Weight Pounds per 1000 Feet
C-22SB-2	2	22	100	60	0.125	No	12
C-22SBC-2	2	22	100	60	0.140	Yes	13
C-20SB-2	2	20	90	55	0.187	No	27
C-20SBC-2	2	20	90	55	0.205	Yes	28

Furnished with braided tinned copper shield and with Plastite synthetic resin insulated copper conductors on special order.

## Whitney Blake Multi-Channel Sound System Cable

### Main Distribution Cable



No. SS104

Used in hotels, hospitals, schools, auditoriums, etc., to transmit several sound programs simultaneously from main control and operating panel to local distribution points. Made to order only.

### No. SS100, 6 Pair Unshielded Cable

Each twisted pair consists of two No. 22 A.W.G. tinned solid copper conductors insulated with Plastite synthetic resin insulation. Six twisted pairs are cabled together and covered with a Plastite resin jacket. Overall diameter, 0.370 inches.

### No. SS103, 6 Pair Overall Shielded Cable

Same construction as No. SS100 except that after cabling the six twisted pairs together, a cotton covering and a braided tinned copper overall shield is applied and a lacquered cotton braid is then applied over the shield. Overall diameter, 0.325 inches.

### No. SS104, 5 Shielded Pair Cable

Each twisted pair consists of two No. 18 A.W.G. tinned solid copper conductors insulated with Plastite synthetic insulation and having a braided tinned copper shield applied directly over each twisted pair. Five of these individually shielded twisted pairs are cabled together, covered with a cotton wind and an overall jacket. Overall diameter, 0.560 inches.

### No. SS105, 7 Shielded Pair Cable

Same construction as No. SS105 except that it has seven separately shielded pairs. Overall diameter, 0.620 inches.

### Special Applications

Multi-channel cable similar to the above with shielded or unshielded twisted pairs or concentric cable for separate channels, with or without overall shield, and with lacquered braid or Plastite synthetic resin outer jacket can be furnished on special order.

### Hospital Silent Call Cord

Has five No. 18 A.W.G. stranded conductors covered with Plastite synthetic resin insulation. One insulated conductor is red and one white for circuit identification. Has a Plastite overall jacket. Overall diameter, 0.320 inches.

## Whitney Blake Co-Axial Radio Frequency Cables

### No. RG-29/U—Solid Copper Conductor



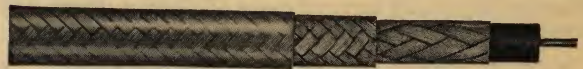
Small size polyethylene insulated low loss semi-flexible cable with polyethylene jacket.

### No. RG-37/U—Solid Copper Conductor



General purpose small size semi-flexible I.F. cable, synthetic rubber insulated with polyethylene jacket.

### No. RG-38/U—Solid Copper Conductor



Same as No. RG-37/U but with double shield.

### No. RG-39/U—Solid Copperweld Conductor



Small size semi-flexible I.F. cable synthetic rubber insulated with double shield and polyethylene jacket.

### No. RG-41/U—No. 30 Stranded Copper Conductor



Medium size synthetic rubber insulated semi-flexible cable with neoprene jacket for twisting applications.

### No. RG-62/U—Solid Copperweld Conductor



Small size, low capacity, air space cable. Center conductor is spirally wrapped with a polyethylene thread. Synthetic resin jacket.

No.	Tinned Copper Shield	Nominal Cable O.D. Inches	Nominal Impedance Ohms	Nominal Attenuation Decibel Per 100 Ft.	Nominal Cap. UUF Foot	Maximum Operating Voltage RMS.
RG-29/U	Single	0.184	53.5	11.7 at 400 mc.	29	1900
RG-37/U	Single	0.210	55	0.6 at 1 mc.	38	750
RG-38/U	Double	0.312	55	0.6 at 1 mc.	38	1000
RG-39/U	Double	0.312	72.5	0.6 at 1 mc.	28	1000
RG-41/U	Single	0.425	67.5	0.5 at 1 mc.	27	3000
RG-62/U	*Single	0.242	93	8.0 at 400 mc.	13.5	750

\*Plain copper.



## Type SJ Whitney Blake Rubber Sheathed Cord

Maximum Voltage Rating, 300 Volts

Approved by Underwriters' Laboratories



Recommended for light duty tools, refrigerators, vacuum cleaners, washing machines, sewing machines, multigraph machines, cash registers, billing machines, drop lights, extension cords, etc.

Made with flexible and extra flexible stranded copper conductors, separator, 30 per cent rubber insulation, twisted with fillers and covered with cotton binder, 40 per cent tough rubber jacket overall. Also made with oil resistant Neoprene jacket, Type SJO.

Flexible stranding is for stationary service and extra flexible stranding for movable devices.

The rubber compounds of this moisture-proof cord are age-resisting and provide high resistance to abrasion, shock, and twisting.

Put up in 250-foot coils or, where quantity warrants, in factory lengths on reels.

	Flexible Stranding		Extra Flexible Stranding	
Size A.W.G.	18	16	18	16
No. of Strands	16	26	41	65
Size Wire	30	30	34	34
Current Carrying Cap. .... amps.	7	10	7	10
2 Conductor:				
Approx. O.D. .... in.	.305	.330	.305	.330
Approx. Wt. per 1000 Ft. .... lb.	50	62	50	62
3 Conductor:				
Approx. O.D. .... in.	.330	.360	.330	.360
Approx. Wt. per 1000 Ft. .... lb.	63	87	63	87

## Type S Whitney Blake Rubber Sheathed Cord

Maximum Voltage Rating 600 Volts

Approved by Underwriters' Laboratories



For heavy portable tools, pendant lighting, car heaters, conveyors, garage heaters, ticket vendors, floor polishers, sanders, etc.

Made with flexible stranded copper conductors, separator, 30 per cent rubber insulation, conductors twisted with fillers and covered with cotton binder, 40 per cent heavy duty rubber jacket overall. Also made with oil resistant Neoprene jacket, Type SO.

The rubber compounds of this moisture-proof cord are age-resisting and provide high resistance to abrasion, shock, and twisting.

Put up in 250-foot coils or, where quantity warrants, in factory lengths on reels.

Size A.W.G.	No. of Strands	Size Wire	Current Carrying Capacity Amperes	— 2 Conductor —		— 3 Conductor —	
				Approx. O.D. Inches	Approx. Wt. Lb. per 1000 Feet	Approx. O.D. Inches	Approx. Wt. Lb. per 1000 Feet
18	41	34	7	.390	74	.405	99
16	65	34	10	.405	87	.430	126
14	41	30	15	.530	142	.560	170
12	65	30	20	.605	172	.635	215
10	104	30	25	.640	210	....	...

## Type C Whitney Blake Twisted Pair Lamp Cord

Approved by Underwriters' Laboratories



Recommended for portable lamps, clocks, fans, toys, etc. Made with stranded copper conductors, paper separator, code rubber insulation, and glazed cotton green and yellow braid over each conductor. Put up in 250-foot coils or, where quantity warrants, in factory lengths on reels.

Size A.W.G.	18	16	14	12
No. of Strands	16	26	41	65
Size Wire	30	30	30	30
Insulation Thickness	in. 1/32	1/32	3/64	3/64
Approx. O.D.	in. .305	.330	.430	.470
Current Carrying Cap. .... amps.	5	7	15	20
Max. Voltage Rating	volts 300	300	600	600
Approx. Wt. per 1000 Ft.	lb. 32	40	66	82

## Type POSJ Whitney Blake Tru-Rip Rubber Sheathed Parallel Cord

Maximum Voltage Rating, 300 Volts

Approved by Underwriters' Laboratories



Used for lamps, clocks, radios, fans, toys, scales, signs, cash registers, etc. Made with flexible stranded copper conductors, separator, and a 40 per cent rubber insulation.

Waterproof, and slits, strips, and handles easily.

Available in black, brown, and ivory, and other Nema colors on request.

Put up—Type POSJ-64, 500-foot spools; Type POSJ-32, 250-foot spools; or where quantity warrants, in factory lengths on reels.

Type	POSJ-64	POSJ-32	POSJ-32
Size A.W.G.	18	18	16
No. of Strands	41	41	65
Size Wire	34	34	34
Approx. O.D.	in. .230x.125	.295x.155	.315x.170
Current Carrying Capacity	amps. 7	7	10
Approx. Wt. per 1000 Ft.	lb. 26	38	48

## Type SV Whitney Blake Rubber Sheathed Cord

Maximum Voltage Rating, 300 Volts

Approved by Underwriters' Laboratories



For light duty appliances such as vacuum cleaners, food mixers, fans, etc.

Made with flexible stranded copper conductors, separator, 30 per cent rubber insulation, conductors twisted with fillers and covered with cotton binder, 40 per cent tough rubber jacket overall. Also made with oil-resistant Neoprene jacket, Type SVO.

The rubber compounds of this moisture-proof cord are age-resisting and provide high resistance to abrasion, shock, and twisting.

Put up in 250-foot coils or, where quantity warrants, in factory lengths on reels.

Size A.W.G.	18
No. of Strands	41
Size Wire	34
Approximate O.D.	inches .250
Current Carrying Capacity	amperes 7
Approximate Weight per 1000 Feet	pounds 39



## Type POT Whitney Blake Tru-Rip Plastite Cord

Maximum Voltage Rating, 300 Volts  
Approved by Underwriters' Laboratories



Used for lamps, clocks, radios, and light appliances.

Made of soft annealed No. 34 bare copper stranded conductors, with Plastite jacket applied over parallel conductors. Polarity is established by use of ridges on the insulation. This construction permits easy separation into two separately insulated conductors.

Colors: other than black, brown or ivory require minimum order of 25,000 feet.

Put up in 250-foot spools or factory lengths on non-returnable reels.

Type.....	Pot-64	Pot-32	Pot-32
Size A.W.G.....	18	18	16
No. of Strands.....	41	41	65
Size Wire.....	34	34	34
Approx. O.D.....in.	.230x.125	.295x.155	.315x.170
Current Carrying Cap.amps.	7	7	10
Approx. Wt. per 1000 Ft.lb.	24	34	42
Insulation Thickness...in.	3/64	3/64	3/64

## Type SVT Whitney Blake Light Duty Plastite Cord

Maximum Voltage Rating, 300 Volts  
Approved by Underwriters' Laboratories



For vacuum cleaners, fans, and food mixers.

Made of soft annealed No. 34 bare copper stranded conductors, Plastite insulation, twisted with fillers, cotton wind, and Plastite jacket.

Color: black.

Put up in 250-foot coils or factory lengths on non-returnable reels.

Size A.W.G.....	18
No. of Strands.....	41
Size Wire.....	34
Approx. O.D.....in.	.250
Current Carrying Capacity.....amps.	7
Insulation Thickness.....in.	1/64
Approx. Weight per 1000 Ft.....lb.	30

## Type SJT Whitney Blake Medium Duty Plastite Cord

Maximum Voltage Rating, 300 Volts  
Approved by Underwriters' Laboratories



Used for drills, grinders, portable tools, washing machines, refrigerators.

Made of soft annealed No. 34 bare copper stranded conductors, plastite insulation, twisted with fillers, cotton braid or wrap, plastite jacket.

Color: black.

Put up in 250-foot coils or factory lengths in non-returnable reels.

Size A.W.G.	No. of Conductors	No. and Size of Strands	Approx. O.D. Inches	Current Carrying Capacity Amperes	Insulation Thickness Inches	Approx. Wt. Lb. per 1000 Feet
18	2	41-34	.305	7	3/64	42
16	2	65-34	.330	10	3/64	56
18	3	41-34	.330	7	3/64	60
16	3	65-34	.360	10	3/64	79
18	4	41-34	.360	7	3/64	77
16	4	65-34	.390	10	3/64	102

## Type ST Whitney Blake Heavy Duty Plastite Cord

Maximum Voltage Rating, 600 Volts  
Approved by Underwriters' Laboratories



Used for portable tools, conveyors, bus heaters, floor Sanders, etc.

Made of soft annealed bare copper stranded conductors, Plastite insulation, twisted with fillers, cotton braid or wrap, Plastite jacket. Color: black.

Put up in 250-foot coils or factory lengths on non-returnable reels.

Size A.W.G.	No. of Conductors	No. and Size of Strands	Approx. O.D. Inches	Current Carrying Capacity Amperes	Insulation Thickness Inches	Approx. Wt. Lb. per 1000 Feet
18	2	41-34	.390	7	3/64	73
16	2	65-34	.405	10	3/64	83
14	2	41-30	.530	15	3/64	142
12	2	65-30	.600	20	3/64	182
10	2	104-30	.640	25	3/64	222
18	3	41-34	.405	7	3/64	85
16	3	65-34	.430	10	3/64	95
14	3	41-30	.560	15	3/64	160
12	3	65-30	.635	20	3/64	218
10	3	104-30	.690	25	3/64	303

*Whitney Blake*

### CUSTOM BUILT CORD SETS

The Cord Set Department  
of the

Whitney Blake Company  
is equipped for the fabrication of  
a varied line of  
Cord Sets  
built to customers specifications





**Type HPD Whitney Blake Heater Cord**

3000 Cycle

Approved by Underwriters' Laboratories



Maximum Voltage Rating, 300 Volts

For flat irons, toasters, coffee brewers, heating pads, waffle irons, roasters, soldering irons, heaters, griddles, grills, etc.

Made with flexible stranded copper conductors, special cotton separator,  $\frac{1}{4}$ -inch unvulcanized rubber insulation, long fiber fireproof asbestos covering on each conductor, and a braid of rayon, or glazed cotton, or long wear twine applied over the twisted conductors.

Put up in 250-foot coils or, where quantity warrants, in factory lengths on reels.

No.....	18	17	16	14
No. of Strands.....	41	52	65	104
Size Wire.....	34	34	34	34
Approx. O.D.....				
Glazed Cotton.....in.	.275	.285	.300	.345
Twine.....in.	.315	.325	.340	.375
Current Carrying Capacity.....amps.	10	12½	15	20
Approx. Wt. per 1000 Ft.				
Glazed Cotton.....lb.	31	36	40	56
Twine.....lb.	35	40	46	60

10,000 Cycle

Approved by Underwriters' Laboratories

Maximum Voltage Rating, 300 Volts

Similar to 3000 cycle type but has more flexibility and longer flex life.

Put up in 250-foot coils or, where quantity warrants, in factory lengths on reels.

Size A.W.G.....	18	17	16
No. of Strands.....	65	82	104
Size Wire.....	36	36	36
Approx. O.D.....			
Glazed Cotton.....in.	.275	.285	.300
Twine.....in.	.315	.325	.340
Current Carrying Capacity.....amps.	10	12	15
Approx. Wt. per 1000 Ft.			
Glazed Cotton.....lb.	31	36	40
Twine.....lb.	35	40	46

**Type HSJ Whitney Blake Rubber Sheathed Heater Cord**

3000 Cycle—Approved by Underwriters' Laboratories



For applications requiring a moisture-proof heater cord, such as soldering irons, glue pots, permanent wave machines, tire vulcanizers, etc. Maximum voltage rating, 300 volts.

Made with flexible stranded copper conductors, special cotton separator,  $\frac{1}{4}$ -inch vulcanized rubber insulation, long fiber asbestos covering on each conductor, soft cotton braid over the twisted conductors, and 40 per cent rubber jacket overall.

Put up in 250-foot coils or, where quantity warrants, in factory lengths on reels.

Size A.W.G.....	18	16	14
No. of Strands.....	41	65	104
Size Wire.....	34	34	34
Approx. O.D.....in.	.295	.310	.335
Current Carrying Capacity.....amps.	10	15	20
Approx. Weight per 1000 Ft.....lb.	46	55	75

**Whitney Blake Thermoprene Locomotive Headlight Wire**

Available in two types. The first type has a  $\frac{3}{4}$ -inch wall of heat resistant rubber insulation; in this respect it resembles the old style locomotive headlight wire. The second type has a  $\frac{1}{2}$ -inch wall of heat resistant rubber insulation. Both types have a substantial Neoprene jacket overall.

The I.C.C. insulation resistance requirements for cab signal equipment installations are stringent and one railroad's specifications for the wire requires an insulation resistance of 5630 megohms per 1000 feet. Whitney Blake Neoprene jacketed type with the  $\frac{3}{4}$ -inch wall of heat resistant rubber has an insulation resistance of over twice this while the type with a  $\frac{1}{2}$ -inch wall exceeded the specification requirements by 60 per cent.

Cab signal equipment wiring is exposed, at times, to rather high temperatures; at the same time, it may come in contact with oil, and frequently becomes wet from rain, melted snow, fog, or condensed steam. Due to the products of combustion, this moisture on the wire is quite likely to become acidified. Laboratory tests, under simulated service conditions, showed that the Neoprene jacketed locomotive headlight wire withstood the harmful effects of these conditions after samples of the old style wire had failed.

Available in the following sizes:

**No. 14 A.W.G.** single conductor, 19 strands tinned copper,  $\frac{3}{4}$ -inch wall, 0.025-inch Neoprene jacket; 0.226-inch outside diameter. Cat. No. 14LH- $\frac{3}{4}$

**No. 14 A.W.G.** single conductor, 19 strands tinned copper,  $\frac{1}{2}$ -inch wall, 0.025-inch Neoprene jacket; 0.195-inch outside diameter. Cat. No. 14LH- $\frac{1}{2}$

**No. 12 A.W.G.** single conductor, 19 strands tinned copper,  $\frac{3}{4}$ -inch wall, 0.025-inch Neoprene jacket; 0.245-inch outside diameter. Cat. No. 12LH- $\frac{3}{4}$

**Deltabeston Flexible Cord**

Type AFS

(Table YK-8290)



Made with flexible conductors and a tough 40 per cent overall rubber jacket which enables it to withstand severe mechanical abuse. Recommended for use as a portable cord where the individual conductors are in direct contact with the heating element of heating devices.

Due to its construction, this flexible cord is moisture-proof and heat-resisting.

Size A.W.G.	Stranding	2-Conductor		Rubber Jacket Inches	*Overall Diameter Inches
		Felted Asbestos Inches			
18	16/.010	.032		.0625	.390
16	26/.010	.032		.0625	.405
14	41/.010	.032		.0781	.460
12	65/.010	.047		.0781	.620
<b>3-Conductor</b>					
18	16/.010	.032		.0625	.405
16	26/.010	.032		.0625	.430
14	41/.010	.032		.0781	.480
12	65/.010	.047		.0781	.635

Type AFSJ

(Table YK-8289)

Similar in construction to Type AFS cord above, except that it has a lighter overall rubber jacket. Especially suitable for use as a flexible cord for home appliances and small portable tools.

Moisture-proof and heat-resisting.

Size A.W.G.	Stranding	2-Conductor		Rubber Jacket Inches	*Overall Diameter Inches
		Felted Asbestos Inches			
18	16/.010	.032		.032	.300
16	26/.010	.032		.032	.325
<b>3-Conductor</b>					
18	16/.010	.032		.032	.330
16	26/.010	.032		.032	.355

\*Maximum and minimum not over  $\pm 5\%$  from normal.



**Type AVA Deltabeston Switchboard Wire**Approved by Underwriters' Laboratories, Inc.  
600 Volts**Table YK-3160 (Solid)**  
Construction of Sizes 18-8**Table YK-3260 (Stranded)**  
Construction of Sizes 6 and Larger

Recommended for switchboard and general conduit wiring where flame-proof and moisture-resisting qualities are desired.

Resists flame, heat, moisture, oil, grease, and corrosive vapors. Maximum copper temperature, 110 C. (230 F.).

Insulated with felt asbestos and varnished cambric insert, asbestos braid. Black or white finish.

Available with solid copper or stranded copper conductor.

**Solid Conductor—(Table YK-3160)**

Size A.W.G.	Stranding	*Nom. O.D. In.	Dielectric Test Voltage Kv.	STD. SHIP. LGTH. Ft. Coils Reels	Wt. Lb. per 1000 Feet
0000	.....	.705	3.0	500	800
000	.....	.655	3.0	500	657
00	.....	.610	3.0	500	543
0	.....	.570	3.0	500	422
1	.....	.535	3.0	500	348
2	.....	.480	3.0	500	279
3	.....	.455	3.0	500	231
4	.....	.430	3.0	500	193
6	.....	.385	3.0	500	138
8	.....	.310	2.5	500	85
10	.....	.285	2.5	500	59
12	.....	.265	2.5	500	45
14	.....	.250	2.5	500	36
16	.....	.235	2.5	500	29
18	.....	.225	2.5	500	25

**Stranded Conductor—(Table YK-3260)**

Size A.W.G.	Stranding	*Nom. Diam. Inches	Dielectric Test Voltage Kv.	STD. SHIP. LGTH. Ft. Coils Reels	Wt. Lb. per 1000 Feet
8	7/.0486	.330	2.5	500	85
10	7/.0385	.300	2.5	500	59
12	7/.0305	.275	2.5	500	45
14	7/.0242	.255	2.5	500	36

NOTE. For Type AVA boiler room wire in sizes 6 A.W.G. stranded and larger, use Table YK-2250 power cable.

**Type AVB Deltabeston Switchboard Wire**Approved by Underwriters' Laboratories, Inc.  
600 Volts**Solid Conductor**

Recommended for wiring switchboards and all other types of control apparatus. Approved for 90°C. (194°F.) service.

Will resist heat, flame, oil, and corrosive vapors.

Insulated with varnished cambric and felted asbestos. Overall cotton braid. Dark gray flame-proof finish. Other colors can be furnished upon request.

Available with solid tinned copper conductor or stranded tinned copper conductor.

**Solid Conductor—(Table YK-4161)**

Size A.W.G.	Concentric Stranding	*Nom. Diam. Inches	Dielectric Test Voltage Kv.	STD. SHIP. LGTH. Ft. Coils Reels	Wt. Lb. per 1000 Feet
0000	.....	.665	4.0	500	800
000	.....	.615	4.0	500	650
00	.....	.570	4.0	500	530
0	.....	.530	4.0	500	435
1	.....	.495	4.0	500	365
2	.....	.465	4.0	500	300
4	.....	.410	4.0	500	210
6	.....	.370	4.0	500	155
8	.....	.270	3.0	500	84
10	.....	.245	3.0	500	61
12	.....	.225	3.0	500	44
14	.....	.205	3.0	500	34
16	.....	.195	3.0	500	25
18	.....	.180	3.0	500	20

**Stranded Conductor—(Table YK-4261)**

Size A.W.G.	Concentric Stranding	*Nom. Diam. Inches	Dielectric Test Voltage Kv.	STD. SHIP. LGTH. Ft. Coils Reels	Wt. Lb. per 1000 Feet
0000	19/.1055	.735	4.0	500	835
000	19/.0940	.675	4.0	500	675
00	19/.0837	.625	4.0	500	555
0	19/.0745	.580	4.0	500	460
1	19/.0664	.540	4.0	500	380
2	7/.0974	.500	4.0	500	315
4	7/.0772	.440	4.0	500	225
6	7/.0612	.390	4.0	500	165
8	7/.0486	.290	3.0	500	88
10	7/.0385	.260	3.0	500	63
12	7/.0305	.235	3.0	500	49
14	7/.0242	.215	3.0	500	36
16	7/.0193	.200	3.0	500	26
18	7/.0151	.185	3.0	500	21

**Deltabeston Flamenol and Asbestos Switchboard Wire**

Approved by Underwriters' Laboratories, Inc.

600 Volts

**Solid Conductor**

Recommended for wiring switchboards and all other types of control apparatus. Approved for 90°C. (194°F.) service. Resists heat, flame, oil and corrosive vapors.

Insulated with flamenol and felted asbestos. Cotton braid. Dark gray flame-proof finish. Available with solid tinned copper conductor or stranded tinned copper conductor.

**Solid Conductor—(Table YK-4180)**

Size A.W.G.	Concentric Stranding	*Nom. Diam. Inches	Dielectric Test Voltage Kv.	STD. SHIP. LGTH. Ft. Coils Reels	Wt. Lb. per 1000 Feet
18	.....	.160	3.0	500	16.2
16	.....	.170	3.0	500	20.1
14	.....	.185	3.0	500	25.8
12	.....	.200	3.0	500	35.4
10	.....	.220	3.0	500	49.4
8	.....	.250	3.0	500	71.1
6	.....	.315	4.0	500	119.0
4	.....	.360	4.0	500	173.0

**Stranded Conductor—(Table YK-4280)**

Size A.W.G.	Concentric Stranding	*Nom. Diam. Inches	Dielectric Test Voltage Kv.	STD. SHIP. LGTH. Ft. Coils Reels	Wt. Lb. per 1000 Feet
18	7/.0151	.165	3.0	500	17.1
16	7/.0193	.175	3.0	500	21.5
14	7/.0242	.190	3.0	500	27.6
12	7/.0305	.210	3.0	500	36.5
10	7/.0385	.240	3.0	500	51.7
8	7/.0486	.270	3.0	500	74.8
6	7/.0612	.340	4.0	500	122.0
4	7/.0772	.390	4.0	500	178.0

\*Subject to  $\pm 5\%$  tolerance.



**Deltabeston Range Wire**

(Table YK-6199 Solid)

(Table YK-6299 Stranded)

300 Volts



Meets the requirements of modern range manufacturers.

Consists of copper conductor, cellulose acetate wrap, 0.030-inch felted, impregnated asbestos insulation saturated with a moisture and heat-resistant compound.

Available colors; black, white, blue, yellow, gray, green, and red.

**Solid Conductor—Table YK-6199**

Size A.W.G.	Stranding	*Nom. O.D. In.	Diam. Bare Wire In.	—STD. PKG., FEET—	Wt. Lb. per 1000 Feet
				Coils Metal Spools Reels	
8	.....	.194	.128	1000	2500 64
10	.....	.168	.102	1000	2500 44
12	.....	.147	.081	1000	2500 30
14	.....	.130	.064	1000	2000 21
16	.....	.117	.051	1000	2500 16
18	.....	.106	.040	1000	2500 12
20	.....	.098	.032	1000	2500 8

**Flexible Stranded Conductor—Table YK-6299**

Size A.W.G.	Stranding	*Nom. O.D. In.	Diam. Bare Wire In.	—STD. PKG., FEET—	Wt. Lb. per 1000 Feet
				Coils Metal Spools Reels	
8	165/.010	.217	.151	1000	2500 70
10	105/.010	.186	.120	1000	2500 46
12	65/.010	.161	.095	1000	2500 32
14	41/.010	.141	.075	1000	2000 23
16	26/.010	.125	.059	1000	2500 16
18	16/.010	.111	.045	1000	2500 12
20	10/.010	.106	.040	1000	2500 8

**Deltabeston Appliance Lead Wire**

300 Volts

(Table YK-6293)



For use in wiring ranges between the connection block and the switches.

Solid copper conductor. Varnished cambric plain asbestos insulation.

Maximum operating temperature is 100°C. (212°F.).

Available colors; black, white, red, gray, blue, yellow, and green.

Size A.W.G.	*Nom. O.D. In.	Bare Wire Diam. In.	—STD. PKG., FT.—	Wt. Lb. per 1000 Feet
			Coils Reels	
4	.328	.204	1000	158
6	.286	.162	1000	106
8	.236	.128	1000	68
10	.210	.102	1000	50
12	.189	.081	1000	34
14	.172	.064	1000	25
16	.159	.051	1000	19
18	.148	.040	1000	15

**Deltabeston Appliance Hinge Wire**

300 Volts

(Table YK-6289)



For use in flexible hinges such as are common in conventional waffle irons.

Conductor, extra flexible nickel bunched strands; felted asbestos insulation.

Maximum conductor temperature, 200°C. (392°F.).

Size A.W.G.	18
Stranding	41/34
Bare Wire Diameter	.045 inches
*Diameter	.109 inches
Standard Packages:	
Coils	feet 1000
Metal Spools	feet 2500
Reels	feet 5000

\*Subject to 5 per cent tolerance.

**Deltabeston Appliance Lead Wire**

300 Volts

**Solid Conductor**

MOISTURE-RESISTING INSULATION.—Recommended for wiring of electric ranges, stoves, and other electrical appliances where both heat and moisture resistance is desirable.

Consists of a highly compressed covering of felted asbestos which contains a moisture and heat resistant wax. The insulation is moisture-resisting but will smoke at approximately 300°F. Available with copper or nickel conductors. Nickel conductors are recommended when the conductor temperatures exceed 150°C. (302°F).

Standard colors; black, white, red, gray, or blue.

Can be furnished in a 3-conductor assembly, if desired. A 3-conductor range cable may be found advantageous for wiring heating devices such as electric ranges, ovens, or furnaces where a 3-heat switch controls the heating units.

SMOKELESS INSULATION.—For wiring of electrical appliances where high temperature with a minimum of moisture must be met, and a non-smoking insulation is essential.

Consists of a highly compressed covering of felted purified asbestos which contains less organic material than any other type of electrical insulation. This type is smokeless but will not resist moisture. Available with copper or nickel conductors. Nickel conductors are recommended when the conductor temperatures exceed 150°C. (302°F.).

Available in sizes A.W.G. 8 to 20.

Standard colors; black, white, red, gray, or blue.

**Solid Conductor**

With .032-Inch Insulation

Table YK-6187 Copper, Smokeless  
Table YK-6177 Copper, Moisture Resistant  
Table YK-6176 Nickel, Smokeless  
Table YK-6184 Nickel, Moisture Resistant

Size A.W.G.	Stranding	Nom. O.D. In.	Diam. Bare Wire In.	—STD. PKG., FEET—	Wt. Lb. per 1000 Feet
				Coils Metal Spools Reels	
8	.....	.192	.128	1000	2500 60
10	.....	.166	.102	1000	2500 40
12	.....	.145	.081	1000	2500 27
14	.....	.128	.064	1000	2000 19
16	.....	.115	.051	1000	2500 13
18	.....	.104	.040	1000	2500 10
20	.....	.096	.032	1000	2500 7

With .040-Inch Insulation

Table YK-6175 Copper, Smokeless  
Table YK-6179 Copper, Moisture Resistant  
Table YK-6178 Nickel, Smokeless  
Table YK-6185 Nickel, Moisture Resistant

Size A.W.G.	Stranding	Nom. O.D. In.	Diam. Bare Wire In.	—STD. PKG., FEET—	Wt. Lb. per 1000 Feet
				Coils Metal Spools Reels	
8	.....	.208	.128	1000	2500 63
10	.....	.182	.102	1000	2500 43
12	.....	.161	.081	1000	2500 30
14	.....	.144	.064	1000	2000 21
16	.....	.131	.051	1000	2000 15
18	.....	.120	.040	1000	2500 12
20	.....	.112	.032	1000	2500 9

**Flexible Stranded Conductor**

With .032-Inch Insulation

Table YK-6287 Copper, Smokeless  
Table YK-6277 Copper, Moisture Resistant  
Table YK-6276 Nickel, Smokeless  
Table YK-6284 Nickel, Moisture Resistant

Size A.W.G.	Stranding	Nom. O.D. In.	Diam. Bare Wire In.	—STD. PKG., FEET—	Wt. Lb. per 1000 Feet
				Coils Metal Spools Reels	
8	165/.010	.215	.151	1000	2500 65
10	105/.010	.184	.120	1000	2500 43
12	65/.010	.159	.095	1000	2500 29
14	41/.010	.139	.075	1000	2000 20
16	26/.010	.123	.059	1000	2500 14
18	16/.010	.109	.045	1000	2500 10
20	10/.010	.104	.040	1000	2500 8

With .040-Inch Insulation

Table YK-6275 Copper, Smokeless  
Table YK-6279 Copper, Moisture Resistant  
Table YK-6278 Nickel, Smokeless  
Table YK-6285 Nickel, Moisture Resistant

Size A.W.G.	Stranding	Nom. O.D. In.	Diam. Bare Wire In.	—STD. PKG., FEET—	Wt. Lb. per 1000 Feet
				Coils Metal Spools Reels	
8	165/.010	.231	.151	1000	2500 68
10	105/.010	.200	.120	1000	2500 46
12	65/.010	.175	.095	1000	2500 31
14	41/.010	.155	.075	1000	2000 22
16	26/.010	.139	.059	1000	2000 16
18	16/.010	.125	.045	1000	2500 12
20	10/.010	.120	.040	1000	2500 10

Subject to ±5 per cent tolerance.



**Deltabeston Appliance Grounding Wire**

(Table YK-6292)

For grounding any metallic part of electric range or stove to ground wire as required by N.E.C.

Stranded copper conductor; plain asbestos, moisture-resisting finish.

Available color; green. Other colors upon request.

Size A.W.G.	14
Stranding	7/.0242
*Nominal O.D.	.107
Bare Wire Diameter	.073
Standard Package:	
Coils	1000
Metal Spools	2500
Reels	5000
Weight per 1000 Feet	16

**Deltabeston Glass-Insulated Lead Wire**

300 Volts

(Tables YK-9101 and YK-9102 Solid)

(Tables YK-9201 and YK-9202 Stranded)

For small motor leads, electrical appliances or control units. Resistant to abrasion and moisture.

Consists of solid or stranded copper or nickel conductors, saturated felt asbestos, varnished glass yarn braid overall.

Maximum conductor temperature, 200°C. (392°F.). Nickel conductors are recommended where conductor temperature exceeds 150°C. (302°F.).

Black or white finish.

**Solid Conductor—Tables YK-9101 and YK-9102**

Size A.W.G.	Stranding	*Over- all Diam. In.	Bare Wire Diam. In.	Std. Pkg., Feet			Wt. Lb. per 1000 Feet
				Coils	Metal Spools	Reels	
8	.....	.190	.128	500	.....	2500	59
10	.....	.164	.102	500	.....	2500	38
12	.....	.143	.081	1000	.....	2500	26
14	.....	.126	.064	1000	2000	5000	17
16	.....	.113	.051	1000	2500	5000	12
18	.....	.102	.040	1000	2500	5000	9

**Stranded Conductor—Tables YK-9201 and YK-9202**

8	165/.010	.213	.151	500	.....	2500	61
10	105/.010	.182	.120	500	.....	2500	41
12	65/.010	.157	.095	1000	.....	2500	27
14	41/.010	.137	.075	1000	2000	5000	18
16	26/.010	.121	.059	1000	2500	5000	13
18	16/.010	.107	.045	1000	2500	5000	9

**Deltaglass Appliance Hinge Wire**

300 Volts

(Table YK-9200)

Recommended for flexible hinges as commonly found in conventional waffle irons.

Consists of stranded nickel conductor, impregnated glass fiber insulation, and varnished glass braid overall.

Maximum conductor temperature, 200°C.

Size A.W.G.	18
Stranding	41/.0063
*Nominal Diameter	.093
Bare Wire Diameter	.045
Standard Package:	
Coils	1000
Metal Spools	2500
Reels	5000

\*Subject to  $\pm 5$  per cent tolerance.

**Deltabeston Rheostat Wire**

Approved by Underwriters' Laboratories, Inc.  
600 Volts

**Solid Conductor**

Recommended for wiring rheostats, furnaces, oven connections, and similar installations where subjected to heat, flame, oil, grease, and corrosive vapors. Maximum copper temperature is 200°C. (392°F.).

Insulated with an impregnated wall of purified felted asbestos. Overall asbestos braid, white finish. Black finish can be furnished if required.

Available with solid or stranded copper conductors. The copper conductor is normally plain, however, tinned copper will be furnished if specified.

**Solid Conductor—(Table YK-4158)**

Size A.W.G.	Concentric Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	Std. Ship.		Wt. Lb. per 1000 Feet
				Coils	Reels	
0000	.....	.670	1.5	.....	500	765
000	.....	.620	1.5	.....	500	624
00	.....	.575	1.5	.....	500	481
0	.....	.535	1.5	.....	500	392
1	.....	.500	1.5	.....	500	322
2	.....	.430	1.5	.....	500	250
3	.....	.400	1.5	.....	500	205
4	.....	.375	1.5	.....	500	170
6	.....	.335	1.5	.....	500	118
8	.....	.280	1.5	500	1000	85
10	.....	.255	1.5	500	1000	60
12	.....	.235	1.5	500	1000	46
14	.....	.220	1.5	500	1000	36
16	.....	.205	1.5	500	1000	30
18	.....	.195	1.5	500	1000	26

**Stranded Conductor—(Table YK-4258)**

0000	19/.1055	.740	1.5	.....	500	765
000	19/.0940	.680	1.5	.....	500	624
00	19/.0837	.630	1.5	.....	500	481
0	19/.0745	.585	1.5	.....	500	392
1	19/.0664	.545	1.5	.....	500	322
2	7/.0974	.465	1.5	.....	500	250
4	7/.0772	.405	1.5	.....	500	170
6	7/.0612	.355	1.5	.....	500	118
8	7/.0486	.300	1.5	500	1000	85
10	7/.0385	.270	1.5	500	1000	60
12	7/.0305	.245	1.5	500	1000	46
14	7/.0242	.225	1.5	500	1000	36

\*Subject to  $\pm 5\%$  tolerance.

**Type AF Deltabeston Fixture Wire**

Plain Type — N.E.C. Standard  
300 Volts

This wire is approved for wiring all types of lighting fixtures designed for interior illumination, sun lamps, therapeutic devices, showcase wiring and all types of high-wattage units, especially where socket temperature exceeds 90°C. (194°F.). Flame, heat, and moisture-resisting felted asbestos insulation.

Standard colors: black or white. Other colors available on request at no extra charge in quantities of 1000 feet or more. All based on N.E.M.A. color specifications.

**Solid Copper Conductor—(Table YK-7172)**

Size A.W.G.	Stranding	*Nom. O.D. In.	STANDARD PACKAGES,			Wt. Lb. per 1000 Feet
			Spool	Coil	Reel	
10	.....	.196	.....	500	2500	41
12	.....	.175	.....	500	2500	27
14	.....	.128	500	.....	2500	19
16	.....	.115	500	.....	2500	13
18	.....	.104	500	.....	2500	10

**Stranded Copper Conductor—(Table YK-7272)**

10	105/30	.217	.....	500	2500	44
12	65/30	.191	.....	500	2500	30
14	41/30	.141	500	.....	2500	20
16	26/30	.123	500	.....	2500	14
18	16/30	.111	500	.....	2500	10

\*A tolerance of 5% over or under o.d. shown above is necessary due to process of manufacture.



**Deltabeston Resistor Cable**

600 Volts

**Table YK-4257 (Stranded)**

Recommended for connecting banks of resistors where moisture and heat are the outstanding conditions to be met.

Tinned copper, Flamenol tape, felted impregnated asbestos, asbestos braid, and heat and moisture-resisting finish.

**Solid Conductor—(Table YK-4157)**

Size A.W.G.	Stranding	*Over- all Diam. In.	Diam. on Copper In.	Dielectric Test Voltage Kv.	Std. Pkg.
0000	.....	.630	.460	5.0	1000
000	.....	.580	.410	5.0	1000
00	.....	.535	.365	5.0	1000
0	.....	.495	.325	5.0	1000
1	.....	.460	.289	5.0	1000
2	.....	.420	.258	5.0	1000
4	.....	.365	.204	5.0	1000
6	.....	.325	.162	5.0	1000
8	.....	.275	.128	5.0	1000
10	.....	.250	.102	5.0	1000
12	.....	.230	.081	5.0	1000
14	.....	.210	.064	5.0	1000

**Stranded Conductor—(Table YK-4257)**

Size A.W.G.	Stranding	*Over- all Diam. In.	Diam. on Copper In.	Dielectric Test Voltage Kv.	Std. Pkg.
0000	19/.1055	.700	.528	5.0	1000
000	19/.0940	.640	.470	5.0	1000
00	19/.0837	.590	.418	5.0	1000
0	19/.0745	.545	.373	5.0	1000
1	19/.0664	.500	.332	5.0	1000
2	7/.0974	.450	.292	5.0	1000
4	7/.0772	.390	.232	5.0	1000
6	7/.0612	.345	.184	5.0	1000
8	7/.0486	.290	.146	5.0	1000
10	7/.0385	.260	.116	5.0	1000
12	7/.0305	.240	.092	5.0	1000
14	7/.0242	.220	.073	5.0	1000
MCM					
250	37/.0822	.785	.575	5.0	500
500	37/.1162	1.025	.814	5.0	500
1000	61/.1280	1.360	1.152	5.0	500

\*Subject to  $\pm 5$  per cent tolerance.

**Deltabeston Thermoplastic Fixture Wire**

Thermoplastic-Insulated—600 Volts



For the wiring of fluorescent lamp ballasts. Resistant to heat, oil, acids, and alkalis.

Standard colors: black, white, red, and green.

Approved by Underwriters' Laboratories for use in fixtures at a maximum operating temperature of 80°C. (176°F.).

**Solid Conductor—(Table YK-7176)**

Size A.W.G.	Stranding	Over- all Diam. In.	Bare Wire Diam. In.	Insu- lation Thick. In.	Std. Ship. Lgth. in Ft. (Spool)	Wt. Lb. per 1000 Feet
16	.....	.117	.051	2/64	500, 2500	14
18	.....	.106	.040	2/64	500, 2500	10

**Stranded Conductor—(Table YK-7276)**

Size A.W.G.	Stranding	Over- all Diam. In.	Bare Wire Diam. In.	Insu- lation Thick. In.	Std. Ship. Lgth. in Ft. (Spool)	Wt. Lb. per 1000 Feet
16	26/.010	.125	.059	2/64	500, 2500	15
18	16/.010	.111	.047	2/64	500, 2500	11

**Ballast Lead—1000 Volts**

(Table YK-7277)



For wiring ballast leads for Slimline lamps and other fluorescent lighting fixtures that operate at 750 volts a.c.

Thermoplastic compound insulation is resistant to oil, heat, acids, and alkalis. Has additional protection in oil overall lacquered cotton braid.

Size A.W.G.	Stranding	Insu- lation Thick. In.	Cotton Braid Mils	Std. Pkg., Ft. Coils Reels	Wt. Lb. per 1000 Feet
10	105/.0100	47	15	1000 2000	55
12	65/.0100	47	15	1000 2500	40
14	41/.0100	47	15	1000 3000	30
16	65/.0063	47	15	1000 3500	24
16	26/.0100	47	15	1000 3500	24
18	65/.0050	47	15	1000 4000	19
18	16/.0100	47	15	1000 4000	19
20	10/.0100	47	15	1000 4000	16

**Type AVA Deltabeston Mine Locomotive Cable**

600 Volts

**(Table YK-2290)**

For rewiring of mining and industrial locomotives, trolley motor, and resistor leads, where extreme heat is present.

Resists the action of oil, gasoline, acids, and alkalis.

Flexible tinned copper conductor, impregnated felted asbestos varnished cambric, impregnated felted asbestos flame and moisture-resistant asbestos braid.

Size A.W.G.	Stranding	O.D. DIAM., Min.	In. Max.	Bare Wire Diam. In.	Wt. Lb. per 1000 Feet
0000	37/7/.0286	.785	.845	.600	875
000	37/7/.0255	.720	.775	.536	721
00	37/7/.0227	.663	.715	.477	592
0	37/7/.0202	.619	.665	.424	492
1	37/7/.0180	.574	.620	.378	415
2	19/7/.0224	.505	.545	.336	300
3	19/7/.0199	.468	.505	.299	248
4	19/7/.0177	.440	.475	.266	210
5	19/7/.0158	.396	.425	.237	173
6	19/7/.0141	.375	.405	.212	147
8	19/7/.0112	.332	.355	.168	104
10	105/.010	.289	.310	.120	76
12	65/.010	.272	.290	.095	59
14	41/.010	.252	.270	.075	45

**MCM**

Size A.W.G.	Stranding	O.D. DIAM., Min.	In. Max.	Bare Wire Diam. In.	Wt. Lb. per 1000 Feet
250	61/7/.0242	.914	.985	.653	1055
300	61/7/.0265	.976	1.055	.716	1233
350	61/7/.0286	1.031	1.115	.772	1404
400	61/7/.0306	1.085	1.175	.826	1586
450	61/7/.0325	1.135	1.225	.878	1764
500	61/7/.0342	1.179	1.270	.923	1935

\*Subject to  $\pm 5$  per cent tolerance.

**Type AVB Deltabeston Locomotive Headlight Wire**

(Table YK-8280)



Recommended for lighting service in locomotives where vibrations and excessive heat are major factors. Resists moisture, oil, and heat.

Insulated with felted asbestos and varnished cambric insert. Cotton braid. Black finish.

Size A.W.G.	12	14	16
Stranding.....	19/25	19/27	19/29
*Nominal O.D.....inches	.230	.210	.195
Bare Wire Diam.....inches	.090	.071	.056
Std. Shipping Lgth:			
Coils.....feet	500	500	500
Reels.....feet	1000	1000	1000
Weight per 1000 Feet.....lb.	45	33	27

**Type AVPD Deltabeston Locomotive Cab Cord**

(Table YK-8269)



Recommended for wiring locomotive cabs where heat is a factor. Circular cross section is obtained with jute fillers.

Insulated with varnished cambric and felted asbestos.

Has black asbestos braid overall.

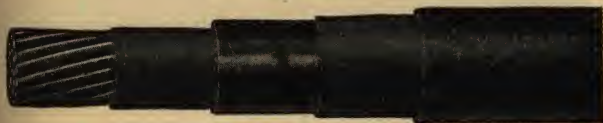
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Size A.W.G.	Stranding	*Nom. O.D. In.	Bare Wire Diam. In.	Std. Ship. Lgth., Ft. Coils Reels	Wt. Lb. per 1000 Feet
10	65/.0126	.490	.120	250 1000	130
12	65/.010	.445	.097	250 1000	95
14	41/.010	.365	.077	500 1000	65
16	26/.010	.330	.059	500 1000	51
18	16/.010	.305	.047	500 1000	42



**Deltabeston Power Cable**

Approved by Underwriters' Laboratories, Inc.  
(Table YK-2250)  
600 Volts



For general power wiring as used in boiler rooms, power plants and steel mills. The cable can be installed exposed or in conduit. Maximum copper temperature, 110°C. (230°F.).

Insulation consists of a layer of felted asbestos, wrapped with varnished cambric, a layer of felted asbestos, and then an asbestos braid. Flame, heat and moisture-resisting saturant and finish. Standard color of finish, black.

Size	Concentric Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP. (LGT. FEET) Coils	Reels	Wt. Lb. per 1000 Feet
1000000CM	61/.1280	1.465	4.0	...	500	3510
900000	61/.1215	1.405	4.0	...	500	3182
800000	61/.1145	1.345	4.0	...	500	2854
750000	61/.1109	1.310	4.0	...	500	2689
700000	61/.1071	1.275	4.0	...	500	2524
650000	61/.1032	1.240	4.0	...	500	2359
600000	61/.0992	1.205	4.0	...	500	2193
550000	61/.0950	1.165	4.0	...	500	2027
500000	37/.1162	1.125	4.0	...	500	1860
450000	37/.1103	1.085	4.0	...	500	1692
400000	37/.1040	1.040	4.0	...	500	1525
350000	37/.0973	0.995	4.0	...	500	1357
300000	37/.0900	0.940	4.0	...	500	1188
250000	37/.0822	0.885	4.0	...	500	1017
0000A.W.G.	19/.1055	0.780	3.0	...	1000	839
000	19/.0940	0.720	3.0	...	1000	690
00	19/.0837	0.670	3.0	...	1000	571
0	19/.0745	0.625	3.0	...	1000	476
1	19/.0664	0.585	3.0	...	1000	371
2	7/.0974	0.505	3.0	...	1000	287
3	7/.0867	0.470	3.0	...	1000	238
4	7/.0772	0.445	3.0	...	1000	198
6	7/.0612	0.395	3.0	...	1000	141
8	7/.0486	0.360	2.5	500	1000	100
10	7/.0385	0.330	2.5	500	1000	76
12	7/.0305	0.305	2.5	500	1000	59
14	7/.0242	0.285	2.5	500	1000	46
16	7/.0193	0.270	2.5	500	1000	39
18	7/.0151	0.255	2.5	500	1000	33

**Deltabeston Power Cable**

Approved by Underwriters' Laboratories, Inc.  
(Table YK-2252)  
600 Volts



Recommended for exposed installations with high operating temperature. Will give permanent, uninterrupted service under constant high temperature. Maximum copper temperature 125°C. (257°F.).

Felted asbestos insulation, asbestos braid. Flame, heat and moisture-resisting saturant and finish. Standard color of finish, black.

Size	Concentric Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP. (LGT. FEET) Coils	Reels	Wt. Lb. per 1000 Feet
1000000CM	61/.1280	1.485	1.5	...	500	3456
900000	61/.1215	1.425	1.5	...	500	3126
800000	61/.1145	1.365	1.5	...	500	2796
750000	61/.1109	1.330	1.5	...	500	2631
700000	61/.1071	1.295	1.5	...	500	2470
650000	61/.1032	1.260	1.5	...	500	2307
600000	61/.0992	1.225	1.5	...	500	2142
550000	61/.0950	1.185	1.5	...	500	1977
500000	37/.1162	1.145	1.5	...	500	1812
450000	37/.1103	1.105	1.5	...	500	1647
400000	37/.1040	1.060	1.5	...	500	1482
350000	37/.0973	1.015	1.5	...	500	1317
300000	37/.0900	0.960	1.5	...	500	1219
250000	37/.0822	0.905	1.5	...	500	982
0000A.W.G.	19/.1055	0.800	1.5	...	1000	819
000	19/.0940	0.740	1.5	...	1000	672
00	19/.0837	0.690	1.5	...	1000	555
0	19/.0745	0.645	1.5	...	1000	462
1	19/.0664	0.605	1.5	...	1000	388
2	7/.0974	0.505	1.5	...	1000	274
3	7/.0867	0.470	1.5	...	1000	227
4	7/.0772	0.445	1.5	...	1000	188
6	7/.0612	0.395	1.5	500	1000	132
8	7/.0486	0.320	1.5	500	1000	87
10	7/.0385	0.290	1.5	500	1000	63
12	7/.0305	0.265	1.5	500	1000	48
14	7/.0242	0.245	1.5	500	1000	38
16	7/.0193	0.230	1.5	500	1000	31
18	7/.0151	0.215	1.5	500	1000	26

**Deltabeston Station Control Cable**

Approved by Underwriters' Laboratories, Inc.  
600 Volts



Recommended for connection of control on signal circuits, either exposed or in conduit, where the operating temperature is too severe for other insulations. Maximum copper temperature 110°C. (230°F.).

Each tinned copper conductor insulated with felted asbestos and varnished cambric insert. Overall asbestos braid. Flame, heat and moisture-resisting saturant and finish. Standard color of finish, black.

Standard shipping lengths as specified.

\*Subject to  $\pm 5\%$  tolerance.

**Nominal Size A.W.G. 9-19/32**  
(Table YK-2267)

No. of Conductors	*Nom. O.D. Inches	Wt. Lb. per 1000 Feet
1	.320	81
2	.640	195
3	.680	260
4	.745	325
5	.820	390
6	.900	495
7	.900	505
8	.980	580
9	1.070	660
10	1.160	700
11	1.200	805
12	1.200	815
13	1.265	930
14	1.265	940
15	1.340	1040
16	1.340	1050
17	1.420	1200
18	1.420	1215
19	1.420	1225

**Size A.W.G. 12-19-25**  
(Table YK-2268)

No. of Conductors	*Nom. O.D. Inches	Wt. Lb. per 1000 Feet
1	.285	56
2	.565	115
3	.600	190
4	.655	225
5	.720	265
6	.790	330
7	.790	335
8	.855	385
9	.925	435
10	1.010	455
11	1.045	520
12	1.045	525
13	1.100	590
14	1.100	595
15	1.165	660
16	1.165	665
17	1.235	755
18	1.235	765
19	1.235	770

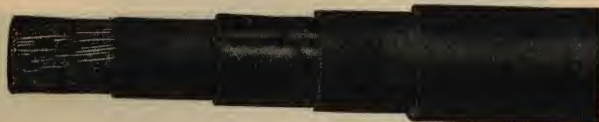


**Deltabeston Apparatus or Motor Lead Cable**

Approved by Underwriters' Laboratories, Inc.

(Table YK-2251)

600 Volts



Recommended where flexibility is desired. Used for wiring all low-voltage apparatus in power plants, mine locomotives and any other installation, either exposed or in conduit, where the operating temperature is too severe for other insulations. Maximum copper temperature rating is 110°C. (230°F.). Insulation consists of a layer of felted asbestos, wrapped with varnished cambric felted asbestos, and then an asbestos braid. Standard color of finish, black.

Size	Rope Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP. (LGTH., FT.) Coils	Reels	Wt. Lb. per 1000 Feet
1000000CM	427/.0480	1.585	4.0	...	500	3628
900000	427/.0453	1.515	4.0	...	500	3294
800000	427/.0427	1.445	4.0	...	500	2961
750000	427/.0420	1.425	4.0	...	500	2794
700000	427/.0403	1.380	4.0	...	500	2622
600000	427/.0380	1.320	4.0	...	500	2289
500000	427/.0342	1.215	4.0	...	500	1935
450000	427/.0325	1.170	4.0	...	500	1764
400000	427/.0306	1.120	4.0	...	500	1586
350000	427/.0286	1.065	4.0	...	500	1404
300000	427/.0265	1.010	4.0	...	500	1233
250000	427/.0242	.945	4.0	...	500	1055
0000A.W.G.	259/.0286	.840	3.0	...	1000	871
000	259/.0255	.775	3.0	...	1000	725
00	259/.0227	.720	3.0	...	1000	592
0	259/.0202	.665	3.0	...	1000	492
1	259/.0180	.620	3.0	...	1000	415
2	133/.0224	.540	3.0	...	1000	300
3	133/.0199	.500	3.0	...	1000	248
4	133/.0177	.470	3.0	...	1000	210
5	133/.0158	.440	3.0	...	1000	173
6	133/.0141	.415	3.0	500	1000	147
8	133/.0112	.370	2.5	500	1000	104
†10	105/.010	.320	2.5	500	1000	76
†12	65/.010	.295	2.5	500	1000	59
†14	41/.010	.275	2.5	500	1000	45
†16	26/.010	.260	2.5	500	1000	38
†18	16/.010	.245	2.5	500	1000	32

\*Subject to ±5% tolerance. †Bunched strands.

**Deltabeston Boiler Room Wire**

Approved by Underwriters' Laboratories, Inc.

600 Volts



Construction of Sizes 8-18 A.W.G.

Recommended for general conduit and boiler room wiring where heat and moisture-resisting qualities are essential. Typical applications are for lighting and control circuits. Maximum copper temperature, 110°C. (230°F.).

Standard color of finish, black. White also available.

Available in solid or stranded copper conductor.

Standard Shipping Length: size A.W.G. 0000 to 6, in 500-ft. reels; size A.W.G. 8 to 18, in 500-ft. coils and 1000-ft. reels.

**Solid Copper Conductor (Table YK-3160)**

Size A.W.G.	Concentric Stranding	*Nom. O.D. In.	Dielectric Test Voltage Kv.	STD. SHIP. (LGTH., FT.) Coils	Reels	Wt. Lb. per 1000 Feet
0000	.....	0.700	3.0	...	500	800
000	.....	0.650	3.0	...	500	657
00	.....	0.605	3.0	...	500	543
0	.....	0.565	3.0	...	500	422
1	.....	0.530	3.0	...	500	348
2	.....	0.480	3.0	...	500	279
4	.....	0.425	3.0	...	500	193
6	.....	0.385	3.0	...	500	138
8	.....	0.310	2.5	500	1000	85
10	.....	0.285	2.5	500	1000	59
12	.....	0.265	2.5	500	1000	45
14	.....	0.245	2.5	500	1000	36
16	.....	0.235	2.5	500	1000	29
18	.....	0.225	2.5	500	1000	25

**Stranded Copper Conductor (Table YK-3260)**

Size A.W.G.	Concentric Stranding	*Nom. O.D. In.	Dielectric Test Voltage Kv.	STD. SHIP. (LGTH., FT.) Coils	Reels	Wt. Lb. per 1000 Feet
8	.....	0.330	2.5	500	1000	85
10	.....	0.300	2.5	500	1000	59
12	.....	0.275	2.5	500	1000	45
14	.....	0.255	2.5	500	1000	36

\*Subject to ±5 per cent tolerance.

**Deltabeston All-Asbestos Apparatus Cable**

Approved by Underwriters' Laboratories, Inc.

300 Volts



Recommended for the wiring of motion picture projectors, stage lights, searchlights, floodlights, spotlights, all types of electric cranes and controllers, and all other apparatus where the wires are subjected to high temperatures. Maximum copper temperature is 200°C. (392°F.).

Insulated with a wall of felted asbestos, finished with an overall asbestos braid. Flame and heat-resisting saturant and finish. Standard color of finish, white.

Available in two grades: flexible, and extra flexible.

**Extra Flexible Strand—(Table YK-2258)**

Size A.W.G.	Rope Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP. (LGTH., FT.) Coils	Reels	Wt. Lb. per 1000 Feet
0000	8512/.0050	856	1.0	...	500	815
000	6783/.0050	787	1.0	...	500	660
00	5292/.0050	719	1.0	...	500	535
0	4214/.0050	664	1.0	...	500	430
1	3330/.0050	585	1.0	...	500	340
2	2664/.0050	508	1.0	...	500	260
4	1672/.0050	435	1.0	...	500	175
6	1064/.0050	382	1.0	...	500	125
8	665/.0050	318	1.0	...	500	80
10	413/.0050	282	1.0	...	500	55
12	259/.0050	255	1.0	...	500	39
†14	105/.0063	227	1.0	500	1000	30
†16	65/.0063	211	1.0	500	1000	24
†18	41/.0063	198	1.0	500	1000	20

\*Subject to ±5% tolerance.

†Bunched strands.

**Flexible Strand—(Table YK-2257)**

Size A.W.G.	Rope Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP. (LGTH., FT.) Coils	Reels	Wt. Lb. per 1000 Feet
250000CM	427/.0242	863	1.0	...	500	1017
0000	259/.0286	810	1.0	...	500	745
000	259/.0255	746	1.0	...	500	596
00	259/.0227	687	1.0	...	500	483
0	259/.0202	634	1.0	...	500	388
1	259/.0180	588	1.0	...	500	318
2	133/.0224	506	1.0	...	500	259
4	133/.0177	436	1.0	...	500	175
6	133/.0141	382	1.0	...	500	109
8	133/.0112	318	1.0	...	1000	74
†10	105/.0100	270	1.0	...	1000	53
†12	65/.0100	245	1.0	500	1000	39
†14	41/.0100	225	1.0	500	1000	28
†16	26/.0100	209	1.0	500	1000	22
†18	16/.0100	195	1.0	500	1000	18



### Deltabeston Magnet Wire

#### Asbestos Insulated—Round Wire



All Deltabeston Magnet Wire is interchangeable for replacement of double cotton covered magnet wire, having the same uniform thickness or insulation.

#### Standard Finishes

**STANDARD BROWN W-E.** Flame and heat resisting varnish with a smooth waxy finish.

**STANDARD WHITE.** Bonded white asbestos designed for impregnation after coil is formed when it will absorb any insulating varnish.

**BLACK "A".** Asbestos fibre treated with compound having smooth, waxy finish.

#### Bare Conductor

Size A.W.G.	DIAMETER OVER ASBESTOS INSULATION, INCHES		LB ON STANDARD SHIPPING REEL		Wt., Lb. per 1000 Feet
	Maximum	Minimum	Min.	Max.	
0000	.4823	.4737	150	270	646.85
000	.4317	.4236	150	270	514.78
00	.3836	.3766	150	270	410.16
0	.3425	.3356	150	270	324.32
1	.3068	.3007	150	270	256.87
2	.2739	.2683	150	270	205.24
3	.2456	.2403	150	270	161.89
4	.2193	.2145	150	270	128.40
5	.1968	.1922	150	270	102.16
6	.1758	.1716	150	270	81.18
7	.1580	.1540	75	135	64.40
8	.1409	.1373	75	135	51.03
9	.1270	.1235	75	135	40.48
10	.1134	.1102	75	135	32.46
11	.1022	.0991	75	135	25.97
12	.0912	.0884	75	135	20.61
13	.0824	.0797	75	135	16.32
14	.0739	.0713	75	135	12.97
15	.0664	.0638	40	70	10.28
16	.0596	.0570	40	70	8.22
17	.0540	.0516	40	70	6.48
18	.0485	.0461	40	70	5.16
19	.0441	.0417	40	70	4.15
20	.0402	.0378	40	70	3.32
21	.0366	.0344	5	10	2.69
22	.0334	.0312	5	10	2.15
23	.0307	.0285	5	10	1.75
24	.0282	.0260	5	10	1.39
25	.0260	.0238	5	10	1.12

#### Enameled Conductor

Standard Enamel Magnet Wire finish with filled asbestos insulation over the enamel. Thickness equal to that of double cotton enamel insulated magnet wire.

Size A.W.G.	Nominal Diameter Over Enamel, Inches	DIAMETER OVER ENAMEL AND ASBESTOS, INCHES		WEIGHT POUNDS STANDARD SHIPPING REEL		Wt., Lb. per 1000 Feet
		Min.	Max.	Min.	Max.	
4	.207	.2168	.2222	150	270	128.40
5	.185	.1944	.1996	150	270	102.16
6	.165	.1738	.1786	150	270	81.18
7	.147	.1561	.1607	75	135	64.40
8	.131	.1392	.1434	75	135	51.03
9	.117	.1254	.1295	75	135	40.48
10	.104	.1121	.1159	75	135	32.46
11	.093	.1009	.1046	75	135	25.97
12	.083	.0901	.0935	75	135	20.61
13	.074	.0814	.0846	75	135	16.32
14	.066	.0730	.0761	75	135	12.97
15	.059	.0654	.0685	40	70	10.28
16	.053	.0585	.0616	40	70	8.22
17	.047	.0530	.0559	40	70	6.48
18	.042	.0474	.0503	40	70	5.16
19	.038	.0430	.0459	40	70	4.15
20	.034	.0390	.0419	40	70	3.32
21	.030	.0356	.0383	5	10	2.69
22	.027	.0324	.0350	5	10	2.15
23	.024	.0296	.0322	5	10	1.75
24	.021	.0271	.0296	5	10	1.39
25	.019	.0248	.0273	5	10	1.12

### Deltaglass Magnet Wire

#### Single Glass Insulated—Round Wire



#### Specifications for Single Glass Insulated Conductor

Size A.W.G.	DIAMETER OVER GLASS (INSULATION, INCHES)		WEIGHT POUNDS STANDARD SHIPPING REEL		Wt., Lb. per 1000 Feet
	Min.	Max.	Min.	Max.	
0000	.4627	.4693	150	270	642.41
000	.4125	.4186	150	270	511.15
00	.3680	.3736	150	270	406.91
0	.3278	.3335	150	270	321.76
1	.2928	.2977	150	270	254.57
2	.2613	.2659	150	270	203.40
3	.2332	.2375	150	270	160.24
4	.2085	.2124	150	270	127.04
5	.1860	.1897	150	270	100.92
6	.1662	.1698	150	270	80.22
7	.1486	.1520	75	135	63.53
8	.1327	.1359	75	135	50.41
9	.1188	.1219	75	135	39.93
10	.1064	.1094	75	135	32.04
11	.0952	.0981	75	135	25.42
12	.0856	.0882	75	135	20.27
13	.0766	.0794	75	135	16.12
14	.0678	.0704	75	135	12.74
15	.0608	.0634	40	70	10.17
16	.0545	.0571	40	70	8.08
17	.0491	.0515	40	70	6.46
18	.0441	.0465	40	70	5.13
19	.0397	.0421	40	70	4.09
20	.0358	.0382	40	70	3.27
21	.0324	.0346	5	10	2.62
22	.0292	.0314	5	10	2.08
23	.0265	.0287	5	10	1.68
24	.0240	.0262	5	10	1.34
25	.0218	.0240	5	10	1.07

#### Specifications for Single Enameled-Single Glass Insulated Conductor

Size A.W.G.	DIAMETER OVER ENAMEL (AND GLASS, INCHES)		WEIGHT POUNDS STANDARD SHIPPING REEL		Wt., Lb. per 1000 Feet
	Min.	Max.	Min.	Max.	
4	.2106	.2152	150	270	127.73
5	.1882	.1926	150	270	101.53
6	.1684	.1726	150	270	80.77
7	.1507	.1547	75	135	64.01
8	.1346	.1384	75	135	50.84
9	.1208	.1245	75	135	40.32
10	.1073	.1109	75	135	32.39
11	.0961	.0996	75	135	25.74
12	.0861	.0895	75	135	20.48
13	.0774	.0806	75	135	16.33
14	.0695	.0726	75	135	12.95
15	.0624	.0655	40	70	10.31
16	.0560	.0591	40	70	8.21
17	.0505	.0539	40	70	6.56
18	.0454	.0483	40	70	5.22
19	.0410	.0439	40	70	4.17
20	.0370	.0399	40	70	3.34
21	.0336	.0363	5	10	2.68
22	.0304	.0330	5	10	2.13
23	.0276	.0302	5	10	1.71
24	.0251	.0276	5	10	1.37
25	.0228	.0253	5	10	1.09



## Deltabeston Magnet Wire

## Square and Rectangular

Square or rectangular magnet wire can be furnished in practically any combination of width and thickness that is usually required in either asbestos or glass insulated, single or double wrapped.

## Square



Enameled conductor furnished in sizes 14 to 4 inclusive only.

Maximum and minimum averages may vary from nominal by not more than 10 per cent.

## Rectangular



The average of any 10 measurements over a 20-foot length must not exceed the maximum or be less than the minimum value.

Standard shipping reels, 150 pounds minimum; 275 pounds maximum net weight.

\*Subject to  $\pm 5$  per cent tolerance.

Roebing Square Magnet Wire  
Double Cotton Covered

Can be furnished in all sizes from No. 14 to No. 4/0 A.W.G. In computing the gage, diameter of round wire is comparable to thickness, bare wire side, of square wire. Circular mil area and weight of square wire is approximately 1.23 times that of round wire of the same diameter as thickness of square wire. Sizes smaller than No. 14 A.W.G. cannot be regularly procured owing to difficulty of winding. Prices upon application.

Size A.W.G.	Area in C.M.	Bare Wire Side Mils	Overall Side Mils	Resistance Ohms per 1000 Feet 68 F.	*TURNS Per Lineal Inch	Per Square Inch	WEIGHT, POUNDS *Per Cubic Inch	Per 1000 Feet
0000	260000	460.	481.	.039 8	2.08	4.32	.286	794.
000	206000	410.	431.	.050 3	2.32	5.38	.283	631.
00	164000	365.	386.	.063 3	2.59	6.71	.280	501.
0	130000	325.	346.	.079 8	2.89	8.35	.277	398.
1	103000	289.	310.	.101	3.23	10.4	.274	316.
2	81600	258.	279.	.127	3.58	12.9	.270	251.
3	64700	229.	250.	.160	4.00	16.0	.265	199.
4	51400	204.	225.	.202	4.44	19.8	.260	158.
5	40700	182.	203.	.255	4.93	24.3	.255	126.
6	32300	162.	183.	.321	5.46	29.9	.249	100.
7	25600	144.	165.	.405	6.06	36.7	.244	79.7
8	20300	129.	143.	.511	6.99	48.9	.256	62.7
9	16100	114.	128.	.644	7.81	61.0	.252	49.8
10	12800	102.	116.	.812	8.62	74.3	.246	39.6
11	10100	90.7	105.	1.02	9.52	90.7	.239	31.5
12	8030	80.8	94.8	1.29	10.6	111.	.232	25.1
13	6370	72.0	84.0	1.63	11.9	142.	.235	19.9
14	5050	64.1	76.1	2.05	13.1	173.	.228	15.8

\*No allowance has been made for winding losses.

## Roebing Rectangular Magnet Wire

Rectangular sizes have not, as yet, been standardized but can be supplied in sizes from .500 to .020 inches in thickness and from .500 to .044 inches in width. The regular insulation is double cotton wound.

Rectangular wire is not carried in stock, but made specially on order. Orders should not be for less than 200 pounds of any size. Prices will be quoted upon application.

## Roebing Round Enameled Magnet Wire

## Cotton Covered

Size A.W.G.	Overall Diameter Inches	Ohms Per Pound	Per Lineal Inch	Per Square Inch	WEIGHT, POUNDS Per Cubic Inch	Per 1000 Feet
8	.136	.0124	7.37	54.2	.229	50.7
9	.122	.0197	8.22	67.5	.227	40.3
10	.109	.0312	9.17	84.0	.224	32.0
11	.0980	.0496	10.2	104.	.221	25.4
12	.0880	.0786	11.4	129.	.218	20.2
13	.0790	.125	12.7	160.	.215	16.1
14	.0711	.198	14.1	198.	.211	12.8
15	.0640	.313	15.6	244.	.207	10.2
16	.0576	.496	17.4	301.	.203	8.09
17	.0520	.786	19.3	373.	.199	6.43
18	.0470	1.25	21.3	455.	.194	5.13
19	.0425	1.97	23.5	554.	.189	4.09
20	.0380	3.13	26.3	694.	.188	3.25
21	.0345	4.94	29.0	842.	.182	2.59
22	.0313	7.81	32.0	1020.	.176	2.07
23	.0284	12.3	35.3	1240.	.171	1.65
24	.0258	19.5	38.8	1500.	.165	1.32
25	.0236	30.7	42.4	1800.	.158	1.06
26	.0215	48.3	46.4	2160.	.152	.845
27	.0193	76.6	51.8	2680.	.150	.672
28	.0176	121.	56.7	3210.	.144	.539
29	.0162	189.	61.9	3830.	.138	.432
30	.0148	297.	67.4	4550.	.132	.347
31	.0137	464.	72.9	5310.	.124	.280
32	.0128	723.	78.4	6150.	.116	.227
33	.0118	1130.	85.0	7180.	.110	.184
34	.0110	1750.	91.0	8260.	.103	.149
35	.0102	2710.	99.0	9580.	.0969	.121
36	.0096	4160.	104.	10900.	.0902	.100

## Roebing Round Magnet Wire

## Single Cotton Covered

Size A.W.G.	DIAMETER, IN.— Bare Wire	Overall	Ohms Per Pound	Per Lineal Inch	Per Square Inch	WEIGHT, POUNDS Per Cubic Inch	Per 1000 Feet
0000	.460	.468	.0000762	2.14	4.57	.245	643.
000	.4096	.418	.000121	2.40	5.74	.244	510.
00	.3648	.373	.000192	2.68	7.19	.243	405.
0	.3249	.333	.000306	3.00	9.02	.242	321.
1	.2893	.297	.000486	3.36	11.3	.240	255.
2	.2576	.266	.000772	3.77	14.2	.239	202.
3	.2294	.237	.00123	4.21	17.7	.237	161.
4	.2043	.212	.00195	4.71	22.2	.236	128.
5	.1819	.190	.00310	5.27	27.7	.234	101.
6	.1620	.170	.00490	5.88	34.6	.232	80.4
7	.1443	.152	.00780	6.57	43.1	.229	63.9
8	.1285	.134	.0125	7.49	56.1	.226	50.4
9	.1144	.119	.0198	8.38	70.1	.224	40.0
10	.1019	.107	.0314	9.36	87.5	.222	31.8
11	.09074	.0957	.0499	10.5	109.	.220	25.3
12	.08081	.0858	.0792	11.7	136.	.227	20.1
13	.07196	.0770	.126	13.0	169.	.224	15.9
14	.06408	.0691	.199	14.5	210.	.221	12.7
15	.05707	.0621	.316	16.1	260.	.218	10.1
16	.05082	.0558	.500	17.9	321.	.214	8.01
17	.04526	.0503	.796	19.9	396.	.210	6.37
18	.04030	.0453	1.26	22.1	487.	.206	5.07
19	.03589	.0409	2.00	24.5	598.	.201	4.03
20	.03196	.0370	3.16	27.1	732.	.196	3.21
21	.02846	.0325	5.05	30.8	949.	.201	2.54
22	.02535	.0294	7.98	34.1	1160.	.196	2.02
23	.02257	.0266	12.6	37.6	1420.	.190	1.61
24	.02010	.0241	20.0	41.5	1720.	.184	1.29
25	.01790	.0219	31.6	45.7	2090.	.178	1.03
26	.01594	.0199	49.8	50.2	2520.	.172	.819
27	.01420	.0182	78.5	54.9	3020.	.165	.655
28	.01264	.0166	124.	60.1	3610.	.158	.525
29	.01126	.0153	195.	65.5	4290.	.150	.421
30	.01003	.0140	305.	71.3	5080.	.143	.338
31	.008928	.0129	479.	77.3	5980.	.136	.272
32	.007950	.0120	749.	83.7	7000.	.128	.219
33	.007080	.0111	1170.	90.3	8150.	.120	.177
34	.006305	.0103	1820.	97.1	9430.	.113	.144
35	.005615	.00961	2820.	104.	10800.	.105	.117
36	.005000	.00900	4350.	111.	12300.	.0980	.095



### Roebing Single Enameled Covered Magnet Wire

Size A.W.G.	Area in C.M.	Outside Diameter Mils	Ohms Per Pound	*TURNS		WEIGHT, POUNDS—	
				Per Lineal Inch	Per Square Inch	*Per Cubic Inch	Per 1000 Feet
14	4106.7	66.1	.201	15.1	229	.239	12.5
15	3256.8	59.0	.320	17.0	288	.238	9.95
16	2582.7	52.6	.508	19.0	361	.238	7.90
17	2048.2	47.0	.808	21.3	453	.237	6.27
18	1624.3	42.0	1.28	23.9	570	.236	4.97
19	1288.1	37.5	2.04	26.7	711	.234	3.95
20	1021.5	33.5	3.24	30.0	893	.233	3.13
21	810.1	30.0	5.14	33.4	1110	.231	2.49
22	642.5	26.8	8.17	37.4	1400	.230	1.98
23	509.5	23.9	13.0	41.9	1760	.229	1.57
24	404.0	21.3	20.6	47.0	2200	.229	1.14
25	320.4	19.1	32.8	52.4	2740	.226	.989
26	254.1	17.0	52.0	58.7	3440	.225	.784
27	201.5	15.3	82.6	65.4	4270	.222	.624
28	159.8	13.6	131.	73.8	5370	.222	.495
29	126.7	12.2	209.	82.2	6760	.221	.393
30	100.5	10.8	332.	92.3	8530	.221	.311
31	79.7	9.7	525.	103.	10600	.218	.248
32	63.2	8.8	833.	114.	13100	.214	.197
33	50.1	7.8	1330.	129.	16500	.215	.156
34	39.8	7.0	2100.	143.	20400	.211	.124
35	31.5	6.2	3340.	161.	25900	.212	.098
36	25.0	5.6	5290.	179.	31900	.208	.078
37	19.8	5.0	8440.	202.	40800	.211	.062
38	15.7	4.5	13400.	224.	50200	.206	.049
39	12.5	3.9	21300.	254.	64700	.210	.039
40	9.89	3.6	33800.	282.	79600	.206	.031

\*No allowances have been made for winding losses.

### Roebing Single Roever Covered Magnet Wire

Size A.W.G.	Area in C.M.	Outside Diameter Mils	Ohms Per Pound	*TURNS		WEIGHT, POUNDS—	
				Per Lineal Inch	Per Square Inch	*Per Cubic Inch	Per 1000 Feet
14	4106.7	66.1	.201	15.1	229	.239	12.5
15	3256.8	59.0	.320	17.0	288	.238	9.95
16	2582.7	52.6	.508	19.0	361	.238	7.90
17	2048.2	47.0	.808	21.3	453	.237	6.27
18	1624.3	42.0	1.28	23.9	570	.236	4.97
19	1288.1	37.5	2.04	26.7	711	.234	3.95
20	1021.5	33.5	3.24	30.0	893	.233	3.13
21	810.1	30.0	5.14	33.4	1110	.231	2.49
22	642.5	26.8	8.17	37.4	1400	.230	1.98
23	509.5	23.9	13.0	41.9	1760	.229	1.57
24	404.0	21.3	20.6	47.0	2200	.229	1.14
25	320.4	19.1	32.8	52.4	2740	.226	.989
26	254.1	17.0	52.0	58.7	3440	.225	.784
27	201.5	15.3	82.6	65.4	4270	.222	.624
28	159.8	13.6	131.	73.8	5370	.222	.495
29	126.7	12.2	209.	82.2	6760	.221	.393
30	100.5	10.8	332.	92.3	8530	.221	.311
31	79.7	9.7	525.	103.	10600	.218	.248
32	63.2	8.8	833.	114.	13100	.214	.197
33	50.1	7.8	1330.	129.	16500	.215	.156
34	39.8	7.0	2100.	143.	20400	.211	.124
35	31.5	6.2	3340.	161.	25900	.212	.098
36	25.0	5.6	5290.	179.	31900	.208	.078
37	19.8	5.0	8440.	202.	40800	.211	.062
38	15.7	4.5	13400.	224.	50200	.206	.049
39	12.5	3.9	21300.	254.	64700	.210	.039
40	9.89	3.6	33800.	282.	79600	.206	.031

### Roebing Heavy Roever Covered Magnet Wire

Size A.W.G.	Area in C.M.	Outside Diameter Mils	Ohms Per Pound	*TURNS		WEIGHT, POUNDS—	
				Per Lineal Inch	Per Square Inch	*Per Cubic Inch	Per 1000 Feet
14	4106.7	67.3	.200	14.9	222	.233	12.6
15	3256.8	60.2	.318	16.6	276	.230	10.0
16	2582.7	53.8	.505	18.6	346	.229	7.95
17	2048.2	48.2	.802	20.8	431	.227	6.31
18	1642.3	43.1	1.27	23.2	539	.225	5.02
19	1288.1	38.6	2.02	25.9	672	.223	4.00
20	1021.5	34.6	3.21	29.0	838	.221	3.16
21	810.1	31.0	5.09	32.3	1043	.219	2.51
22	642.5	27.7	8.08	36.0	1298	.216	2.00
23	509.5	24.9	12.8	40.0	1617	.214	1.59
24	404.0	22.3	20.3	44.9	2012	.212	1.26
25	320.4	20.0	32.3	50.0	2500	.209	1.00
26	254.1	17.9	51.2	55.8	3108	.207	.798
27	201.5	16.1	81.2	62.1	3859	.204	.634
28	159.8	14.4	129.	69.3	4803	.202	.504
29	126.7	13.0	204.	77.2	5955	.199	.401
30	100.5	11.6	324.	86.0	7394	.196	.319
31	79.7	10.4	513.	95.9	9193	.194	.254
32	63.2	9.4	814.	107.	11428	.192	.202
33	50.1	8.4	1292.	119.	14256	.190	.160
34	39.8	7.5	2051.	133.	17756	.188	.127
35	31.5	6.7	3254.	149.	22171	.187	.101
36	25.0	6.0	5166.	167.	27789	.186	.0803
37	19.8	5.4	8212.	187.	34894	.185	.0650
38	15.7	4.8	13062.	210.	44058	.185	.0510
39	12.5	4.2	20795.	236.	55884	.186	.0400
40	9.89	3.8	32885.	260.	67652	.180	.0320

\*No allowance has been made for winding losses.

### Roebing Roeglas Magnet Wire

Roeglas magnet wire, fiberglass yarn insulated, can be furnished in sizes No. 4/0 to 32 inclusive, either single wrap or double wrap. The increase in diameter for the fiberglass insulation on Roeglas magnet wire is slightly less than that given for cotton insulation for the same size conductor and number of serving. Additions in mils for round wire are as follows:

Size A.W.G.	4/0-14	15-20	21-32
Single.....	6	5	4
Double Glass.....	10	8	6

The weights per 1000 feet are approximately the same as for cotton insulated magnet wire.

Standard packages are the same as for cotton insulated magnet wire.

### Roebing Round Magnet Wire

#### Double Cotton Covered

Size A.W.G.	DIAMETER, IN.—		Ohms Per Pound	*TURNS		WEIGHT, POUNDS—	
	Bare Wire	Overall		Per Lineal Inch	Per Square Inch	*Per Cubic Inch	Per 1000 Feet
0000	.460	.476	.0000759	2.10	4.41	.238	646.
000	.4096	.426	.000121	2.35	5.52	.236	513.
00	.3648	.381	.000191	2.63	6.90	.234	407.
0	.3249	.341	.000304	2.93	8.60	.232	323.
1	.2893	.305	.000483	3.28	10.7	.229	257.
2	.2576	.274	.000767	3.66	13.4	.227	204.
3	.2294	.245	.00122	4.08	16.6	.224	162.
4	.2043	.220	.00193	4.54	20.6	.221	129.
5	.1819	.198	.00306	5.05	25.5	.218	102.
6	.1620	.176	.00487	5.68	32.3	.218	81.1
7	.1443	.158	.00772	6.32	39.9	.215	64.5
8	.1285	.139	.0123	7.22	52.1	.221	50.9
9	.1144	.124	.0196	8.04	64.6	.218	40.5
10	.1019	.112	.0311	8.94	79.9	.214	32.2
11	.09074	.100	.0494	10.0	101.	.214	25.5
12	.08081	.0900	.0782	11.1	124.	.210	20.3
13	.07196	.0810	.124	12.4	153.	.205	16.2
14	.06408	.0731	.196	13.7	187.	.201	12.9
15	.05707	.0661	.311	15.1	229.	.196	10.3
16	.05082	.0599	.492	16.7	280.	.190	8.17
17	.04526	.0543	.777	18.4	340.	.184	6.51
18	.04030	.0493	1.23	20.3	411.	.178	5.20
19	.03589	.0449	1.94	22.3	496.	.172	4.15
20	.03196	.0410	3.06	24.4	596.	.165	3.32
21	.02846	.0365	4.86	27.4	752.	.165	2.63
22	.02535	.0334	7.65	30.0	899.	.158	2.11
23	.02257	.0306	12.0	32.7	1070.	.151	1.69
24	.02010	.0281	18.9	35.6	1270.	.143	1.36
25	.01790	.0259	29.6	38.6	1490.	.136	1.09
26	.01594	.0239	46.3	41.8	1750.	.128	.881
27	.01420	.0222	72.3	45.1	2030.	.120	.712
28	.01264	.0206	112.	48.5	2350.	.113	.577
29	.01126	.0193	174.	51.9	2700.	.105	.469
30	.01003	.0180	270.	55.5	3080.	.0981	.383
31	.008928	.0169	415.	59.1	3490.	.0912	.314
32	.007950	.0160	636.	62.7	3930.	.0846	.258
33	.007080	.0151	968.	66.3	4400.	.0783	.214
34	.006305	.0143	1470.	69.8	4890.	.0725	.178
35	.005615	.0136	2200.	73.5	5400.	.0671	.149
36	.005000	.0130	3290.	76.9	5920.	.0622	.126



### Crapo Galvanized Telephone and Telegraph Wire



Drawn from iron or steel, of specific properties, processed under laboratory supervision, galvanized by the Crapo process, and rigidly inspected. Meets all standard specifications for electrical conductivity, tensile strength, elongation, galvanizing, and ductility which users of line wire require.

Size B.W.G.	Diam. In.	Wt. Lb. per Mile	Coil Length Mile	MINIMUM BREAKING STRENGTH, POUNDS			MAXIMUM RESISTANCE PER MILE AT 68°F., INTERNATIONAL OHMS		
				E.B.B.	B.B.	Steel	E.B.B.	B.B.	Steel
4	.238	811	1/4	2028	2271	2433	5.98	7.15	8.32
6	.203	590	1/3	1475	1652	1770	8.22	9.83	11.44
8	.165	390	1/2	975	1092	1170	12.43	14.87	17.31
9	.148	314	1/2	785	879	942	15.44	18.47	21.50
10	.134	258	1/2	645	722	774	18.79	22.48	26.16
11	.120	206	1/2	515	577	618	23.54	28.16	32.77
12	.109	170	1/2	425	476	510	28.52	34.12	39.71
14	.083	99	1/2	247	277	297	48.98	58.59	68.18

### Crapo Galvanized Tie Wires

Manufactured specially to facilitate tying in telephone line wire. Galvanized by Crapo process.

Furnished in coils or straightened and cut to length.

Standard bundle for horseshoe tie, 25 pounds.

Standard bundle for armor tie, 50 pounds.

Size B.W.G.	STANDARD COILS		STRAIGHTENED AND CUT TO LENGTH			
	Approx. Length Feet	Approx. Weight Pounds	For Horseshoe Tie Length Inches	No. Pieces	For Armor Tie Length Inches	No. Pieces
10	2040	100	18	350	48	260
10	2040	100	16	390	46	270
12	3100	100	14	675	44	430
14	2650	50	14	1150	40	810

### Crapo Galvanized Ground Wire

For pole grounds. Regularly furnished in coils of approximately 150 pounds.

Size B.W.G.	Diameter Inches	Approx. Wt. Lb. per Coil	Approx. Length Feet
6	.203	150	1320
8	.165	150	2030
9	.148	150	2520

### Crapo Galvanized Steel Cable Lashing Wire



Used with modern cable spinning machines to lash cable to messenger strand.

Coils are neatly and compactly wound, tied with easily removed cotton tape, and contain 325 feet of wire, plus or minus 10 feet.

Wire diameter, .091 inch.

Coil dimensions: arbor hole, straight hub, 1 1/8 inches; outside diameter (nominal), 6 inches; width (nominal), 1 1/2 inches.

Packed 6 coils in a carton.

Per Coil, Approximate Weight, 7.2 Pounds.

### Crapo High-Tensile Line Wire



For Long Spans



For Extra Long Spans

These high-tensile, low-resistance telephone line wires make possible longer-span, lower-cost construction on new lines; provide stronger spans, with lower maintenance expense, on present lines. Development of Indiana Steel and Wire Company.

Galvanized by the Crapo process, which produces a heavy, dense, uniform coating of zinc that adheres tenaciously to the wire and provides dependable protection against corrosion.

### Crapo HTL-85

Used extensively for both new construction and for replacement. When used on existing pole structures it tends to increase strength of line, lessens hazard of ice and wind, minimizes service interruptions, and reduces maintenance costs.

Affords improved transmission at voice frequency with currents of voice frequency magnitude.

Has a tensile strength more than 60 per cent greater than standard B.B. wire of the same diameter. No. 12 B.W.G. size makes possible spans of 225 feet in heavy loading, 325 feet in medium loading, and 375 feet in light loading districts.

Furnished in continuous lengths without splices or joints. Galvanized steel compression-type sleeves are recommended for splicing this wire.

Size B.W.G.	9	10	12	14
Diameter.....in.	.148	.134	.109	.083
Approx. Wt. per Mile.....lb.	314	258	170	99
Coil Length.....mile	1/2	1/2	1/2	1/2
Min. Breaking Load.....lb.	1462	1199	793	460
Max. Resistance per Mile. ohms	18.47	22.48	34.12	58.59

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### Crapo HTL-135

Possesses two and one-half times the strength of standard B.B. wire, which makes possible spans of 350 feet in heavy loading districts, 450 feet in medium loading districts, and 500 feet in light loading districts.

The average number of pole structures per mile can usually be reduced to approximately one-half the number required for B.B. wire.

The effective resistance at voice frequencies with currents of voice frequency magnitude is superior to that of the older grade.

Regularly furnished in No. 12 B.W.G. and in continuous lengths without splices or joints.

Galvanized steel compression-type sleeves are recommended for splicing.

Size.....	No. 12 B.W.G.
Nominal Diameter.....inches	.109
Minimum Breaking Strength.....pounds	1213
Resistance per Mile.....ohms	38.23
Approximate Weight per Mile.....pounds	170
Weight per Coil, Approximate.....pounds	150
Length per Coil, Approximate.....feet	4659

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## Crapo Galvanized Steel Conductors



A high tensile, low-resistance steel conductor which makes possible long spans, reduces the number of pole structures required, saves man-hours and material, and reduces over-all construction expense.

Used for rural taplines and single-phase extensions, high-tension transmission lines and branches, primary distribution lines, primary circuits; for mixed commercial, residential and farm service, primary neutrals of three-phase rural feeders and series street lighting circuits.

Made by special process from steel of special composition and galvanized.

Available in two grades: Crapo HTC-130 and Crapo HTC-80. Each grade is available in two constructions: stranded (3-wire) and solid. Each construction is available in three sizes: Nos. 4, 6, and 8 B.W.G.

The effective resistance and reactance of Crapo HTC-130 and HTC-80 are shown below. The resistance and reactance values for solid conductors are slightly higher than those for stranded (3-wire) conductors.

**Resistance and Reactance in Ohms per Mile of Single Conductor at 60 Cycles for Various Currents and Conductor Spacings When the Ambient Temperature is 20°C. (68°F.)**

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Conductor Size B.W.G.	Current Am-peres	Maximum Resistance per Mile	Internal Reactance per Mile	TOTAL REACTANCE PER MILE			
				Crapo HTC-130			
				24	36	48	60
4	1.0	8.07	0.72	1.35	1.40	1.43	1.46
	5.0	8.39	0.77	1.40	1.45	1.48	1.51
	10.0	8.83	0.85	1.48	1.53	1.56	1.59
	15.0	9.53	0.90	1.53	1.58	1.61	1.64
6	1.0	11.29	0.72	1.37	1.42	1.45	1.48
	5.0	11.36	0.77	1.42	1.47	1.50	1.53
	10.0	11.53	0.85	1.50	1.55	1.58	1.61
	15.0	11.81	0.96	1.61	1.66	1.69	1.72
4	1.0	7.17	1.05	1.67	1.73	1.76	1.79
	5.0	7.25	1.07	1.69	1.75	1.78	1.81
	10.0	7.40	1.10	1.72	1.78	1.81	1.84
	15.0	7.62	1.15	1.77	1.83	1.86	1.89
6	1.0	9.97	1.06	1.70	1.76	1.79	1.82
	5.0	10.09	1.09	1.73	1.79	1.82	1.85
	10.0	10.28	1.15	1.79	1.85	1.88	1.91
	15.0	10.56	1.23	1.87	1.93	1.96	1.99

## Physical Properties

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Conductor Size B.W.G.	Type of Construction	WIRES		WEIGHT POUNDS		MINIMUM BREAKING STRENGTH, POUNDS	
		No.	Size In.	Per 1000 Ft.	Per Mile	HTC-130	HTC-80
4	3-Wire	3	.138	156	823	5610	3624
6	3-Wire	3	.117	112	590	4295	2604
8	3-Wire	3	.096	75	396	2915	1753
4	Solid	1	.238	154	811	5784	3559
6	Solid	1	.203	112	590	4208	2589
8	Solid	1	.165	73.5	390	2780	1711

## Standard Shipping Lengths

Conductor Size B.W.G.	Type of Construction	FEET PER COIL		REELS	
		150	300	Feet per Reel	Weight per Reel
		Pound Coils	Pound Coils		
4	3-Wire	960	1920	†5760	900
6	3-Wire	1335	2670	†8020	900
8	3-Wire	2000	4000	†12000	900
4	Solid	....	1960	5880	900
6	Solid	....	2680	8040	900
8	Solid	....	4110	12330	900

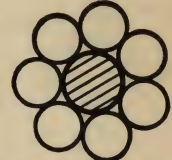
\*Of each conductor of a single, 2, or 3-phase circuit, at stated distances between centers of conductors.

†When specified, stranded conductors can be shipped in coils approximately  $\frac{1}{2}$  or  $\frac{1}{4}$  of the reel lengths shown above. Stranded conductors can also be furnished on reels in lengths approximately  $\frac{1}{2}$  the length shown above.

Values for weights and lengths are approximate.

Crapo Aluminum Cable  
Steel Reinforced  
(ACSR)

Six Aluminum Wires  
Over One of Steel



Seven Aluminum Wires  
Over One of Steel

Crapo ACSR combines the conductivity of aluminum with the tensile strength of steel to provide an efficient, economical conductor suited to the transmission and distribution of power.

The aluminum wires, with their high current-carrying capacity, are stranded around a core of special high tensile steel wire to form a cable light in weight yet high in physical strength.

Crapo ACSR is manufactured to highest industry standards and in accord with established physical and electrical specifications. Each step in the manufacturing process is performed under laboratory control and guidance to insure high uniform quality in the finished product.

## Physical and Electrical Characteristics

ACSR Size A.W.G.	Copper Size Equivalent A.W.G.	STRANDING NUMBER OF WIRES, IN.	Over-all Diam. In.	Resistance		Wt. Lb.—	
				Ohms per Mile	Ultimate Strength (61% at 25°C.) Pounds	Per 1000 Feet	Per Mile
		Aluminum	Steel				
6	8	6x0.0661	1x0.0661	0.198	3.56	1170	36.2
4	6	6x0.0834	1x0.0834	0.250	2.24	1830	57.6
4	6	7x0.0772	1x0.1029	0.257	2.24	2288	67.4
2	4	6x0.1052	1x0.1052	0.316	1.41	2790	91.6
2	4	7x0.0974	1x0.1299	0.325	1.41	3525	107.2
1/0	2	6x0.1327	1x0.1327	0.398	0.885	4280	145.6
2/0	1	6x0.1490	1x0.1490	0.447	0.702	5345	183.7
3/0	1/0	6x0.1672	1x0.1672	0.502	0.556	6675	231.6
4/0	2/0	6x0.1878	1x0.1878	0.563	0.441	8420	292.1

Crapo ACSR in sizes 1/0 to 4/0 is regularly furnished on 40-inch reels, each reel containing one length. Sizes 6, 4, and 2 are regularly furnished on 40-inch reels, each containing two lengths. Sizes 6, 4, 2, and 1/0 also can be furnished on 30-inch reels, each reel containing one length, or in coils when specified.

Approximate net weights: A.C.S.R. on 40-inch reel, 1000 pounds; on 30-inch reel, 500 pounds; in coil, 250 pounds.

Crapo Galvanized Tie Wire  
For Steel Conductors

A soft, pliable steel wire developed specially for applying armor ties to steel conductor.

Available in two sizes: Nos. 8 and 10 B.W.G.

Packed in bundles of 50 pounds each.

Conductor Size B.W.G.	LENGTH OF ARMOR TIES, INCHES		
	Top Tie for Phase Conductor	Side Tie for Phase Conductor	Tie for Neutral Conductor (Bracket Type)
4	95	99	85
6	95	95	85
8	85	95	85

## Approximate Number of Ties Per 50-Pound Bundle

Ties.....inches	99	95	85
No. 8 B.W.G.....	81	85	95
No. 10 B.W.G.....	125	130	145

Can also be furnished in coils of approximately 150 pounds each.

Crapo Galvanized Ground Wire  
For Pole Grounds

Provides economical and effective pole grounds; selected for low electrical resistance.

Galvanized by Crapo process.

Conductor Size.....B.W.G.	4	6
Diameter.....inches	.238	.203
Approximate Weight per Coil.....pounds	150	150
Approximate Length per Coil.....feet	976	1320



## Preformed Armor Rods and Two-Piece Tie Wires

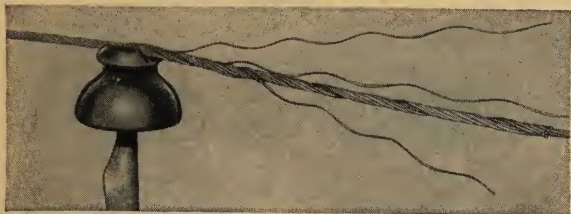


Illustration above shows the rods in process of being applied to the conductor at the support.

Illustration at left shows the armored conductor tied to the insulator with two-piece tie wires.

### Armor Rods

Designed to reinforce and protect overhead conductors and static wires at the point of and in the region of the support.

Minimizes wear and chafing at supports. Reduces possibility of corrosion. Tends to absorb and dissipate vibration.

Acts as an armor over the conductor, protecting it against flash-overs and arcing. Provides excellent holding power against slippage. Installed easily and quickly. Hot-line installations can be made with standard hot-line tools.

Each individual rod is preformed into open helices designed to fit snugly around the conductor. No clips are required to hold the rod in place.

Reinforced conductor can be fastened to the support by conventional methods.

Rods should be ordered with the same pitch as the conductor or strand on which they are to be used.

Made by Indiana Steel & Wire Company from Crapo galvanized spring steel wire manufactured especially for the purpose.

Can be furnished in aluminum, copper, or bronze and in conductor sizes other than listed.

### Two-Piece Tie Wires

Recommended for tying-in the conductor.

The two-piece tie wires are straightened and cut to required lengths from special steel wire galvanized by the Crapo process.

For hot-line tie, use same gage wire as listed. Total length of two tie wires required is 56 inches.

Packed in 50-pound bundles.

### \*Specifications

#### Steel Conductor

#### Preformed Armor Rods (.094-Inch Diameter)

Conductor Size In.	RIGHT-HAND PITCH				DOUBLE				2-PIECE TIE WIRES			
	SINGLE INSULATOR		INSULATOR		INSULATOR		INSULATOR		RODS		TIE	
	Conductor Diam.	Lgth. Rod	Wt. per 1000	Wt. Rod	Conductor Diam.	Lgth. Rod	Wt. per 1000	Wt. Rod	per Conductor	Wire Size	LGTH., IN.	Wt. per Set
8	.207	40	86	52	110	9	12	18	22	.07		
6	.252	40	86	52	110	10	11	20	22	.07		
4	.297	40	86	52	110	11	10	20	24	.09		
<b>Amerductor</b>												
12	.174	40	86	52	110	8	12	18	22	.06		
10	.220	40	86	52	110	9	12	18	22	.06		
8X	.216	40	86	52	110	9	12	18	22	.06		
8	.196	40	86	52	110	8	12	18	22	.06		
6	.248	40	86	52	110	10	11	18	22	.07		
<b>ACSR</b>												
4 (6/1)	.250	40	86	52	110	10	12	18	22	.06		
4 (7/1)	.257	40	86	52	110	10	12	18	22	.06		
2 (6/1)	.316	40	86	52	110	12	11	20	24	.09		
2 (7/1)	.325	40	86	52	110	12	11	20	24	.09		
1/0 (6/1)	.398	40	86	52	110	14	10	24	27	.12		
2/0 (6/1)	.447	40	86	52	110	16	10	24	27	.12		

#### Preformed Armor Rods for 7-Wire Steel Strand

STRAND, IN.		Rod		Rods per Conductor
Size	Diameter	Length Inches	Wt. Lb. per 1000	
5/16	.3125	40	86	12
3/8	.375	40	86	14
7/16	.4375	40	86	16

## Crapo Galvanized Steel Strand



All wire used in forming a particular size and grade is produced from steel of selected properties, scientifically processed under laboratory supervision and galvanized by the Crapo process. Both wire and strand are subjected to laboratory tests for tensile strength, elongation, galvanizing, ductility, and gage to insure high uniform quality in the finished product.

Furnished in the following standard lengths: 3/4-inch diameter and smaller in 250, 500 and 1000-foot coils and 2500 and 5000-foot reels; 7/8-inch diameter and larger in 250 and 500-foot coils and 1000, 2500 and 5000-foot reels. When ordering specify size and grade, method of packing (coils or reels) and number of feet per coil or reel.

### Guy and Messenger Strand

#### 7 Wires Twisted into 1 Strand

Nom. Diam. Strand In.	Wire Diam. In.	Wt. Per 1000 Ft. Lb.	MINIMUM BREAKING STRENGTH, POUNDS			
			Common Grade (Single & Extra Galv.)	Siemens-Martin Grade (Extra Galv.)	High Strength Grade (Extra Galv.)	Extra High Strength Grade (Extra Galv.)
5/8	.207	813	11600	19100	29600	42400
1/2	.165	517	7400	12100	18800	26900
7/16	.145	399	5700	9350	14500	20800
3/8	.120	273	4250	6950	10800	15400
5/16	.104	205	3200	5350	8000	11200
9/32	.093	164	....	4250	6400	8950
1/4	.080	121	1900	3150	4750	6650
3/16	.062	72.9	1150	1900	2850	3990

### Specification Grade 7-Wire Strand

#### Utilities—Western Union—A.T.&T.

Nominal Diameter Inches	Trade Designation	Wire Diameter Inches	Weight Pounds per 1000 Feet	Minimum Breaking Strength Pounds
1/2	25000 Lb.	.165	517	25000
7/16	16000 Lb.	.145	399	18000
3/8	10000 Lb.	.120	273	11500
5/16	6000 Lb.	.109	225	6000
9/32	4000 Lb.	.093	164	4600
3/16	2200 Lb.	.065	80.3	2400

### Utilities Grade 3-Wire Strand

Size	Diam. Inches	Approx. Weight Per Coil Pounds	Approx. Length Per Coil Feet	Breaking Strength Pounds
1/4	.120	116.7		3150
1/4	.120	116.7		4500
5/16	.145	170.6		6500
3/8	.165	220.3		8500

## Crapo Galvanized Construction Wire

For miscellaneous construction purposes, such as light guys, wrapping stubbed poles, lashing brackets to poles, etc.

Size B.W.G.	Diam. Inches	Approx. Weight Per Coil Pounds	Approx. Length Per Coil Feet	Breaking Strength Pounds
6	.203	150	1320	1618
8	.165	100	1320	1069
10	.134	100	2050	705
12	.109	100	3150	467
14	.083	50	2700	271



### Appleton Constant Duty Reelites Spring-Driven Cable Lift Reel Type A Reelite



Made of cast aluminum and steel. Black enameled finish. **Ratchet.** For installations where constant tension is not desired, a gravity-type ratchet may be furnished at extra charge. Orders must specify mounting position of Reelite base.

When ordering, specify number of reelite, length, gage and number of conductors of cable, type of cable outlet.

#### Type A-3-Spring—35 Amperes, 440 Volts A.C. 250 Volts, D.C.

No.	Each	No. of Conductors	MAX. CAPACITY, FEET, OF VARIOUS SIZES AND CONDUCTORS OF RUBBER-COVERED CABLE					Weight Pounds Reelite Only
			No. 18	No. 16	No. 14	No. 12	No. 10	
A-23	.....	2	55	55	50	35	..	36
A-33	.....	3	55	55	45	35	..	37
A-43	.....	4	55	55	35	30	..	38
A-53	.....	5	50	50	30	20	..	43
A-63	.....	6	45	40	20	20	..	44

#### Type A-5-Spring—35 Amperes, 440 Volts A.C. 250 Volts D.C.

A-25	.....	2	100	90	55	..	..	40
A-35	.....	3	90	75	50	..	..	41
A-45	.....	4	75	60	..	..	..	42
A-55	.....	5	60	..	..	..	..	47
A-65	.....	6	50	..	..	..	..	48

### Reelites for Type S Cord

Made of cast aluminum and steel. Black enameled finish.

When ordering, specify number of reelite, length, gage and number of conductors of cable, type of cable outlet desired.

#### Type BS—35 Amperes, 600 Volts

BS-22	.....	2	..	..	60	60	55	124
BS-32	.....	3	..	..	60	60	55	126
BS-42	.....	4	..	65	60	50	50	128
BS-52	.....	5	65	65	55	50	45	154
BS-62	.....	6	65	65	55	50	40	156
BS-72	.....	7	65	65	55	50	40	158
BS-82	.....	8	60	55	40	35	30	160

#### Type CS—35 Amperes, 600 Volts

CS-24	.....	2	110	110	105	90	85	154
CS-34	.....	3	110	110	100	85	70	156
CS-44	.....	4	110	110	90	75	60	158
CS-54	.....	5	110	100	75	65	55	184
CS-64	.....	6	100	100	65	55	45	186
CS-74	.....	7	100	100	65	55	45	188
CS-84	.....	8	85	80	45	40	35	190

#### Type DS—35 Amperes, 600 Volts

DS-32	.....	3	..	..	..	..	80	214
DS-42	.....	4	..	..	..	80	75	216
DS-52	.....	5	..	..	80	75	70	240
DS-62	.....	6	..	..	80	75	65	242
DS-72	.....	7	..	..	75	70	65	244
DS-82	.....	8	..	..	65	65	50	246

#### Type ES—35 Amperes, 600 Volts

ES-24	.....	2	150	150	140	135	130	272
ES-34	.....	3	150	150	140	135	125	274
ES-44	.....	4	150	150	130	130	105	276
ES-54	.....	5	150	150	130	110	90	300
ES-64	.....	6	150	140	110	95	80	302
ES-74	.....	7	150	140	110	90	70	304
ES-84	.....	8	130	130	85	70	55	306

### Appleton Constant Duty Reelites Spring-Driven Cable Lift Reel Reelite for Type W Cable

Made of cast aluminum and steel. Black enamel finish.

#### Type BW—100 Amperes, 600 Volts

No.	Each	No. of Conductors	MAX. CAPACITY, FEET, OF VARIOUS SIZES AND WEIGHTS OF RUBBER-COVERED CABLE					No. Reelite Only
			No. 8	No. 6	No. 4	No. 3	No. 2	
BW-12	.....	1	60	60	55	..	..	122
BW-22	.....	2	45	35	20	..	..	124
BW-32	.....	3	40	30	20	..	..	126
BW-42	.....	4	30	25	15	..	..	128

#### Type CW—100 Amperes, 600 Volts

CW-14	.....	1	100	100	85	..	..	152
CW-24	.....	2	55	40	25	..	..	154

#### Type DW—100 Amperes, 600 Volts

DW-12	.....	1	..	..	75	65	60	210
DW-22	.....	2	75	65	45	35	30	212
DW-32	.....	3	65	50	35	30	25	214
DW-42	.....	4	50	40	25	20	20	216

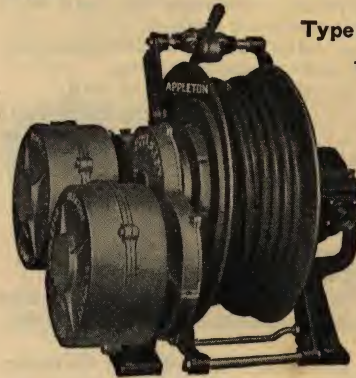
#### Type EW—100 Amperes, 600 Volts

EW-14	.....	1	140	135	120	110	100	75	270
EW-24	.....	2	90	70	..	..	..	..	272
EW-34	.....	3	70	55	..	..	..	..	274
EW-44	.....	4	55	45	..	..	..	..	276

EWM-15	.....	1	140	135	120	110	100	75	285
EWM-25	.....	2	90	70	..	..	..	..	287
EWM-35	.....	3	70	55	..	..	..	..	289
EWM-45	.....	4	55	45	..	..	..	..	291

### Type EG—For Type W Cable

100 Amperes, 600 Volts

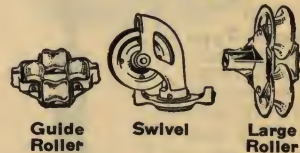


Spring-driven through cut gears. Cable outlet is the four-roller type. Cast aluminum and steel construction; black enameled finish.

When ordering, specify number of reelite, length, gage and number of conductors of cable.

EG-22	.....	2	..	75	60	55	50	45	358
EG-32	.....	3	75	65	55	50	45	40	360
EG-42	.....	4	70	60	50	45	40	35	362
EG-14	.....	1	..	..	130	130	120	110	370
EG-24	.....	2	110	105	90	70	65	50	372
EG-34	.....	3	105	100	75	65	60	45	374
EG-44	.....	4	100	85	60	55	45	..	376

### Roller Cable Outlets For Constant Duty Reelites



In order to obtain maximum efficiency from the constant duty reelite, it is necessary to choose the correct outlet and to set it in correct position.

Any one of the three types of outlets shown may be furnished with Types A, BS, BW, CS, CW, DS, DW, ES, and EW Reelites. Specify type or catalog number of outlet. Guide roller type will be furnished, without extra charge, unless otherwise specified. Other cable outlets are extra.

No.	Type Reelite	Type Cable Outlet	*Diam. In.	No.	Type Reelite	Type Cable Outlet	*Diam. In.
CO-1R	SR	Guide Roller	.625	CO-11	BS-CS	Guide Roller	1.750
CO-1R	R	Guide Roller	.625	CO-22	DS-ES	Swivel Type	1.125
CO-2R		Swivel Type	.625	CO-33		Large Roller	1.125
CO-1SN	SN	Guide Roller	.812	CO-11	BW-CW	Guide Roller	1.750
CO-2SN		Swivel Type	.625	CO-22	DW-EW	Swivel Type	1.125
CO-1	A	Guide Roller	.812	CO-22A	EWM	Swivel Type	2.000
CO-2		Swivel Type	.625	CO-33		Large Roller	1.125
CO-3		Large Roller	.625	CO-111	EG	Guide Roller	1.750
				CO-333		Large Roller	1.625
				COS-2	AF-AFB	Swivel Type	.625

\*Largest cable diameter recommended.



## Appleton Portable Reelites

## Portable Type

660 Watts, 250 Volts



An automatic reeling device for extension light cords. The light is always available within arm's reach and no time is lost in untangling cords or plugging in for new extensions. Each reel has a ratchet stop which works exactly like a window shade. Furnished standard with cover plate which fits over all 3¼ or 4-inch octagonal outlet boxes. Furnished with No. 16 gage, 2 conductor cord.

Light grey enamel finish.

No.	Each	Description	Wt., Lb. per Doz.
1532	\$9.50	Without Wiring Device.....	50
1533	10.00	Brass Shell Key Socket.....	61
1534	10.00	Composition Key Socket.....	62
<b>With 25 Feet of Cord—7¼-Inch Reelite</b>			
1524	\$12.00	Without Wiring Device.....	94
1525	12.50	Brass Shell Key Socket (Less Guard)....	94
1526	12.50	Composition Key Socket (Less Guard)...	97
1530	13.00	*Grounding Type without Wiring Devices	95
<b>With 40 Feet of Cord—10-Inch Reelite</b>			
1519	\$23.00	Without Wiring Device.....	150
<b>With 50 Feet of Cord—10 Inch Reelite</b>			
1520	\$25.00	Without Wiring Device.....	160

## With Type SJ Cord

20 Amperes, 300 Volts



Especially developed for Type SJ, 2 and 3 conductor cords.

The roller outlet permits either ceiling, wall, or base mounting.

Furnished with 25 feet of cord.

No.	Each	15218	15318	15216	15316
No.	.....	\$44.50	50.00	45.00	50.00
Size Cord....	18	18	16	16	
No. of Con-					
ductors....	2	3	2	3	
Weight....lb.	14	14	14	14	

## No. 1509 Vaporproof (Keyless) Type

660 Watts, 250 Volts

Furnished with vaporproof globe and heavy duty wire guard. Will accommodate standard lamps up to and including 60-watt.

Light grey enameled reel-unit, 7¼ inches in diameter,

with ceiling mounting for attaching to standard 3¼ to 4-inch octagonal outlet boxes. Furnished with 20 feet of No. 16, 2 conductor cord; plastic handle; heavy duty wire guard.

Weight per dozen, 144 pounds.

No. 1509...each .....

## Heavy Guard Type

With Half Reflector

660 Watts, 250 Volts

Reelite is supplied with or without switch in handle. Wire guard accommodates up to and including 100-watt lamps. Supplied with 25 ft., No. 16, 2 conductor cord. Reel-unit, 7¼ in. diameter, light grey enameled finish. Has base for attaching to standard 3¼ or 4-in. octagonal outlet boxes; wood handle and heavy duty wire guard.



Vaporproof Type



Heavy Guard Type

No.	Each	Type Socket	Wt., Lb. per Doz.
1522	\$15.00	Keyless.....	133
1528	15.00	Levolier.....	121

\*Furnished with No. 18-3 conductor cord, two of which are connected to brushes and third grounded to frame.

## Appleton Portable Reelites

## Rubber Handle Type

With Half Reflector

660 Watts, 250 Volts



Rubber Handle Type

Furnished with or without switch in handle. Also has heavy duty wire guard accommodating lamps up to 100 watts.

Light grey enameled reel-unit 7¼ inches diameter, with base for attaching to 3¼ to 4-inch outlet boxes; 25 feet No. 16-gage, 2 conductor cord, rubber handle.

No.	Each	Type Socket	Wt. Lb. per Doz.
1516	\$15.00	Keyless.....	133
1517	15.00	Levolier.....	133

## No. 1518 Battery Lamp Type

660 Watts, 250 Volts

Equipped for 21 or 32cp. 6-8-volt battery lamp to operate off a storage battery. Bulbs not included.

Light grey enameled reel-unit 7¼ inches diameter, with base for attaching to ceiling, or wall of truck; 25 feet No. 16 gage, 2 conductor cord.

Weight per dozen, 96 pounds.  
No. 1518.....each \$13.00



Battery Lamp Type

## No. 1523 Machine Tool Type

660 Watts, 250 Volts

Has a connector body so any portable electrical tool or device can be attached.

Light grey enameled reel-unit 7¼ inches diameter, with base for attaching to 3¼ or 4-inch outlet boxes; 25 feet No. 16 gage, 2 conductor cord.

Weight per dozen, 97 pounds.  
No. 1523.....each \$12.50



Machine Tool Type

## Cloth Cutting Machine Type

660 Watts, 250 Volts

Has swivel cover, light spring tension without ratchet stop. No wiring devices furnished.

Light grey enameled reel-unit with base for attaching to 3¼ or 4-inch outlet boxes.

Supplied with special cambric covered lightweight No. 18 gage, 2 conductor cord.

No.	Each	Diameter Reel, In.	Length Cord, Ft.	Wt. Lb. per Doz.
1511	\$23.50	10	50	140
1521	12.50	7¼	25	96

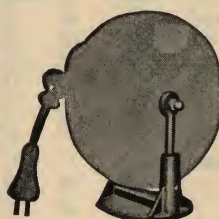


Cloth Cutting Machine Type

## No. 1535 Cast Base

Used for mounting of portable reelites, base down. Base may be furnished instead of 3¼ or 4-inch outlet plate when specified, at no extra charge. If furnished separately, No. and price must be added.

Light grey enameled finish.  
No. 1535.....each \$7.75



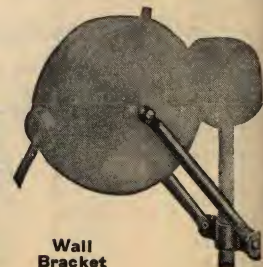
Cast Base

## No. 1538 Wall Bracket

For use with 5½, 7¼ and 10-inch reelites. For wall mounting of portable reelites. May be ordered separately or with reelite.

Light grey enameled finish.

No. 1538.....each \$1.50



Wall Bracket



## Appleton Light Duty Air-Fluid Reels

### Spring Driven Lift Type

#### For Air and Fluid Hose



Used for light duty pneumatic tool, paint spray, and blow gun applications where it is desirable to keep the hose free of kinks and out of the way.

The hose outlet is adjustable and should be so set that the hose does not drag around the rollers when mounted on the wall or ceiling. Furnished complete with 25 feet of durable, 2-braid hose.

If constant tension is unnecessary, reels will be equipped with ratchet device at extra charge. A slight jerk on the hose line allows the hose to be drawn in. Orders must specify if ratchet is desired. Ratchets can be used only with ceiling installations.

	Air		*Fluid Paint
	CA-11	CA-22	CF-22
No. ....			
Each. ....	\$30.00	31.00	35.00
Hose Sizes: I.D. .... inches	1/4	3/8	3/8
O.D. .... inches	9/16	47/64	11/16
Shipping Weight. .... pounds	27	32	32

\*This hose has proper outside diameter for DeVilbiss fittings.

## Appleton Industrial Type Aireels

### Spring Driven Lift Type

#### For Air Hose Lines



An open style air reel used automatically to wind and maintain constant tension on air hose lines of portable pneumatic tools.

Can be mounted either on the ceiling or wall. The outlet arm is adjustable. The swivel air joint is positive and self-adjusting.

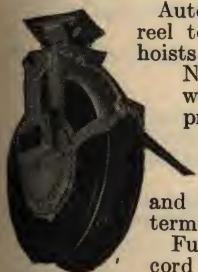
Complete with 2-braid air hose.

No. ....	CWT-11	CWT-21	CWT-31	CTL-31	CTL-41
Each. ....	\$62.75	\$68.00	\$74.00	\$120.00	\$128.00
Ratchet. each	6.00	6.00	6.00	6.00	6.00
Size Hose:					
I. D. .... in.	1/4	3/8	1/2	1/2	3/4
O.D. .... in.	3/4	47/64	29/32	29/32	1 13/64
Lgth. Hose. ft.	25	25	*25	50	50
Ship. Wt. .... lb.	70	75	75	100	110

\*Only 20 feet of hose are wound on reel drum; 5 feet of hose remain outside.

## Type YS Appleton Reelites

### Portable Power for Electric Hoists



Automatic take-up, spring-operated cable reel to furnish power to traveling electric hoists operating on straight or curved tracks.

No exposed current collectors, trolleys or wires. Guarded by extra conductor to prevent electrical mishaps. Simple to maintain, with power spring replaceable through outer spring cover, oilless bearings at all points of rotation and solderless cord connections made to terminal block without dismantling reel.

Furnished with swivel base and Type S cord assembly.

#### 14-Gage Wire

15 Amperes, 550 Volts A.C., 250 Volts D.C.		No. of Conductors	Cord Lgth. Feet	Weight Pounds
No.	Each			
YS142-40	....	2	40	25
YS143-35	....	3	35	25
YS144-25	....	4	25	25

#### 16-Gage Wire

10 Amperes, 550 Volts A.C., 250 Volts D.C.		No. of Conductors	Cord Lgth. Feet	Weight Pounds
No.	Each			
YS162-45	....	2	45	23
YS163-45	....	3	45	24
YS164-40	....	4	40	25

## Appleton Retract-o-Reels

Lightweight cast aluminum balancing reel used for supporting portable tools, air, and electrical devices weighing up to 10 pounds.

Reels support lightweight drills, screwdrivers, and assembly tools directly over production line while operator is otherwise engaged.

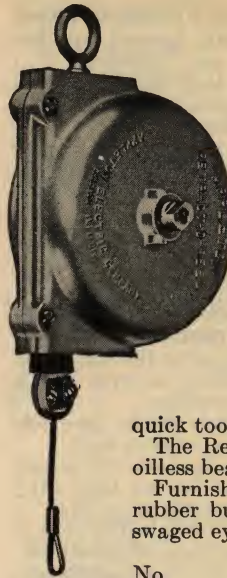
Spring tension is adjustable although balance point is set at factory according to weight of tool to be balanced.

The end of the wire rope is furnished with an eye loop made of a swaged-in thimble, permitting

quick tool connection.

The Retract-o-Reel turns on self-lubricated oilless bearings.

Furnished with 6 feet preformed wire rope, rubber bumper, cable clamp, and thimble in swaged eye loop.



No. ....	B21-51	B21-71	B21-81	B21-101
Each. ....	\$17.50	17.50	17.50	17.50
Max. Weight of Tool. lb.	5	7	8	10
Min. Weight of Tool. lb.	0	5	7	8
Max. Working Range. ft.	6	6	5	1 1/2
Min. Length Outside Reel Drum. .... feet	0	0	1	4 1/2
Weight. .... pounds	6	6	6	6



No. A1-B21

### No. A1-B21 Retract-O-Reel Handwheels

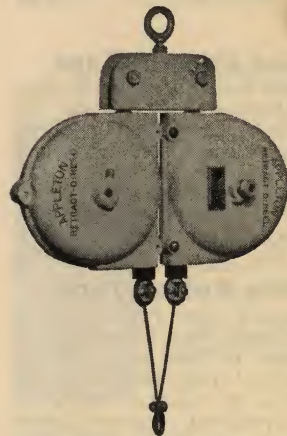
Handwheel fits tension adjustment stud on Retract-o-Reel. Affords safe and quick spring tension adjustment for proper balance.

No. A1-B21, Weight, 8 ounces. ... each \$1.50

## Appleton Tandem Retract-o-Reels

### For Balancing Portable Tools

#### Complete Units



A device which may be used in tandem to balance heavier weights by using the special tandem hanger assembly.

Reeling units must be individually adjusted to their rated balancing capacity to permit springs to share the load equally.

Complete with two standard reeling units, hanger assembly, and 6 feet of wire rope.

Weight each, 14 pounds.

No.	Each	Wt., Lb. of Tool to Be BALANCED		Active Rope Max. Working Range Feet	Inactive Rope Min. Lgth. Outside Reel Feet
		Max.	Min.		
B21-102	\$40.00	10	0	6	0
B21-142	40.00	14	10	6	0
B21-162	40.00	16	14	5	1
B21-202	40.00	20	16	1 1/2	4 1/2

### No. B21-A2 Hanger Assemblies Only

Includes hangers, eyebolt assembly, and fastening bolts for coupling any two standard retract-o-reels in tandem.

Weight each, 2 pounds.

No. B21-A2 ..... each \$5.00







### Sticka Black Friction Tape

A popular-priced tape for general use.

Used to protect the splicing compound on a wire joint from abrasion.

Roll contains  $\frac{1}{2}$  pound gross of  $\frac{3}{4}$ -inch tape, length 60 feet to a roll.

Available in  $\frac{1}{4}$ -pound rolls. Special widths furnished packed in foil.

Per Pound..... \$.36

### Victor Black Friction Tape

Protects the splicing compound on wire joints from abrasion.

A high grade tape for outside or inside work.

Roll contains  $\frac{1}{2}$  pound gross of  $\frac{3}{4}$ -inch tape, 67 $\frac{1}{2}$  feet to a roll.

Also furnished in rolls 2 inches wide, 67 $\frac{1}{2}$  feet per roll, for repairing lead-covered telephone cables. Approximate weight per 2-inch roll in foil, 19 $\frac{1}{4}$  ounces.

Available in  $\frac{1}{4}$ -pound rolls. Special widths furnished packed in foil.

Per Pound..... \$.38

### Amazon A.S.T.M. Black Friction Tape

Highest quality friction tape to meet the most strict specifications.

Roll contains  $\frac{1}{2}$  pound gross of  $\frac{3}{4}$ -inch tape, which is 82 $\frac{1}{2}$  feet to a roll.

Available in  $\frac{1}{4}$ -pound rolls. Special widths furnished packed in foil.

Per Pound..... \$.40



### Manson Friction Tape

Made with new rubber which thoroughly impregnates and coats the strong, closely woven cotton fabric. Black. Has true adhesive, aging and weathering qualities. Provides lasting protection for joint.

Roll contains 78 feet,  $\frac{3}{4}$  inch wide. Put up in  $\frac{1}{2}$  pound cans.

Per Pound..... \$.99



### Okonite Rubber Tape

Compounded only from new Up-River fine Para rubber. When wrapped on the joint, it fuses into a homogeneous wall of tough insulation that is impervious to moisture and stays elastic and resilient. Insures highest electrical strength and permanence. Roll  $\frac{3}{4}$ -inch wide contains 30 ft.

In  $\frac{1}{2}$ -Pound Cans..... per pound \$1.16



### Hydro-Proof Tape

A waterproof tape with an average dielectric strength per layer of 1850 volts.

Width,  $\frac{3}{4}$  inch.

Packed 24 yards per 8-ounce roll.

Per Pound..... \$1.00

### Amazon A.S.T.M. Splicing Compound (Rubber Tape)



Designed for the severest kind of service. Meets the A.S.T.M. and A.R.A. specifications as well as U.S. Navy specification 17-T-1d.

Because of the high percentage of pure plantation rubber this tape is extremely elastic. Will amalgamate into a solid tube to make a watertight joint.

Will withstand dielectric test of at least 350 volts per mil of thickness.

Roll contains  $\frac{1}{2}$ -pound gross of  $\frac{3}{4}$ -inch No. 8 tape; length, 30 feet. Also available in  $\frac{1}{4}$ -pound rolls. Special widths packed in foil only.

Per Pound..... \$.49

### Victor Splicing Compound (Rubber Tape)



This tape is second in quality only to Amazon.

It is designed primarily for ordinary service. Its performance has more than justified the high recommendation which has been given to it.

Will withstand a dielectric test of 300 volts per mil of thickness.

Roll contains  $\frac{1}{2}$ -pound gross of  $\frac{3}{4}$ -inch No. 8 tape; length, 21 feet. Also available in  $\frac{1}{4}$ -pound rolls. Special widths packed in foil only.

Per Pound..... \$.40



### Ruberoid Insulating Tape

A black tape which will not vulcanize with heat or become defective by exposure or use, will not dry and crack or harden; water, acid and alkali-proof.

Furnished in  $\frac{1}{2}$ -lb. rolls  $\frac{3}{4}$  in. wide. Per Pound..... \$.75

Other widths made to order.

### Ideal Acid Core Solder



Metal virgin tin and lead—no scrap metals used. A superior liquid soldering acid flux. Size of solder approximately No. 8 standard gage.

Put up in spools only of 1, 5, and 20 pounds each.

Prices upon application.

### Gem Rosin Core Solder



Metals virgin tin and lead—no scrap metals used. Rosin flux. Size of solder approximately .093 inch standard gage.

Put up in spools of 1, 5, and 20 pounds each.

Prices upon application.



## Kester Plastic Rosin-Filled Solder

For Electrical and Radio Work



With plastic rosin flux, non-corrosive and electrically non-conductive.

The flux flows, as the solder melts, in just the right amounts for a perfect soldering job.

Requires only heat.

Standard size,  $\frac{3}{32}$  inch, about 50 feet to the pound.

Size Spool.....pounds    1    5    20  
Each.....

## Kester Acid-Filled Solder

For General Soldering



Easy to use, saves time, and is dependable for a permanent bond.

Contains a scientifically prepared flux that flows in just the right proportions as the solder melts. Requires only heat.

Standard size,  $\frac{1}{8}$  inch, about 25 feet to the pound.

1-Pound Carton.....each  
1-Pound Spool.....each  
5-Pound Spool.....each  
20-Pound Spool.....each

## Nokorode Core Solder



Ready for instant use; can be used for all kinds of soldering. Will replace acid or resin core solder.

Made of pure virgin tin and lead, with the proper amount of flux to a given amount of solder. Works quickly and leaves a strong, permanent soldered joint.

Nokorode Core Solder is so combined that the flux is in a solid form, care being taken that all parts of the solder contain flux. When heat is applied, the flux does not run out and leave parts of the solder that must be thrown away.

Put up in  $\frac{1}{2}$ -ounce packages, 1, 5 and 20-pound spools.

Prices upon application.

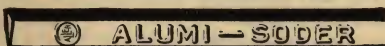
## Bar Solder



An alloy of tin and lead, made up in the form of bars for convenience in handling, for making soldered joints in metals, such as lead piping systems, for cable splices and other heavy work.

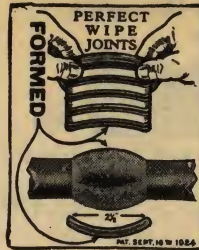
Price, Solder in Regular Bars.....per pound \$1.00

## Allen Aluminum Solder



Complete solder and flux combined. Requires only heat to permanently join aluminum to itself or other metals.

Bars and wire, packed 6 pounds to carton.  
 $\frac{1}{4}$ -Pound Bars.....per pound \$2.00  
1-Pound Bars.....per pound 1.50  
Wire  $\frac{1}{8}$ -Inch, 11-Gage, Square.....per pound 2.20



## Unique Formed Flexible Wiping Cloths

The permanent curved wiping surface of the formed finishing cloths produces perfectly symmetrical joints, uniform and smoothly finished. No waste of time or no wear on cloths in breaking in. Used successfully on first joint. Solder will not stick to the smooth slick surface. Gives twice the actual service of old style shapeless wiping cloth.

Add for moleskin: Formed cloths, 10 cents; flat catch cloths, 20 cents.

### Ticking, Formed Finish

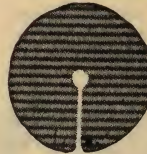
Size.....in.	2x2	2 $\frac{1}{2}$ x2 $\frac{1}{2}$	3x3	3 $\frac{1}{2}$ x3 $\frac{1}{2}$	4x4
Each.....	\$ .40	.40	.50	.50	.60

### Ticking, Flat Catch

Size.....in.	5x5	6x6	6x7	7x8	8x8
Each.....	\$ .80	.90	1.00	1.20	1.30

## Unique Upright Joint Wiping Cloths

The wiping side, which comes in contact with the molten solder is perfectly smooth and free from stitches, laps, folds, seams and edges. The wiping surface is treated to prevent the solder from sticking to the surface.



O.D.....in.	9	11	12	14	17
Each.....	\$1.80	2.50	3.10	3.50	5.00
Hole.....in.	1	1 $\frac{3}{4}$	2 $\frac{3}{4}$	3 $\frac{3}{4}$	6

## Nokorode Soldering Fluid



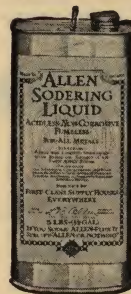
Eliminates the use of corrosive soldering acid.

Ready for instant use.

Solution is strong. May be cut with water for light work.

Size Container.....gallon	1	5	55
Per Gallon.....	\$1.50	1.10	.70

## Allen Neutral Rosin Fluid Flux



Flux of absolute safety for electric motors, telephone, radio, commutators, instrument work, fine wires, etc.

Can be spilled on the work and allowed to remain with no corrosion hazard to finest wire or metals.

Absolutely neutral and moisture free and non-conductive to electrical current.

Size Can or Bottle.....	1 Quart	1 Gallon
Each.....	\$ .85	3.00
No. in Carton.....	3	1

## Allen Soldering Sticks



An economical rapid flux. Just a touch to the hot metal does the work.

Fuses the solder rapidly without fuss, muss or after corrosion. Size, 1x5 $\frac{1}{4}$  inches.

Samson Formula.....each	\$1.15
Standard Formula.....each	.30



### No. 2774 McGill Star and Crescent Soldering Sticks



Each stick is tinfoil wrapped and packed in pasteboard tube with cap ends. Weight per 100 sticks, 22 pounds. No. 2774.....each \$ .25

### Nokorode Soldering Salts



Size Can	Standard Package	Per Pound	Per Carton
1-Lb.	6 to Carton	\$ .50	\$3.00
5-Lb.	Any Quantity	.40	...
25-Lb.	Any Quantity	.30	...
50-Lb.	Any Quantity	.27	...
100-Lb.	In Drum	.24	...

### Crescent Soldering Salts



A combination of several of the most efficient soldering agents in a convenient soluble form. Gives off no obnoxious gases. Much superior to old time acids for the designed purpose.

Price, No. 2779, 1-pound.....each \$ .90  
" " 2780, 1/2 " ..... " .68

### Burnley Soldering Salts



Size Can.....lb.	1/2	1	5
Per Pound.....	\$ .63	.53	.44

### Allen Soldering Salts



These salts are dry and in concentrated form. To make up a perfect flux of sufficient strength to use on old metal add three parts water to one part salts; on new metal, use even greater dilution.

Size Bottle.....	1/2-Lb.	1-Lb.	5-Lb.
Each.....	\$ .40	.59	2.70
No. in Carton.....	12	6	1

### Allen Soldering Paste



A corrosion free, soft form of flux.

Carries Underwriters' approval.

Size Can.....	Job Size	2-Oz.	4-Oz.	1/2-Lb.	1-Lb.	5-Lb.
Each.....	\$ .08	.13	.25	.50	.90	4.40
No. in Carton....	24	24	24	12	6	1

### Allen Ezy-Flo Torch Formula Soldering Paste



Special soldering paste for torch and sweat joint soldering. Works well with the soldering iron.

Size Can.....	Job	2	4	1/2	1	5
Each.....	\$ .08	.13	.25	.50	.90	4.40
No. in Carton	24	24	24	12	6	1

### Nokorode Soldering Paste



This paste will flux all metals except aluminum.

It takes the place of acid in all soldering jobs. Non-corrosive, safe as resin and rapid as acid. Not affected by heat and does not spatter.

The solder will not turn dark after using this paste.

#### In Cartons

Size Can.....	2-Oz.	1-Lb.
Per Can.....	\$ .10	\$ .70
Per Carton.....	1.20	4.20
No. Cans in Carton.....	12	6

#### By Pound

Size Can.....	pounds	10	25	50	100
Per Pound.....		\$ .50	.45	.43	.40

### Burnley Soldering Paste

Requires no preparation.



Size Can Lb.	Per Lb.	Size Can Lb.	Per Lb.
1/8	\$1.40	5	\$ .37
1/4	* 1.90	50	.29
1/2	.44	500	.23
1	.41	...	...

\*Per dozen cans.

### Star and Crescent Soldering Paste



Assures a smooth, even-flowing metal and perfect results. Thoroughly mixed, so that each paste particle contains all the flux elements. Strong and rapid in action and non-corrosive. Packed in tin boxes.

Cat. No.....	2775	2776	2777	2778
Size Tins.....oz.	2	4	8	16
Price.....each	\$ .25	.35	.55	1.00

### Doe Plug Burnishing Paste



For polishing telephone plugs, radio connections, signal systems, and electrical contacts of all kinds.

Non-corrosive. Chemically neutral.

Packed in 2-ounce tin containers.

Per Can.....

### Doe Commutator Burnishing Paste



For cleaning and polishing commutators and slip rings on motors and generators.

Eliminates noise and sparking.

Acts as a lubricant to eliminate undue wear.

Non-corrosive. Chemically neutral.

Packed in 2-ounce tin container.

Per Can.....



## Mueller Universal Test Clips and Insulators



No. 24-A Clip Only



No. 45 Clip with  
No. 47 Insulator

Tests clips save time in electrical work requiring quick temporary connections. May be used over and over again. Flexible insulators are a convenient protection against electric shock and prevent clips from shorting on each other. Furnished half red and half black to indicate polarity. Packed 10 to a box and 10 boxes to a carton.

### Screw Connection

No.	Each	Description	Spread of Jaws In.	Wt. per 100 Lb.
45	\$.06	Pee Wee Clip Only, Cadmium.....	3/8	11 1/4
45-C	.08	5-Amp. Pee Wee Clip Only, Solid Copper	1/4	1 1/4
47	.09	Rubber Insulator for No. 45 or 45-C Clip	...	13 1/4
48-B	.06	Clip Only, Cadmium Plated.....	1/8	2
48-C	.10	10-Amp. Clip Only, Solid Copper.....	1/8	2
82	.14	10-Amp. Needle Clip Only, Cadmium...	1/2	2
49	.09	Rubber Insulator for No. 48-B, 48-C or 82 Clip	...	2
27	.10	Clip Only, Cadmium Plated.....	5/8	3 1/4
27-C	.17	40-Amp. Clip Only, Solid Copper.....	5/8	3 1/2
29	.15	Rubber Insulator for No. 27 or 27-C Clip	...	5 1/4
24-A	.12	25-Amp. Clip Only, Lead Plated.....	1	6 1/4
24	.20	50-Amp. Clip Only, Solid Copper.....	1	7
26	.19	Rubber Insulator for No. 24 or 24-A Clip	...	7
21-A	.17	50-Amp. Clip Only, Lead Plated.....	1 1/4	15

### Lug Connection

21	\$.50	100-Amp. Clip Only, Solid Copper.....	1 1/4	17
23	.33	Rubber Insulator for No. 21 or 21-A Clip	...	13
11-A	.60	100-Amp. Clip Only, Lead Plated.....	1 3/4	35
11	1.00	200-Amp. Clip Only, Solid Copper.....	1 3/4	38
13	.52	Rubber Insulator for No. 11 or 11-A Clip	...	23
33	1.80	300-Amp. Clip Only, Solid Copper.....	2	80
35	1.20	Rubber Insulator for No. 33 Clip.....	...	45

## Mueller Crocodile Clips and Rubber Insulators



No. 85 Clip with  
No. 87 Insulator

**No. 85 Clips**  
Cadmium plated, 5-ampere clip for radio and electrical test work. Long thin nose on clip enables user to make tests in deep recesses. Teeth mesh along entire length of jaw. May be completely insulated. Jaw spread, 3/8 inch.

Packed 10 in box; 100 in carton, weight, 1 1/2 pounds.

No. 85.....each \$.07

### No. 85-C Frequency Test Clips

Phosphor bronze spring and brass screw. Will not heat up due to hysteresis effect. Used on radio transmitting apparatus and electrotherapeutical work.

Packed 10 per box; 100 per carton, weight, 2 pounds.

No. 85-C.....each \$.10

### No. 85-T Tip Clips

Same as No. 85 except that it has a standard phone tip soldered to the front end of the lower jaw. Can be used as a combination test clip and test prod; also for making connections to binding posts having insulated, non-removable heads. Jaw spread, 3/8 inch.

Packed 10 in box; 100 in carton, weight, 1 1/2 pounds.

No. 85-T.....each \$.14

### No. 87 Insulators

For use with both of the above clips. Packed 10 in box, 5 red and 5 black; 100 in carton, weight, 1 pound.

No. 87.....each \$.08

## Mueller Wee-Pee-Wee Clips and Insulators

No. 88 clip with No. 93-P plastic insulator is used in fine electrical and telephone test work.



Clip is made entirely of phosphor bronze. Extremely small and flat jaws with 1/4-inch spread.

Packed 10 in box; 100 in carton, weight, 3/4 pound.

No. 88, Clip.....each \$.15

No. 93-P, Insulator.....each .05

## Mueller Alligator Test Clips



No. 60-S



No. 60-HS

For use in making quick, temporary electrical connections. Has slim jaws, fine meshing teeth, round thumb grip, and barrel connection for banana plug. Bright finish.

No.	Each	Description	Length Inches
60	\$.06	Steel, with Soldering Lip.....	2
60-S	.07	Steel, with Screw Connection.....	2
60-CS	.09	Copper, Screw Connection.....	2
60-HS	.10	Steel, with Red and Black Insulating Sleeves on End, Screw Connection..	2 1/4
60-CHS	.13	Copper, Otherwise Same as No. 60-HS.	2 1/4

## Reliable Testing Clips

For temporary connections to insulated wires. Made of heavy nickel silver with hard sharp insulation puncturing points and perfectly registering teeth



No. 1

Fitted with screw, nut spike, and washer for attaching to instrument cord.

No. 1.....each \$.16

No. 2

Same as No. 1 but with screw, nut and washer omitted. Preferred where connection to cord is to be soldered.

No. 2.....each \$.16

No. 3

Same as No. 1 but without the spike

No. 3.....each \$.16

No. 5



A light, sturdy clip with a strong spring. Convenient for temporary connections in radio, telephone and signal work.

Particularly good for congested telephone equipment.

Plenty of room for soldering flat cord terminals.

No. 5.....each \$.13

## Bryant Bakelite Flat Cord Connectors

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

These devices do not have standard prong spacings.

Have 1/2-inch cord hole.



No. 2956



No. 2958

### No. 2956 Receptacle Portion

For use with No. 2958 only.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2956	\$36.00	10	100	4

### No. 2958 Plug Portion

For use with No. 2956 only.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2958	\$36.00	10	100	5



## Morse Eureka Cord Connectors



Made of hard rubber, with acorn or straight side composition cap.

Polarized at no extra charge.

No. 166A is available in all bakelite.

No. ....	166A	166	167
Per 100 .....	\$ .75	.67	.73
Diameter.....inches	1/2	5/8	3/4
Overall Length.....inches	2 1/2	2 1/2	2 1/2

## Morse Eureka Cord Connectors



Made of hard rubber.  
Bakelite cap.

No. ....	116	117	118
Per 100 .....	\$ .62	.55	.64
Diameter.....inches	1/2	5/8	3/4

## No. 167B Morse Eureka Cord Connectors



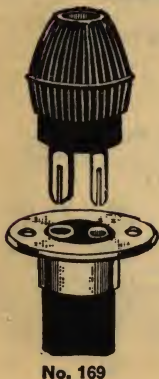
Made of bakelite, with acorn or straight side cap.

Has brass binding screws; and split male stems.

Diameter, 1 1/16 inch. Overall length, 2 1/2 inches.

No. 167B.....each \$ .77

## Morse Eureka Plug Receptacles



Made of hard rubber, with acorn or straight side cap. Can be furnished in bakelite at additional charge.

Nickel plated flange.

Polarized at no extra charge.

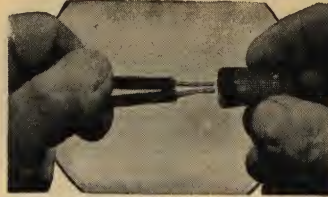
## No. 169

Diameters.....inches	1/2	5/8	3/4
No. 169.....each	\$ .76	.76	.76

## No. 2366

Male in flanged section. Furnished in 5/8-inch diameter only.

No. 2366.....each \$ .75

Ideal \*Wire—Nuts  
Solderless—Tapeless Wire Connectors

Replaces solder and tape, plug connections, terminal blocks, binding posts, etc.

Listed by Underwriters' and Factory

Mutual Laboratories. Recommended by National Electrical Code.

Making a joint with an Ideal Connector is just like screwing a nut on a bolt. The connector simply screws on giving a positive and permanent contact. Spiral metal insert which acts as a current carrying sleeve, presses threads into the wires and binds them together in a vise-like grip—assuring a doubly secure joint.

## No. 72 Fixture-Appliance Type

No.	Description	Per 100	Per 1000
72	For fixture wiring, joints in appliances, etc. Solid or Stranded.....	\$1.65	\$14.71

## No. 73 Junior Universal Type

No.	Description	Per 100	Per 1000
73	For fixture wiring, joints in shallow canopies, signs, etc. For Nos. 14, 16, and 18 up to 2 No. 14 and 2 No. 18 or 4 No. 16 or 5 No. 18 Wires, Solid or Stranded.....	\$1.77	\$15.89

## No. 74 Standard Universal Type

No.	Description	Per 100	Per 1000
74	For all joints of common wiring practice. For Nos. 12, 14, 16 and 18 up to 2 No. 12 and 1 No. 18 or 4 No. 14 and 1 No. 18 Solid or Stranded.....	\$2.24	\$21.18

## No. 76 Large Universal Type

For larger gage wires or where a large number of small wires are to be joined.

No.	Description	Per 100	Per 1000
76	For Nos. 10, 12, 14, 16 and 18 up to 3 No. 10 and 1 No. 18, 6 No. 14 and 1 No. 18, or 4 No. 12 and 1 No. 18 Solid or Stranded.....	\$3.24	\$30.59

\*Trade Mark Reg. U. S. Pat. Office.

## Ideal Porcelain Wire Nuts



## Solderless—Tapeless Wire Connectors

Makes excellent wire joints—fast—at low cost. Ideal for roughing-in and fixture hanging. Joint is strong mechanically, and efficient electrically.

Easy to use—simply strip wire and screw on.

Made in one-piece, high-grade gray porcelain.

Approved by Underwriters' Laboratories, Inc., and Factory Mutual Laboratories.

Packed 100 in a carton.

No. G-3 size joins 2, 3, or 4 No. 18; 1 No. 14, and 1 No. 18

No. G-5 size joins 2, 3, or 4 No. 14; 2 No. 12.

No. ....	G-3	G-5
Per 100 .....	\$ .86	.95
Weight per 1000.....pounds	12	16

## No. 501 Sherman Fixture Connectors



Made of heavy bronze. Has two heavy non-removable headed screws. The Sherman Fixture Connector cannot rust and assures high conductivity.

Will connect all wires up to No. 12 with a maximum of two No. 12 solid or three No. 14 in either end.

Packed in small containers, insuring neat shelf stock and safe deliveries.

Carton, 100 each. Standard package, 500. Standard package weight, 12 pounds. Weight, per 1000, 25 pounds.

No. 501.....per 100 \$10.00



## Sherman Soldering Lugs



Seamless all around. Solder cannot leak out at the closed end. Round end lugs in small sizes are recommended.

Approved and listed by the Underwriters' Laboratories.

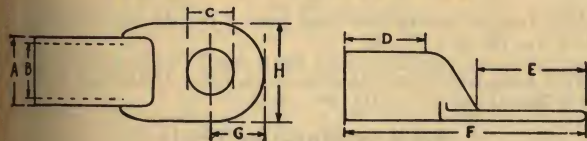
## Round End

Size Inches	Amp. Cap. Rubber Insl. Conductors N. E. C. Std.	Maximum Stranded Cable	Approx. Weight Pounds per 1000
3/16	25	10 A.W.G.	4
1/4	35	8 A.W.G.	6
5/16	50	6 A.W.G.	11
3/8	70	4 A.W.G.	17
7/16	90	2 A.W.G.	24
1/2	125	0 A.W.G.	35
9/16	150	00 A.W.G.	46
5/8	175	000 A.W.G.	60
11/16	225	0,000 A.W.G.	80
13/16	250	250,000 C.M.	120

## \*Square End

Size Inches	Amp. Cap. Rubber Insl. Conductors N. E. C. Std.	Maximum Stranded Cable	Approx. Weight Pounds per 1000
15/16	325	400,000 C.M.	225
1	362	450,000 C.M.	285
1 1/16	400	500,000 C.M.	380
1 1/8	450	600,000 C.M.	420
1 1/2	550	800,000 C.M.	705
1 3/4	650	1,000,000 C.M.	788
2	850	1,500,000 C.M.	1470
2 1/4	1050	2,000,000 C.M.	2765
2 3/8	1200	3,500,000 C.M.	7200

## Approximate Dimensions, Inches



## Round End

A	B	C	D	E	F	G	H
3/16	.136	11/64	3/8	15/32	15/16	7/32	17/64
1/4	.186	13/64	3/8	1 1/2	1 1/2	7/32	3/8
5/16	.232	13/64	3/8	1 1/2	1 1/2	7/32	3/8
3/8	.286	9/32	7/16	1 1/2	1 1/2	9/32	17/32
7/16	.336	9/32	1/2	3/4	1 1/2	11/32	5/8
1/2	.407	11/32	5/8	13/16	1 3/4	13/32	3/4
9/16	.461	13/32	11/16	15/16	2	7/16	3 1/16
5/8	.511	13/32	23/32	1	2 1/8	1 1/2	29/32
11/16	.559	13/32	27/32	1 1/2	2 3/8	1 3/2	1 1/4
13/16	.688	13/32	31/32	1 3/4	2 5/8	5/8	1 1/16

## Square End

A	B	C	D	E	F	G	H
15/16	.776	13/32	13/16	1 5/8	3 3/8	3/4	1 13/32
1	.82	13/32	1 1/4	1 3/4	3 7/16	13/16	1 1/2
1 1/16	.88	13/32	1 1/2	2 1/8	4 1/16	1 1/16	1 9/16
1 1/8	.943	13/32	1 5/8	2 1/4	4 1/16	1	1 11/16
1 1/2	1.084	17/32	2	2 1/2	5	1 1/8	1 15/16
1 3/4	1.21	23/32	2	2 1/2	5 3/8	1 3/16	2 1/8
2	1.46	1 1/32	2 3/8	3 3/8	6 5/8	1 1/16	2 5/8
2 1/4	1.66	1 1/32	2 5/8	3 3/8	7 1/2	1 5/8	3 1/16
2 3/8	2.50	1 1/32	2 3/4	4 1/4	10 3/4	1 3/4	4 1/2

**STUD HOLE.**—Lugs furnished with special size or location of stud holes at same prices as for regular lugs, with extra charge for each size.

**TINNING.**—Lugs tinned will be furnished at extra charge, depending on size.

**MARKING.**—For identification, as approved fittings, lugs will be marked with letter S and Underwriters' rating in amperes.

**To Select Terminals According to the N.E.C. Ratings Governing Knife Switches, Use the Following Equivalents**

Capacity..amperes	30	60	100	200	400	500	800	1000
Size Lug...inches	1/4	3/8	1/2	1 1/16	1 1/16	1 1/16	1 3/4	2 1/16

\*Furnished square end unless specified round.

†Furnished with 3/8 or 13/32-inch stud hole at no extra charge.

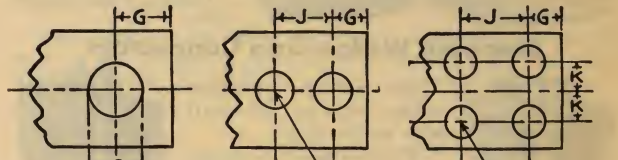
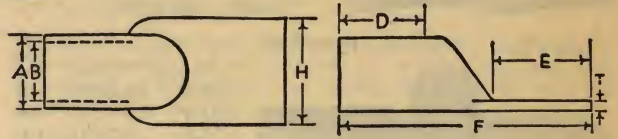
## Sherman Heavy Duty Soldering Lugs

## N.E.L.A. Standard

Made of best quality seamless copper tubing.

Lugs Nos. 8, 8-A, 9-A, 10 and 11 have a sufficient socket diameter to take rope core cables of sizes listed without removing core. Core can be drilled out and space filled with copper plug or solder.

Blank lugs furnished when specified; otherwise regular bolt holes as listed. Special drilling may be had at extra cost if specified. Straight lugs regularly furnished. Angle lugs 45 and 90-degree when specified at extra price. Plain finish unless otherwise specified. Special finishes as follows at added prices: Rosin dipped, cadmium plated, tinned inside only and tinned all over. Special dimensions may be made to order with dimension E other than regular or special drilling of stud holes, at added cost.



## SINGLE BOLT

## TWO BOLT

## FOUR BOLT

Max. Size Conductor Inches	Amp. Rate N.E.C.	Lug No.	Wt., Lb. per 1000	Lug No.	Wt., Lb. per 1000	Lug No.	Wt., Lb. per 1000
19/22	35	1	8	1A	12	...	...
6, B. & S.	50	2	18	2A	25	...	...
2	90	3	80	3A	105	...	...
00	150	4	155	4A	210	...	...
250000	250	5	275	5A	330	...	...
350000	300	6	540	6A	650	...	...
500000	400	...	...	7	1350	...	...
750000	525	...	...	8	2000	8A	2000
1000000	650	...	...	9	3200	9A	2800
1500000	850	...	...	...	...	10	5000
2000000	1050	...	...	...	...	11	8300

## Single Bolt Tongue

Lug No.	A	B	H	D	T	E	F	G	J	K	C
1	.25	.187	.39	.375	.06	.50	1	3/16	1/2	7/16	7/16
2	.313	.232	.47	.50	.08	.75	1 1/2	3/8	1 1/2	7/16	7/16
3	.540	.375	.74	.75	.17	.87	2	3/8	2 1/2	7/16	7/16
4	.675	.494	.97	1.00	.19	1.25	2 3/4	3/4	3 1/2	1 1/2	1 1/2
5	.840	.625	1.22	1.25	.22	1.50	3 1/4	3/4	4 1/2	1 1/2	1 1/2
6	1.050	.822	1.50	1.69	.23	2.25	4 3/4	1	5 1/2	1 1/2	1 1/2
1-A	.25	.187	.39	.375	.06	1.00	1 1/2	3/16	1/2	7/16	7/16
2-A	.313	.232	.47	.50	.08	1.25	2	3/8	1 1/2	7/16	7/16
3-A	.540	.375	.74	.75	.17	1.50	2 3/4	3/8	2 1/2	7/16	7/16
4-A	.675	.494	.97	1.00	.19	2.25	3 1/4	3/4	3 1/2	1 1/2	1 1/2
5-A	.840	.625	1.22	1.25	.22	2.25	4 3/4	3/4	4 1/2	1 1/2	1 1/2
6-A	1.050	.822	1.50	1.69	.23	3.25	5 3/4	3/4	5 1/2	1 1/2	1 1/2
7	1.315	.951	1.87	2.00	.37	3.25	6 1/4	3/4	6 1/2	1 1/2	1 1/2
8	1.66	1.272	2.41	2.56	.39	3.25	6 3/4	3/4	6 3/4	1 1/2	1 1/2
9	1.90	1.49	2.74	3.00	.41	4.25	8 3/8	1	8 1/2	1 1/2	1 1/2

## Four-Bolt Tongue

Lug No.	A	B	H	D	T	E	F	G	J	K	C
8-A	1.66	1.272	2.41	2.56	.39	3.25	6 3/4	3/4	1 1/2	5/8	1 1/2
9-A	1.90	1.49	2.74	3.00	.41	4.25	7 3/8	3/4	1 1/2	5/8	1 1/2
10	2.37	1.93	3.50	3.87	.44	3.25	10	1	1 1/2	1 1/2	1 1/2
11	2.87	2.315	4.25	4.37	.56	4.25	11	1	2	1 1/2	1 1/2

Note.—Dimensions E in larger sizes will be found slightly larger than specified to allow for bending in the field.

## Sherman Soldering Lugs

## 2-Hole

Two-hole lugs are made from seamless tubing and furnished square end, unless otherwise specified.

Flat portion (E) may be made to order either longer or shorter but tubular portion (D) cannot be changed.

Size Inches	Amp. Cap. Rubber Insl. Conductors N.E.C. Std.	C	E	F	G	J	Approx. Weight Pounds per 1000
3/16	25	5/16	3/4	1 1/2	3/8	1/2	5
1/4	35	7/16	3/4	1 1/2	3/8	1/2	8
5/16	50	7/16	1 1/4	1 3/4	3/4	1 1/2	14
3/8	70	1/2	1 1/4	1 3/4	3/4	1 1/2	23
7/16	90	5/8	1 1/4	2 1/4	3/4	1 1/2	34
1/2	125	11/16	1 1/4	2 1/4	3/4	1 1/2	46
9/16	150	1 1/16	2	3 1/4	3/4	1 1/2	68
5/8	175	1 1/8	2	3 1/4	3/4	1 1/2	90
11/16	225	1 1/4	2 1/4	3 1/4	3/4	1 1/2	115
13/16	250	1 1/2	2 3/4	4 1/4	3/4	1 1/2	218
15/16	325	1 5/8	2 3/4	4 1/4	3/4	1 1/2	270
1	362	1 7/8	3	4 1/4	3/4	1 1/2	355
1 1/16	400	2 1/16	3 1/4	5 1/4	3/4	1 1/2	420
1 1/8	450	2 1/8	3 3/8	5 1/4	3/4	1 1/2	475
1 1/4	550	2 1/4	3 1/2	6 1/4	1	1 1/2	845
1 1/2	650	2 1/2	4 3/8	7 1/4	1 1/8	2	1030
1 3/4	850	2 3/4	5 1/8	8 3/8	1 1/4	2 1/4	1850
2 1/16	1050	3 1/16	5 3/8	9 1/4	1 1/2	2 1/4	3200

Dimensions, except as noted are same as standard lugs.



## Sherman Solderless Lugs

### Type SO

Universal in application. Rigid construction. No special tools.



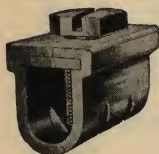
No.	Wire Size	Ctn. Qty.
SO-8	12-8 Str.	200
SO-4	12-4 Str.	100
SO-1/0	3-1/0 Str.	50
SO-4/0	1/0-4/0 Str.	25
SO-500	250-500M	5

### Type SM



No.	Wire Size	Ctn. Qty.
SM-6	14-6 Str.	100
SM-4	14-4 Str.	100
SM-2	6-2 Str.	100
Other sizes available.		

## Sherman Wedge-Grip Connectors



No. SC-6X

For service entrance connections and all small wire connections.

The oval point, hexagon head, non-removable bronze screw wedges wires between V-shaped corrugations.



No. SC-4X

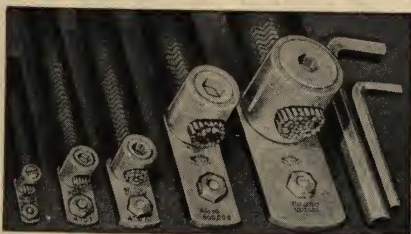
Pure copper body is hard drawn with highest conductivity; needs no taping.

No.	Per 100	B.&S. WIRE GAGE	Strand	Solid	No. in Carton	Weight Pounds per 1000
SC-12X	\$11.45	*2-12	2-20	200	10	
SC-6X	13.00	2-6	2-12	100	25	
SC-6X549	13.00	2-6	2-10	100	25	
SC-4X	16.90	2-4	2-8	100	38	
SC-2X	22.20	2-2	2-4	50	47	

\*Solid.

## Bull Dog Wire Grips

### Solderless Lugs



Cold formed from pure electrolytic copper to provide maximum conductivity and greater mechanical strength. Clear wire holes enable user to see that full and proper contact is made.

Max. Wire Sizes	Max. Amp. Rating	Wt. Lb. Basic Qty.	Front Conn. No.	Back Conn. No.	Per 1000
4	70	250	6	3021	3021BC \$100.00
1	100	100	8	3031	3031BC 170.00
4/0	225	50	7	3041	3041BC 310.00
500M CM.	400	10	8	3052	3052BC 1000.00
1,000M CM.	650	5	8	3062	3062BC 1940.00

### \*Twin Wire Grips

Two 4	70	100	5	3221	\$310.00
Two 1	100	50	8	3231	500.00

\*Two solderless lugs mounted on a common base, with a tongue designed to fit the cable hole of a standard wire grip of similar capacity. Helpful in making multiple connections.

### Socket Wrenches

Nos. 3021 and 3221 require a screwdriver only. Nos. 3031, 3041 and 3231 are primarily designed for tightening with a socket wrench. Nos. 3052 and 3062 require a socket wrench. No. 303SW, for Nos. 3031, 3041 and 3231.....each \$1.15  
No. 306SW, for Nos. 3052 and 3062.....each .40

## T&B Wedge-On Wire Splicers

Approved by Underwriters' Laboratories



For uniting the ends of solid or stranded wire as one.

Made of high-tensile strength bronze.

WIRE SIZE No. Sol.	Str.	No.	Per 100	Ring	SIZE, INCHES Body	Length	Wt. Lb. per 100
16	16	16C	\$25.00	5/16	3/16	13/8	21 1/2
14	14	14C	25.00	5/16	3/16	13/8	21 1/2
12	12	12C	25.00	5/16	3/16	13/8	21 1/2
10	10	10C	25.00	11/32	7/32	13/8	2
9	9	9C	25.00	11/32	7/32	13/8	2
8	8	8C	35.00	7/16	9/32	17/8	4 1/2
6	6	6C	40.00	9/16	3/8	17/8	6
4	4	4C	40.00	9/16	3/8	17/8	6

## T&B Wedge-On Joints

PATENTED

Approved by Underwriters' Laboratories



For joining small wires and making permanent splices quickly without use of solder. Installed with same tool used for Wedge-On lugs and splicers.

WIRE SIZE No. Min.	Max.	No.	Per 100	Car- ton	Std. Pkg.	Wt. Lb. per 100
*14	14	Q-4	\$12.00	100	200	1 3/4
†14	14	Q-5	12.00	100	200	2 1/2

\*Will take wire combinations from 2 No. 14 through 4 No. 14, 3 No. 12, or 2 No. 10.

†Will take wire combinations from 4 No. 14 through 7 No. 14, 5 No. 12 or 3 No. 10.

## T&B Wedge-On Tools



Designed for use with T&B Wedge-On Lugs, Splicers and Joints.

The Wedge-On tool drives the wedge home in a single operation. The pressure per square inch exerted on the wire is several hundred times the pressure applied on the tool, due to the slight taper of the wedge. The serrations inside the wedge provide maximum contact and gripping area.

Packed 1 in a standard package.

Weight, 1 1/2 pounds.

No.	Green Handle	Red Handle	Blue Handle
No. ....	21000	21001	21004
Each. ....	\$5.00	5.00	5.00
For Wire Size, No. ....	8 to 16	8, 6 & 4	22, 18, 16 & 14

## T&B Wedge-On Lugs



Approved by Underwriters' Laboratories

Copper body; plug of bronze, electro-tinned.

No.	Per 100	Wire Size No.	Bolt Diam. No. or Inches	Std. Pkg.	Unit Quan.	Wt., Lb. per 1000
18L100	\$5.00	22 to 18	8	200	100	4 1/2
16L100	5.00	16	10	200	100	6 1/2
14L100	5.00	14	10	200	100	8
12L100	6.00	12	12	200	100	10
10L100	7.00	10	12	200	100	11
9L101	7.50	9	1 1/4	200	100	18
8L100	8.00	8	1 1/4	200	50	21
6L100	9.00	6 Stranded	1 1/4	200	50	28
6SL100	9.00	6 Solid	1 1/4	200	50	28
4L100	10.00	4 Stranded	1 1/4	200	50	32
4SL100	10.00	4 Solid	1 1/4	200	50	32



## T&amp;B Sta-Kon Solderless Terminals



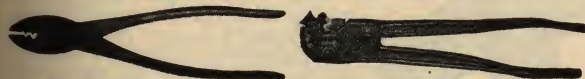
A secure mechanical grip on the wire is produced by the pressure of the stake-mark, which parallels the strands.

Wire Size A.W.G.	No.	Per 1000	Car- ton	Std. Pkg.	Wt. Lb. per 1000
22, 20, 18	A18-6	\$5.00	100	1000	11½
22, 20, 18	A18-10	5.00	100	1000	11½
22, 20, 18	A18-14	5.00	100	1000	3
16, 14	B14-6	5.00	100	2000	2½
16, 14	B14-10	5.00	100	2000	3
16, 14	B14-14	5.00	100	2000	3½
12, 10	C10-6	6.00	50	1000	4½
12, 10	C10-10	6.00	50	1000	5
12, 10	C10-14	6.00	50	1000	5½
12, 10	C10-516	6.00	50	1000	7½
9, 8, 7	D8-10	10.00	25	500	10
9, 8, 7	D8-14	10.00	25	500	12
9, 8, 7	D8-516	10.00	25	500	16
6, 5	E6-14	12.00	20	200	17
6, 5	E6-516	12.00	20	200	20
6, 5	E6-38	12.00	20	200	20
4, 3	F4-14	15.00	20	200	24
4, 3	F4-516	15.00	20	200	25
4, 3	F4-38	15.00	20	200	25
2, 1	G1-14	25.00	10	100	40
2, 1	G1-516	25.00	10	100	47
2, 1	G1-38	25.00	10	100	45
<b>Series H to M</b>					
1/0	H10-14	30.00	10	100	42
2/0	J20-38	35.00	10	100	60
3/0	K30-38	45.00	5	50	82
4/0	L40-38	50.00	5	50	110
MCM 250	M250-38	60.00	5	50	135

## T&amp;B Sta-Kon Two and Four-Way Connectors

Two-Way						Four-Way					
Wire Size A.W.G.	No.	Per 1000	Car- ton	Std. Pkg.	Wt. Lb. per 1000	No.	Per 1000	Car- ton	Std. Pkg.	Wt. Lb. per 1000	
22, 20, 18	2A18	\$7.00	100	1000	2½	4A18	\$14.00	50	500	5	
16, 14	2B14	7.00	100	1000	3½	4B14	14.00	50	500	6	
12, 10	2C10	8.00	50	500	7	4C10	16.00	25	250	13	
9, 8, 7	2D8	15.00	25	250	19						
6, 5	2E6	18.00	20	200	27						
4, 3	2F4	20.00	15	150	36						

## T&amp;B Sta-Kon Hand Tools



No. WT-111M

No. WT-115

Used to install Sta-Kon terminals. Every tool accommodates several sizes of terminals and tips. Standard package, 1.

No. WT-111M \$5.00 WT-115 31.00 21076 35.00

For Use on Wire Nos. 22 to 0 8 to 1 2, 1, 1/0, 0, 2/0, 3/0 4/0, 250M CM

Color of Handle..... Red Black Grey

Weight..... pounds ¾ 4½ 5

## No. WT-116 Holders

For Nos. WT-115 or 21076 tools for bench mounting. Standard package, 1.

No. WT-116, Weight, 2½ Pounds.....each \$2.00

Power tools for rapid high production installations are also available. Information on request.

## No. 20 T&amp;B Sta-Kon Terminal Kits

Designed for work on electric wires No. 22 to 10 inclusive.

## Contents

One box of 100 terminals for wire sizes Nos. 22 to 18, to fit No. 8 or 10 bolt.

One box of 100 terminals for wire size Nos. 16 to 14, to fit No. 8 or 10 bolt.

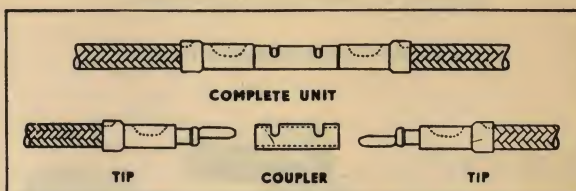
One box of 50 terminals for wire size Nos. 12 to 10, to fit No. 8 or 10 bolt. One installing tool.

No. 20.....each \$10.00



## T&amp;B Sta-Kon Disconnect Splices

Listed by Underwriters' Laboratories



A quick connect and disconnect splice which employs the Sta-Kon method of terminating the wires to splicer tips, providing an electrical joint which can be made and unmade innumerable times.

Complies with Army Air Corps and Navy Department Bureau of Aeronautics resistance requirements.

Male tips are identical, and when assembled to center section are in wiping contact with each other under constant pressure of beryllium copper center unit.

No.	Description	Wire Size No.	Max. Wire Cap. In.	Min. Wire Cap. In.	Max. Insula- tion In.	Over- all Diam. In.	Over- all Lgth. In.
A-57	Complete A Splicer	22-18	.050	.025	.115	¾	1½
A-50	A Tip.....						
7	A or B Coupler....						
B-57	Complete B Splicer	16-14	.080	.051	.140	1¼	1½
B-50	B Tip.....						
7	A or B Coupler....						
C-58	Complete C Splicer	12-10	.122	.081	....	½	1½
C-50	C Tip.....						
8	C Coupler.....						

Prices and complete information on request.

## T&amp;B Lug-Its

Approved by Underwriters' Laboratories, Inc.



For stranded or solid wire. Double thickness at thread gives double thread strength and locking action.

Serrated copper tongue gives high conductivity.

Bronze body provides strength.

All parts are electro-tinned for enduring contact.

Bodies may be purchased separately for assembly to equipment as a "built-in" unit.

WIRE SIZE		No.	Each	Bolt Hole Size In.	Lgth. In.	Width In.	Car- ton	Std. Pkg.	Wt. Lb. per 1000
Min.	Max.								
14	6	35301	\$ .10	¼	1½	¾	250	1000	24
8	2	35401	.15	¼	1½	1½	250	1000	50
4	2/0	35501	.30	¼	1½	¾	100	500	115
1/0	4/0	35601	.50	¾	2½	1	25	100	225

## T&amp;B Type PC Parallel Connectors

For Solid or Stranded Wire

Approved by Underwriters' Laboratories



For connecting ends of solid or stranded wire. Can be used for connections of service runs to drops, at motor outlets, for splicing wire in cabinets, etc.

Screw cannot touch the wire. Built-in contact shield is curved and corrugated for maximum conductivity and strength.

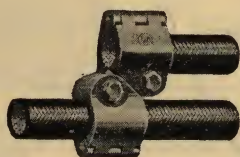
WIRE SIZE Min.	Max.	No.	Per 100	Width Inches	Height of Body Inches	Thick- ness Inches	Std. Pkg.
8	10	PC-8	\$30.00	¾	1½	1½	100
6	8	PC-6	32.00	1	1½	1½	100
4	6	PC-4	40.00	1½	1½	1½	100
2	4	PC-2	55.00	1½	1½	1½	100



## T&amp;B Solderless Connectors

Approved by Underwriters' Laboratories

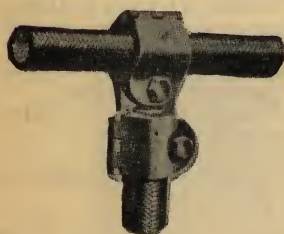
## Hinjon Parallel Gutter Taps



Designed to take stranded wire or cable.  
Precision made for one size only. If other than standard (A.W.G.) stranded wire or cable is to be used, specify conductor.

Size A.W.G. Main and Branch	No.	Each	DIMENSIONS, INCHES	
			Overall Length	Overall Width
4	41002	\$1.20	2 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>
2	41009	1.20	2 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>
1/0	41027	1.40	2 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>
2/0	41035	1.40	2 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>
3/0	41044	1.60	3 <sup>3</sup> / <sub>16</sub>	1 <sup>13</sup> / <sub>16</sub>
4/0	41054	2.00	3 <sup>3</sup> / <sub>16</sub>	1 <sup>15</sup> / <sub>16</sub>
M CM				
250	41065	2.20	3 <sup>3</sup> / <sub>16</sub>	1 <sup>15</sup> / <sub>16</sub>
300	41077	2.50	3 <sup>3</sup> / <sub>16</sub>	1 <sup>15</sup> / <sub>16</sub>
350	41090	2.80	3 <sup>11</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>
400	41104	2.90	3 <sup>11</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>
500	41135	4.20	3 <sup>11</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>
750	41230	5.60	5 <sup>1</sup> / <sub>4</sub>	2
1000	41350	7.60	5 <sup>11</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>8</sub>

## Hinjon Cable Tee Taps



Type TH, Special Tap;  
Tee Tap Hinjon Main to  
Multiple Tite-Bind Branch.

Made for specific sizes of conductors. There is a different size for each combination of main and branch, assuring a perfect fit.

Size A.W.G. Main and Branch	No.	Each	DIMENSIONS, INCHES	
			Overall Length	Overall Width
4	40002	\$1.40	2 <sup>9</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>8</sub>
2	40009	1.50	2 <sup>9</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>8</sub>
1/0	40027	1.80	2 <sup>9</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>8</sub>
2/0	40035	2.00	2 <sup>9</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>8</sub>
3/0	40044	2.40	3 <sup>1</sup> / <sub>4</sub>	1 <sup>13</sup> / <sub>16</sub>
4/0	40054	2.40	3 <sup>1</sup> / <sub>4</sub>	1 <sup>15</sup> / <sub>16</sub>
M CM				
250	40065	3.00	3 <sup>1</sup> / <sub>4</sub>	1 <sup>15</sup> / <sub>16</sub>
300	40077	3.00	3 <sup>1</sup> / <sub>4</sub>	1 <sup>15</sup> / <sub>16</sub>
350	40090	4.20	3 <sup>25</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>32</sub>
400	40104	4.20	3 <sup>25</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>32</sub>
500	40135	5.20	3 <sup>25</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>32</sub>
750	40230	8.60	4 <sup>11</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>
1000	40350	13.20	5 <sup>1</sup> / <sub>4</sub>	2 <sup>13</sup> / <sub>16</sub>
1250	40398	16.20	6 <sup>3</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>16</sub>
1500	40435	20.00	6 <sup>3</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>16</sub>
1750	40497	23.00	6 <sup>13</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>32</sub>
2000	40569	27.00	6 <sup>13</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>32</sub>

## T&amp;B Tite-Bind Lugs

Approved by Underwriters' Laboratories



Precision-made for one size cable for each size lug.

Tapered cone construction insures perfect, permanent contact.

Easily installed with only a wrench.

All lugs are designed to take stranded cable unless otherwise noted.

## One-Bolt Hole

Cable Size No.	No.	Each	Cable Size MCM	No.	Each
8	22122	\$ .40	350	22148	\$2.40
6	22124	.50	400	22149	2.40
4	22126	.50	500	22151	2.90
2	22132	.70	750	22156	5.00
1/0	22138	.90	1000	22161	5.80
2/0	22140	1.10	1250	22164	8.20
4/0	22144	1.50	1500	22167	11.00
MCM			1750	22170	12.80
250	22146	1.90	2000	22173	14.80
300	22147	1.90	....	.....	.....

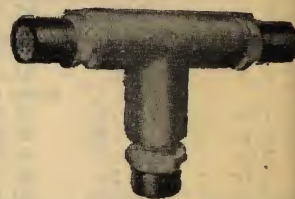
Table lists popular sizes. Many other 1-bolt and 2-bolt lugs are available upon order.

## T&amp;B Tite-Bind Connectors

Approved by Underwriters' Laboratories



Two-Way



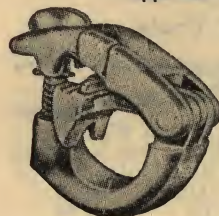
Three-Way

**Two-Way** connectors are available in the same range of cable sizes as Tite-Bind lugs listed above.

**Three-Way** connectors are available in the same range of cable sizes as Tite-Bind lugs listed above. Can also be furnished in any combination of sizes.

## T&amp;B Hinjon Junior Tee-Parallel Tap-In-One

Approved by Underwriters' Laboratories



Will take any type wire, cable, or tubing that will go into the fitting.

Installation consists of skinning the main, inserting the branch and tightening. Tightening locks the threads; vibration-proof.

Made of high conductivity bronze.

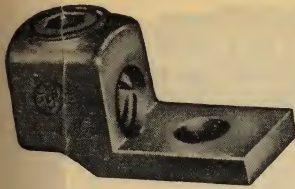
No.	CABLE SIZE		Each
	Main	Branch	
35107	No. 8 to 4.....	No. 14 to 8	\$ .85
35108	No. 8 to 4.....	No. 8 to 4	.90
35109	No. 4 to 1/0.....	No. 14 to 4	1.00
35110	No. 4 to 1/0.....	No. 4 to 1	1.20
35111	1/0 to 4/0.....	No. 14 to 4	1.40
35112	1/0 to 4/0.....	No. 8 to 1	1.50
35113	4/0 to 300,000 C.M.....	No. 14 to 4	1.60
35114	4/0 to 300,000 C.M.....	No. 8 to 1	1.80
35115	300,000 to 500,000 C.M.....	No. 14 to 4	2.30
35116	300,000 to 500,000 C.M.....	No. 8 to 1	2.80
35118	500,000 to 750,000 C.M.....	No. 14 to 1	3.60
35120	750,000 to 1,000,000 C.M.....	No. 14 to 1	4.80

**CONNECTORS**  
We can supply Connectors  
for  
Aluminum Conductors



## T&B Lock-Tite Lugs

Approved by Underwriters' Laboratories



Fits any kind of cable—solid, flexible, stranded hemp-core, etc. Easily installed with key wrench. Resists vibration because it is locked tight. Has a sturdy, overlapping cable-shield which nests inside an oval-shaped recess in the body.

A shake-proof locking disc, built into the cable shield, assures permanent tightness.

### Single Bolt Hole

Cable Size No.	Lug No.	Each	Key Wrench No.	Each
4-1	31007	\$ .70	30	\$ .20
1-2/0	31009	1.10	30	.20
2/0-4/0	31011	1.50	30	.20
4/0-300M CM	31013	1.90	50	.30
300-500M CM	31015	2.90	50	.30
500-750M CM	31017	5.00	50	.30
750-1000M CM	31019	5.80	50	.30

## T&B Lock-Tite Stud Connectors



Suitable for all types of connections, from cable to flat bus, or to any device with a drilled hole.

Also used for current transformer installations, and for attaching ground to steel transmission towers.

## T&B Lock-Tite Tee-Parallel Taps

Approved by Underwriters' Laboratories



Will do the work of 264 conventional type tee and parallel taps. Takes any type wire within its range as well as round or tubular bus of equivalent diameters. Body sizes open wide to allow easiest imaginable assembly to main and branch.

One-piece; no detachable parts.

Can be used in any position: the branch can be run above, below or alongside the main on a parallel job; above, or below the main on a tee job, by swinging the tap to desired position.

No.	Main	Cable Size	Branch	Each
35003	1/0 to 4/0	No. 2 Solid & Strand to No. 1	1/0 to 4/0	\$1.80
35005	1/0 to 4/0	No. 2 Solid & Strand to No. 1	1/0 to 4/0	2.40
35007	4/0 to 300 M.C.M.	No. 2 Solid & Strand to 1/0	2/0 to 300 M.C.M.	2.20
35009	4/0 to 300 M.C.M.	No. 2 Solid & Strand to 1/0	2/0 to 300 M.C.M.	3.00
35011	300 to 500 M.C.M.	No. 2 Solid & Strand to 3/0	4/0 to 500 M.C.M.	3.90
35013	300 to 500 M.C.M.	No. 2 Solid & Strand to 3/0	4/0 to 500 M.C.M.	5.20
35015	500 to 750 M.C.M.	No. 2 Solid & Strand to 3/0	4/0 to 500 M.C.M.	5.50
35017	500 to 750 M.C.M.	No. 2 Solid & Strand to 3/0	4/0 to 500 M.C.M.	7.00
*35019	500 to 750 M.C.M.	No. 2 Solid & Strand to 3/0	4/0 to 500 M.C.M.	8.60
35021	750 to 1000 M.C.M.	No. 2 Solid & Strand to 3/0	4/0 to 500 M.C.M.	6.50
35023	750 to 1000 M.C.M.	No. 2 Solid & Strand to 3/0	4/0 to 500 M.C.M.	8.40
*35025	750 to 1000 M.C.M.	No. 2 Solid & Strand to 3/0	4/0 to 500 M.C.M.	11.00
*35027	750 to 1000 M.C.M.	No. 2 Solid & Strand to 3/0	4/0 to 500 M.C.M.	13.20

\*With 2 clamping screws.

## T&B Lock-Tite Two-Way Connectors

Approved by Underwriters' Laboratories



Cable Size No.	Connector No.	Each	Key Wrench No.	Each
4-1	32507	\$1.00	30	\$ .20
1-2/0	32509	1.50	30	.20
2/0-4/0	32511	2.20	30	.20
4/0-300M CM	32513	3.00	50	.30
300-500M CM	32515	5.20	50	.30
500-750M CM	32517	8.00	50	.30
750-1000M CM	32519	10.00	50	.30

## T&B Disconnect Hangers

10 Amperes, 250 Volts

Listed Under Reexamination Service of Underwriters' Laboratories



Provides a safety disconnect for light and power circuits. Can be used with other types of industrial lighting fixtures.

Made of tough malleable iron. Each hanger consists of a locking hook with a polarized receptacle and a bushed loop. Supports the fixture or pendent outlet and cannot be unhooked until the plug is out and the fixture dead. The plug closes the hook so the loop cannot be removed while the plug is in place.

To unhook for either cleaning the fixture or replacing burnt out bulbs, simply pull out plug and lift the loop over the open hook.

Loops have standard female threads. Are easily transformed to the same size male threads by use of close nipple. The male threads on the locking hooks can be converted to female thread by use of a standard conduit coupling.

### Disconnect Hangers

With 2-Wire Receptacle and Bushed Loops

No.	Each	Male Thrd. on Hook In.	Female Thrd. on Loop In.	Std. Pkg.	Weight Pounds per 100
6140	\$2.75	1/2	1/2	10	100
6141	2.75	1/2	3/4	10	105
6142	2.75	3/4	1/2	10	110
6143	2.75	3/4	3/4	10	115

With 3-Wire Receptacle and Bushed Loops

No.	Each	Male Thrd. on Hook In.	Female Thrd. on Loop In.	Std. Pkg.	Weight Pounds per 100
6144	\$6.00	1/2	1/2	10	130
6145	6.00	1/2	3/4	10	135
6146	6.00	3/4	1/2	10	140
6147	6.00	3/4	3/4	10	145

### Disconnect Cushion Hangers

With 2-Wire Receptacle and Cushion Loop

No.	Each	Male Thrd. on Hook In.	Loop for Weight Pounds	Std. Pkg.	Weight Pounds per 100
6160	\$3.25	1/2	3 to 6	10	120
6161	3.25	1/2	6 to 12	10	120
6162	3.25	1/2	12 to 24	10	120
6163	3.25	3/4	3 to 6	10	130
6164	3.25	3/4	6 to 12	10	130
6165	3.25	3/4	12 to 24	10	130

With 3-Wire Receptacle and Cushion Loop

No.	Each	Male Thrd. on Hook In.	Loop for Weight Pounds	Std. Pkg.	Weight Pounds per 100
6170	\$6.50	1/2	3 to 6	10	150
6171	6.50	1/2	6 to 12	10	150
6172	6.50	1/2	12 to 24	10	150
6173	6.50	1/2	3 to 6	10	160
6174	6.50	1/2	6 to 12	10	160
6175	6.50	1/2	12 to 24	10	160



## O.Z. Type XW Combination 2-Way Connectors



High clamping pressure is exerted by the pressure plates, insuring high conductivity.

Can be used as a reducing connector within the wire limitations of each fitting. Wrenches for socket set-screws furnished without cost. Covers cannot be furnished.

No.	Each	CONDUCTOR RANGE EITHER END	
		Minimum	Maximum
XW0101	\$5.00	No. 4 Sol.	No. 1 Str.
XW2222	.75	1 Str.	2/0 Str.
XW2424	1.10	2/0 Str.	4/0 Str.
XW3030	1.50	4/0 Str.	300 Mem
XW5050	2.60	300 Mem	500 Mem
XW7575	4.00	500 Mem	750 Mem
XW9292	5.00	750 Mem	1000 Mem

## O.Z. Type XLH Solderless Combination Lugs



Cast copper alloy fitting made so high clamping pressure is exerted by pressure plate insuring high conductivity.

Available with socket set-screws at same price.

No.	Each	Holes	CONDUCTOR RANGE	
			Minimum	Maximum
XLH041	\$2.25	1	No. 8 Sol.	No. 4 Str.
XLH011	.35	1	4 Sol.	1 Str.
XLH012	.45	2	4 Sol.	1 Str.
XLH221	.55	1	1 Str.	2/0 Str.
XLH222	.65	2	1 Str.	2/0 Str.
XLH241	.75	1	2/0 Str.	4/0 Str.
XLH242	.85	2	2/0 Str.	4/0 Str.
XLH301	.95	1	4/0 Str.	300 Mem
XLH302	1.05	2	4/0 Str.	300 Mem
XLH501	1.45	1	300 Mem	500 Mem
XLH502	1.65	2	300 Mem	500 Mem
XLH751	2.50	1	500 Mem	750 Mem
XLH752	2.50	2	500 Mem	750 Mem
XLH921	2.90	1	750 Mem	1000 Mem
XLH922	3.20	2	750 Mem	1000 Mem

### O.Z. Type XTP Combination Parallel & T Connectors



Used as either a T or parallel tap, designed to take a wide range of wire sizes on main or tap. One-piece construction eliminates detachable parts and permits easy assembly. Castings are of high conductive copper alloy. Connection with main feeder line is made by closing hinge over cable.

No.		Each	CONDUCTOR RANGE	
			Main	Tap
XTP2104	\$ .75		4-1/0	8-4
XTP2121	.90		4-1/0	4-1/0
XTP2404	.80		1/0-4/0	8-4
XTP2421	.95		1/0-4/0	4-1/0
XTP2424	1.20		1/0-4/0	1/0-4/0
XTP3004	.90		4/0-300MCM	8-4
XTP3021	1.10		4/0-300MCM	4-1/0
XTP3024	1.35		4/0-300MCM	1/0-4/0
XTP3030	1.50		4/0-300MCM	4/0-300MCM
XTP5004	1.50		300MCM- 500MCM	8-4
XTP5021	1.70		300MCM- 500MCM	4-1/0
XTP5024	1.95		300MCM- 500MCM	1/0-4/0
XTP5030	2.10		300MCM- 500MCM	4/0-300MCM
XTP5050	2.60		300MCM- 500MCM	300MCM-500MCM
XTP7521	2.50		500MCM- 750MCM	4-1/0
XTP7524	2.75		500MCM- 750MCM	1/0-4/0
XTP7530	2.90		500MCM- 750MCM	4/0-300MCM
XTP7550	3.50		500MCM- 750MCM	300MCM-500MCM
XTP7575	4.30		500MCM- 750MCM	500MCM-750MCM
XTP9221	3.00		750MCM-1000MCM	4-1/0
XTP9224	3.25		750MCM-1000MCM	1/0-4/0
XTP9230	3.50		750MCM-1000MCM	4/0-300MCM
XTP9250	4.20		750MCM-1000MCM	300MCM- 500MCM
XTP9275	5.50		750MCM-1000MCM	500MCM- 750MCM
XTP9292	6.00		750MCM-1000MCM	750MCM-1000MCM

### O.Z. Type PC Parallel Cable Clamps



Used for connecting parallel wire.

Made of high copper alloy, insuring high conductivity and corrosion resistance.

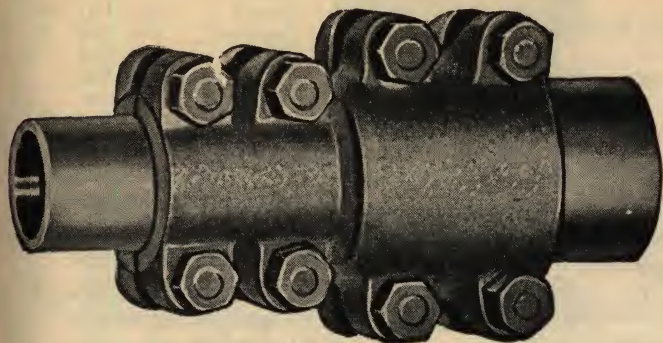
High bolting pressure is exerted by Everdur bolts, nuts and lock washers.

Sizes other than listed available upon request.

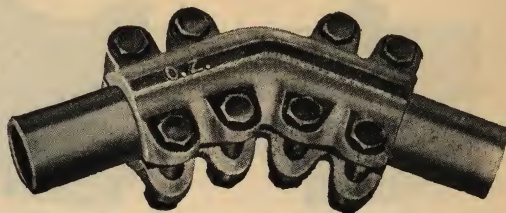
Cable Size				Cable Size			
Main No.	Tap No.	No.	Each	Main MCM	Tap No.	No.	Each
4	4	PC0404	\$ .85	400	*300	PC4030	\$3. 60
2	4	PC0204	1.05	400	*350	PC4035	3.60
2	2	PC0202	1.05	400	*400	PC4040	3.60
1	4	PC0104	1.10				
1	2	PC0102	1.10	500	1/0	PC5021	3.60
1	1	PC0101	1.10	500	2/0	PC5022	3.60
1/0	4	PC2104	1.20	500	3/0	PC5023	3.60
1/0	2	PC2102	1.20	500	4/0	PC5024	3.60
1/0	1	PC2101	1.20	500	*250	PC5025	3.60
1/0	1/0	PC2121	1.20	500	*300	PC5030	3.60
2/0	4	PC2204	1.20	500	*350	PC5035	3.60
2/0	2	PC2202	1.20	500	*400	PC5040	3.60
2/0	1	PC2201	1.20	500	*500	PC5050	3.60
2/0	1/0	PC2221	1.20	600	1/0	PC6021	4.50
2/0	2/0	PC2222	1.20	600	2/0	PC6022	4.50
3/0	4	PC2304	1.95	600	3/0	PC6023	4.50
3/0	2	PC2302	1.95	600	4/0	PC6024	4.50
3/0	1	PC2301	1.95	600	*250	PC6025	4.50
3/0	1/0	PC2321	1.95	600	*300	PC6030	4.50
3/0	2/0	PC2322	1.95	600	*350	PC6035	4.50
3/0	3/0	PC2323	1.95	600	*400	PC6040	4.50
4/0	4	PC2404	1.95	600	*500	PC6050	4.50
4/0	2	PC2402	1.95	600	*600	PC6060	4.50
4/0	1	PC2401	1.95				
4/0	1/0	PC2421	1.95	700	1/0	PC7021	5.00
4/0	2/0	PC2422	1.95	700	2/0	PC7022	5.00
4/0	3/0	PC2423	1.95	700	3/0	PC7023	5.00
4/0	4/0	PC2424	1.95	700	4/0	PC7024	5.00
MCM				700	*250	PC7025	5.00
				700	*300	PC7030	5.00
250	4	PC2504	2.55	700	*350	PC7035	5.00
250	2	PC2502	2.55	700	*400	PC7040	5.00
250	1	PC2501	2.55	700	*500	PC7050	5.00
250	1/0	PC2521	2.55	700	*600	PC7060	5.00
250	2/0	PC2522	2.55	700	*700	PC7070	5.00
250	3/0	PC2523	2.55				
250	4/0	PC2524	2.55	750	1/0	PC7521	5.45
250	*250	PC2525	2.55	750	2/0	PC7522	5.45
300	4	PC3004	2.55	750	3/0	PC7523	5.45
300	2	PC3002	2.55	750	4/0	PC7524	5.45
300	1	PC3001	2.55	750	*250	PC7525	5.45
300	1/0	PC3021	2.55	750	*300	PC7530	5.45
300	2/0	PC3022	2.55	750	*350	PC7535	5.45
300	3/0	PC3023	2.55	750	*400	PC7540	5.45
300	4/0	PC3024	2.55	750	*500	PC7550	5.45
300	*250	PC3025	2.55	750	*600	PC7560	5.45
300	*300	PC3030	2.55	750	*700	PC7570	5.45
350	1/0	PC3521	3.60	750	*750	PC7575	5.45
350	2/0	PC3522	3.60				
350	3/0	PC3523	3.60	1000	4/0	PC9224	6.70
350	4/0	PC3524	3.60	1000	*250	PC9225	6.70
350	*250	PC3525	3.60	1000	*300	PC9230	6.70
350	*300	PC3530	3.60	1000	*350	PC9235	6.70
350	*350	PC3535	3.60	1000	*400	PC9240	6.70
400	1/0	PC4021	3.60	1000	*500	PC9250	6.70
400	2/0	PC4022	3.60	1000	*600	PC9260	6.70
400	3/0	PC4023	3.60	1000	*700	PC9270	6.70
400	4/0	PC4024	3.60	1000	*750	PC9275	6.70
400				1000	*800	PC9280	6.70
400	*250	PC4025	3.60	1000	*900	PC9290	6.70
				1000	*1000	PC9292	6.70
*MCM							



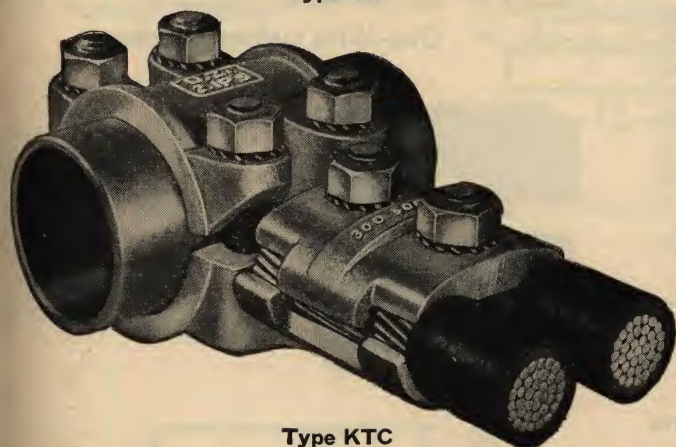
## O. Z. Power Connectors



Type UM



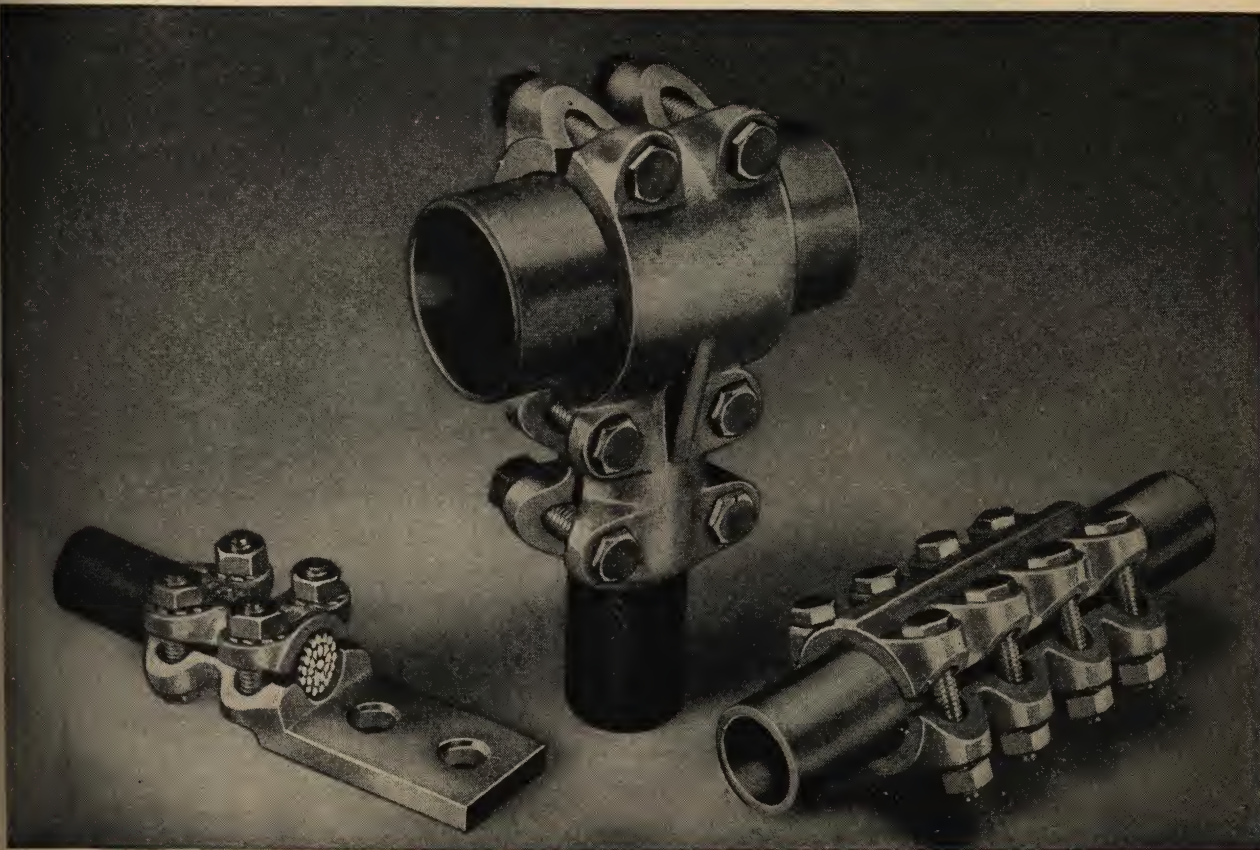
Type UA



Type KTC

**HEX-CUP** construction makes these fittings easy to install as only one tool is required for installation.

Prices on the types illustrated and on types HT, UT, HW, HM, KM, HL, UA, UE, UWT, and UWX are furnished upon request.



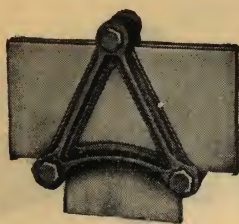
Type HL

Type KT

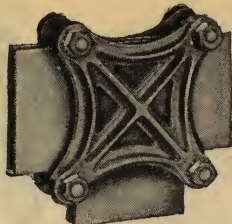
Type UW



## O.Z. Bronze Bus Bar Clamps



Type AC



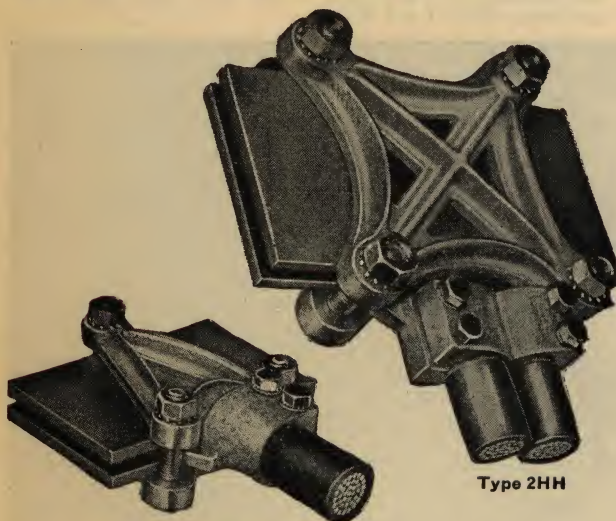
Type HC

Both halves are made of bronze. Bolts are made of Everdur alloy.

Sizes other than listed are available upon request.

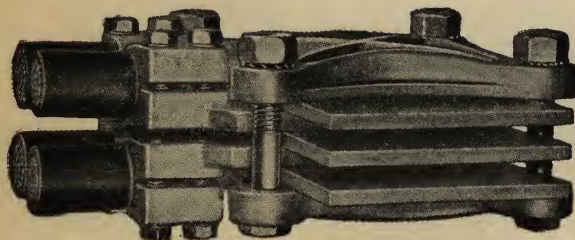
WIDTH OF BARS, IN. Main	Tap	Type AC		Type HC		DIMENSIONS, INCHES		
		No.	Each	No.	Each	Length	Width	Height
2	2	AC22	\$2.00	HC22	\$2.60	3 1/4	3 1/4	3/4
3	2	AC32	2.20	HC32	2.80	4 5/16	3 3/16	1 1/16
3	3	AC33	2.30	HC33	2.90	4 1/2	4 1/2	7/8
4	2	AC42	2.80	HC42	3.50	5 3/16	3 3/16	1 1/16
4	3	AC43	3.00	HC43	3.80	5 1/2	4 1/2	7/8
4	4	AC44	3.10	HC44	3.90	5 11/16	5 11/16	1 1/16
5	2	AC52	4.00	HC52	5.20	6 1/2	3 1/2	1 1/16
5	3	AC53	4.30	HC53	5.50	6 1/2	4 1/2	1 1/16
5	4	AC54	4.50	HC54	5.70	6 11/16	5 11/16	1
5	5	AC55	4.70	HC55	5.90	6 11/16	6 11/16	1 1/16
6	2	AC62	6.80	HC62	8.80	7 1/2	3 1/2	1
6	3	AC63	7.20	HC63	9.20	7 1/2	4 1/2	1
6	4	AC64	7.40	HC64	9.40	7 11/16	5 11/16	1 1/16
6	5	AC65	7.60	HC65	9.60	7 11/16	6 11/16	1 1/16
6	6	AC66	7.80	HC66	9.80	8 1/16	8 1/16	1 1/4

## O.Z. Bus Bar Clamps and Lug T-Connections



Type 2HH

Type 1HA



Type 4HH

Available in types ULA and ULH for bus bar to tube connections. Prices on request.

## No. 334 Standard 2-Wire Porcelain Cleats

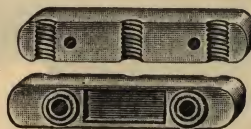


Cat. No.	334
Glazed.....per 1000	\$90.00
Unglazed.....per 1000	52.00
Height.....inches	1 1/8
Width.....inches	1 1/16
Length.....inches	3 1/2
Size Wire.....inches	12 to 14

Std. Pkg.....pairs 2000

Wt. per 1000....pounds 225

## No. 337 Standard 3-Wire Porcelain Cleats



Cat. No.	337
Height.....inches	1 1/8
Width.....inches	1 1/16
Length.....inches	3 1/2
Size Wire.....gage	12 to 14
No. Prs. per Std. Bbl.	2000
Wt. per 1000.....lb.	225

Glazed.....per 1000 \$90.00

Unglazed.....\$52.00

## One-Wire Glazed Cleats

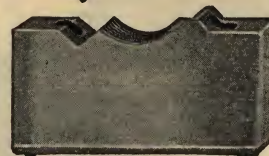
## White Glaze Standard



The Style R (regular) wire grooves are 1/2 inch from surface of both cap and base.

Style A wire grooves are 1 inch from surface to base, and 1/2 inch from surface of cap.

Style B wire grooves are 1 inch from surface of both cap and base.

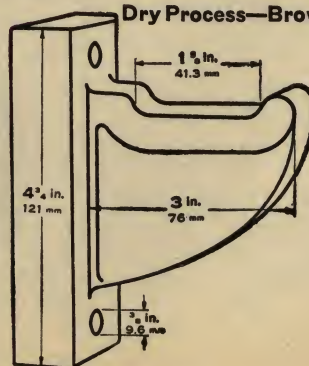


Style A

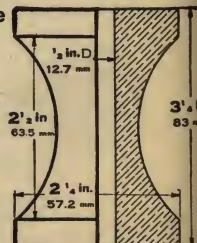
Cat. No.	Per 1000 Pair	Takes Wire Sizes	Size Groove In.	No. Pr. per Barrel	Ship. Wt. Lb. per 1000 Pair
1R	\$74.00	14-2	3/16 - 1/2	2800	170
1A	80.00	14-2	3/16 - 1/2	2400	220
1B	86.00	14-2	3/16 - 1/2	1800	270
1 1/2 R	96.00	6-1	3/8 - 9/16	1800	260
1 1/2 A	108.00	6-1	3/8 - 9/16	1400	340
1 1/2 B	120.00	6-1	3/8 - 9/16	1150	420
2R	110.00	4-00	7/16 - 11/16	1500	310
2A	120.00	4-00	7/16 - 11/16	1200	395
2B	140.00	4-00	7/16 - 11/16	1000	480
2 1/2 R	140.00	4-0000	7/16 - 3/4	950	500
2 1/2 A	156.00	4-0000	7/16 - 3/4	800	575
2 1/2 B	172.00	4-0000	7/16 - 3/4	750	650
3R	180.00	2-400M	1/2 - 1	800	560
3A	196.00	2-400M	1/2 - 1	700	650
3B	212.00	2-400M	1/2 - 1	650	740
3 1/4 B	260.00	10 Duplex Parallel	3/4 - 1 1/4	450	900
3 1/2 B	260.00	000-700MCM	3/4 - 1 1/4	450	1000
4B	330.00	600MCM-900MCM	1 1/8 - 1 3/8	375	1400
4 1/4 B	500.00	800MCM-1250MCM	1 5/16 - 1 5/8	250	2300
4 1/2 B	620.00	1MMCM-2MMCM	1 15/32 - 2 1/4	300	2700

## Porcelain Crane Insulators

## Dry Process—Brown Glaze



No. 6583



No. 51

Any quantity, no standard package.

No. .... 6583 51

Gross Wt. per 100.....lb. 150 70

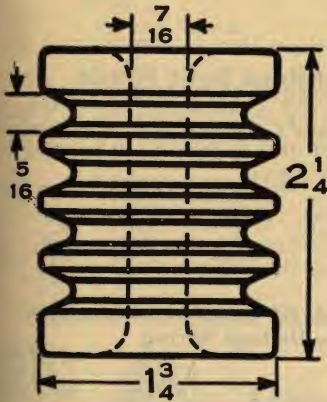
Prices upon application.



## Porcelain Telephone Knobs

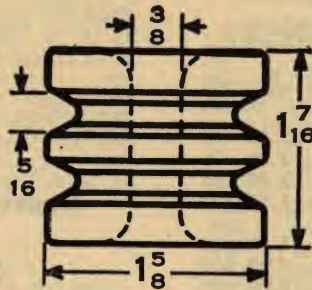
### Dry Process Porcelain

No. 6062



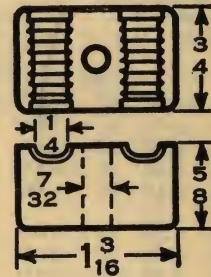
No. .... 6062  
No. in Barrel ..... 1000  
Ship. Wt. per Barrel ..... lb. 375

No. 6061



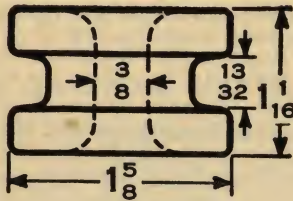
No. .... 6061  
No. in Barrel ..... 2000  
Ship. Wt. per Barrel ..... lb. 455

No. 7137-C



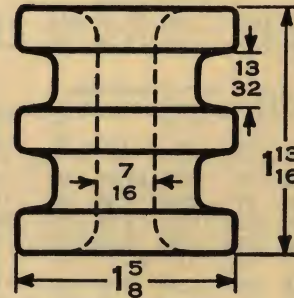
No. .... 7137-C  
No. in Barrel ..... 5000  
Ship. Wt. per Barrel ..... lb. 460

No. 7138-S



No. .... 7138-S  
No. in Barrel ..... 2500  
Ship. Wt. per Barrel ..... lb. 375

No. 7139-T

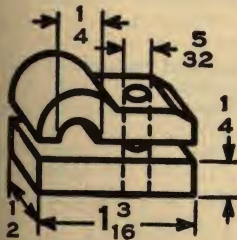


No. .... 7139-T  
No. in Barrel ..... 1500  
Ship. Wt. per Barrel ..... lb. 360

## Porcelain Telephone Cleats

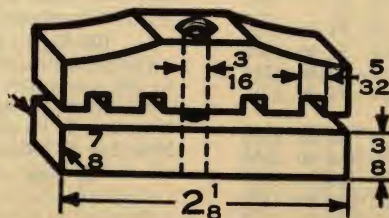
### Drop Process Porcelain

No. 333, Top  
No. 333 1/2, Base



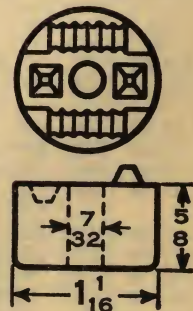
No. .... 333  
No. in Barrel ..... 21,500  
Ship. Wt. per Barrel ..... lb. 465

No. 314, Top  
No. 315, Base



No. .... 314  
No. in Barrel ..... 3000  
Ship. Wt. per Barrel ..... lb. 350

No. 6250



No. .... 6250  
No. in Barrel ..... 5000  
Ship. Wt. per Barrel ..... lb. 460



### Porcelain Tubes



Approximate Number of Standard Tubes per Barrel  
and Approximate Shipping Weights per 1000

Length Under Head Inches	5/16-Inch Hole 5/16-Inch O.D.			3/8-Inch Hole 1/2-Inch O.D.			1/2-Inch Hole 1 1/8-Inch O.D.		
	Tubes per Barrel	Per 100	Wt. Lb. per 1000	Tubes per Barrel	Per 100	Wt. Lb. per 1000	Tubes per Barrel	Per 100	Wt. Lb. per 1000
1/2	13000	\$1.60	26	12000	\$2.00	30	.....	.....	.....
1	9500	1.70	32	8800	2.10	37	5500	\$2.70	56
1 1/2	8200	1.80	40	7500	2.20	48	4200	2.80	74
2	7000	1.90	45	6000	2.40	54	3500	3.00	86
2 1/2	5500	2.10	58	4000	2.70	76	3000	3.30	100
3	4500	2.30	62	3100	3.00	107	2500	3.70	114
4	3600	3.00	80	2000	4.00	117	2000	4.80	138
5	2900	3.90	100	1900	5.00	142	1600	6.00	169
6	2000	5.00	118	1500	6.00	183	1300	7.20	204
8	2000	9.00	155	1200	10.50	225	1000	13.00	255
10	1600	16.70	194	1000	18.60	275	900	21.50	311
12	1050	24.40	244	800	26.70	350	800	30.00	344
14	900	32.10	333	650	34.80	400	700	38.50	393
16	750	39.80	387	550	42.90	483	550	47.00	500
18	650	47.50	435	450	51.00	580	450	55.50	589
20	550	55.20	485	400	59.10	644	400	64.00	665
24	500	70.60	535	350	75.30	725	350	81.00	727

Length Under Head Inches	5/16-Inch Hole 5/16-Inch O.D.			3/8-Inch Hole 1/2-Inch O.D.			1-Inch Hole 1 1/8-Inch O.D.		
	Tubes per Barrel	Per 100	Wt. Lb. per 1000	Tubes per Barrel	Per 100	Wt. Lb. per 1000	Tubes per Barrel	Per 100	Wt. Lb. per 1000
1	3700	\$4.00	78	3000	\$6.00	93	.....	.....	.....
1 1/2	3000	4.60	97	2200	7.00	127	1400	\$11.20	193
2	2500	5.20	112	1700	8.00	159	1000	12.50	260
2 1/2	2200	5.80	127	1400	9.00	193	800	13.80	325
3	2000	6.50	135	1200	10.00	217	650	15.00	385
4	1750	8.00	149	1000	11.60	250	550	16.80	436
5	1450	9.50	155	900	13.20	239	500	18.60	440
6	950	11.00	226	550	14.80	373	450	20.40	489
8	680	14.00	294	450	18.00	444	400	24.00	525
10	550	25.00	364	300	29.00	667	280	37.50	750
12	500	34.00	400	250	39.00	800	220	50.00	955
14	450	43.00	444	200	49.20	900	180	62.50	1167
16	400	52.00	500	200	59.40	1000	160	75.00	1312
18	350	61.00	571	175	69.60	1100	150	87.50	1400
20	350	70.00	700	175	79.80	1200	120	100.00	1750
24	300	88.00	800	150	100.00	1334	100	125.00	2100

Length Under Head Inches	1 1/4-Inch Hole 2 1/8-Inch O.D.			1 1/2-Inch Hole 2 3/8-Inch O.D.			1 3/4-Inch Hole 2 7/8-Inch O.D.		
	Tubes per Barrel	Per 100	Wt. Lb. per 1000	Tubes per Barrel	Per 100	Wt. Lb. per 1000	Tubes per Barrel	Per 100	Wt. Lb. per 1000
2 1/2	450	\$19.00	578	325	\$25.50	815	275	\$34.00	982
3	400	21.00	650	300	28.00	883	250	37.00	1080
4	350	24.00	714	250	32.00	1020	225	44.50	1156
5	325	27.20	708	180	36.00	1306	160	52.00	1500
6	275	30.60	836	160	40.50	1407	140	60.00	1714
8	220	37.60	1000	140	49.00	1607	120	75.00	1917
10	200	45.00	1100	120	58.00	1875	100	90.00	2300
12	160	70.00	1375	100	102.50	2250	90	160.00	2556
14	120	87.00	1833	80	123.50	2812	75	190.00	3067
16	100	104.00	2200	60	144.50	3750	55	220.00	4182
18	80	121.00	2750	50	166.00	4500	45	250.00	5111
20	60	138.00	3200	45	187.50	4800	40	280.00	5500
24	60	172.00	3667	45	230.00	5000	40	340.00	5750

### Nail Assembled Split Knobs



Consists of cap, base, 10d nail and nail head assembled. Has two grooves and will take wire sizes 12 to 14.

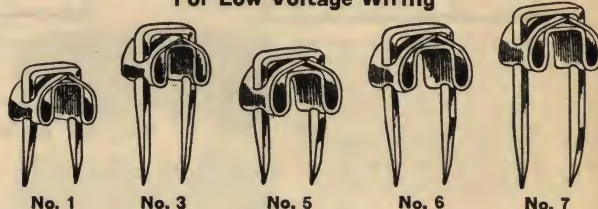
No. ....	5 1/2 Split
Diameter.....inches	1 3/16
Height.....inches	1
No. per Barrel.....	3000
Shipping Weight per Barrel.....pounds	490

### Screw Assembled Split Knobs

Consists of base, cap and 3-inch screw assembled. No 5 1/2 Split and Detroit have 2 grooves, and take wire sizes 12 to 14. Nos. 9419 and 9420, 4 grooves, take wire sizes 10 to 12 and 4 to 6 respectively.

No. ....	5 1/2 Split	Detroit	9419	9420
Diameter.....inches	1 3/16	1 1/4	1 1/2	1 5/16
Height Base.....inches	1	1 3/16	1 3/32	1 3/32
No. per Barrel.....	3000	3000	1500	875
Ship. Wt. per Barrel....lb.	415	450	415	430

### Superior Standard Insulated Staples For Low Voltage Wiring



#### 100 Size—For Industrial and Telephone Use

Coppered insulated staples packed 100 to the box, 1000 to the container, 25 boxes to the standard carton.

Nos. 1, 3, or 5.....	per 1000	\$1.90
Nos. 6 or 7.....	per 1000	2.00

#### 50 Size—For Commercial and Household Use

Coppered insulated staples packed 50 to a box, 1000 to a container, 25 boxes to the standard carton.

Furnished in red-white-blue cellophane window boxes.

Nos. 1, 3, or 5.....	per 1000	\$2.00
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#### 40 Size—For Commercial and Home Use

Colored insulated staples packed 40 to the box, 1000 to the container, 25 boxes to the standard carton.

the container, 25 boxes to the standard carton.  
Available in white, brown, or ivory finish.  
Furnished in display cartons with cellophane window boxes.  
Nos. 1, 3, or 5.....per 1000 \$2.50  
Add 12 cents to prices for white finish.

### Superior Strip-Insulated Staples



Designed for use where special packaging is required in kits which are sold by manufacturers of thermostat, radio, and electronic equipment.

Made in strips of 10 staples.

#### 100 Size—For Telephone and Industrial Use

Coppered insulated staples packed 100 to the box, 1000 to the container, and 25 boxes to the standard carton.

Furnished in sizes No. 1 or 3.		
Nos. 1 or 3, Packed in containers.....	per 1000	\$3.50
Nos. 1 or 3, Packed in Bulk .....	per 1000	3.00

#### 40 Size—For Commercial and Home Use

Available in brown, ivory, and white.

Packed 40 to the open-face box, 1000 to the container 25 boxes to the standard carton.

Furnished in sizes No. 1 or 3.	
Nos. 1 or 3.....	per 1000 \$5.00
Add 12 cents to prices for white finish.	





### No. F4 Superior Insulated Fiber Washer Telephone Wiring Nails

Made in sizes of  $\frac{1}{2}$  and  $\frac{7}{8}$ -inch.

Available in white, brown, and ivory.

Packed 100 size.

No. F4.....per 1000 \$4.24



### No. F5 Superior Plastic Wiring Nails

Insures permanent installation, permanent color, and a secure grip on all inside wiring including synthetic wire.

Made in sizes of  $\frac{1}{2}$  and  $\frac{7}{8}$ -inch.

Available in white, brown, and ivory.

Packed 100 to the box, 10 boxes to a container, and 25 containers in a shipping carton, which totals 25,000 nails. Shipping weight per carton, 30 pounds.

No. F5.....per 1000 \$7.10

### Superior All Steel Metal Wiring Nails



For inside and outside low voltage electrical wiring. Made in sizes of  $\frac{1}{2}$  and  $\frac{7}{8}$ -inch.

Available in olive drab, brown, ivory, and white.

Packed 100 size, 1000 to the container, 25,000 to the standard carton.

No. IW9,  $\frac{1}{2}$ -Inch.....per 1000 \$3.50

No. IW10,  $\frac{7}{8}$ -Inch.....per 1000 3.50

Add 12 cents per 1000 to prices for white finish.

### No. 18 Superior Fiber Head Wiring and Upholstering Nails



Made in sizes of  $\frac{5}{8}$  and  $\frac{7}{8}$ -inch.

Available in white, brown, and green finish.

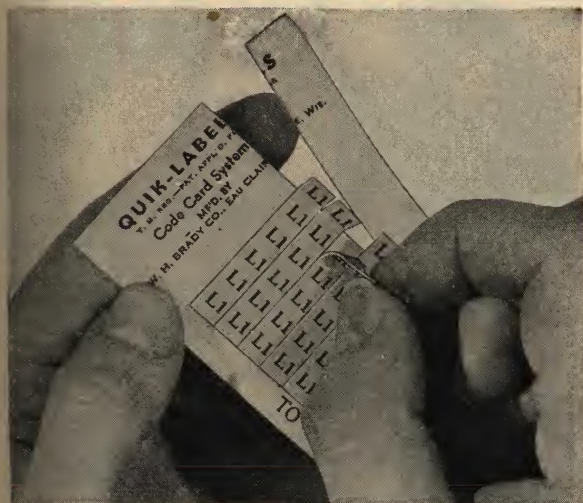
Packed either 100 size (1000 to the container) or 1000 size.

Add 12 cents to above for white finish.

No. 18, Packed 1000 Size.....per 1000 \$2.60

No. 18, Packed 100 Size.....per 1000 2.84

### Brady Quik-Label Wire Markers



Used for marking electrical wires.

Self-adhesive feature makes labels stick without moistening. Labels come in rows on handy cards.

Plastic coated for resistance to dirt, oil, fumes, water, weather, abrasion, and handling.

Have high dielectric strength, preventing shorts. Will not creep, lift, break, chip, slur or fall off wire.

Available in 400 standard N.E.M.A. electrical symbols, including 15 colors. Symbols are always visible with the wire in any position as the label goes all around the wire.

Labels are  $1\frac{1}{2}$  inches long and can be cut horizontally through the middle for small diameter wires to provide individual  $\frac{3}{4}$ -inch labels.

Features a self-starter strip, which partly peels each label automatically.

Write for complete list of cards and prices.

### Steel City Universal Insulator Supports



Nos. 500, 501,  
502 and 503



Nos. 505 and 506

This support is for use where lines are to be run along steel girders, under roofs, or where cramped quarters will not permit nailing up insulators.

Malleable iron; cadmium-plated, electro galvanized or

sherardized, with cupped steel set screws. Prices include leather washers. Standard tapped as listed but can be tapped as specified at no extra cost.

No.	Per 100	Standard Tapping	Size In.	Jaw Open. In.	Std. Pkg.	Approx. Wt., Lb. per 100
500	\$36.00	$\frac{1}{4}$ -20	1	$\frac{3}{4}$	100	20
509	36.00	10-24	1	$\frac{3}{4}$	100	20
501	60.00	$\frac{5}{16}$ -18	$1\frac{1}{2}$	$\frac{3}{4}$	100	50
502	103.20	$\frac{3}{8}$ -16	2	$\frac{7}{8}$	100	86
503	144.00	$\frac{1}{2}$ -13	$2\frac{1}{2}$	$\frac{7}{8}$	50	150
507	158.40	$\frac{1}{2}$ -13	$2\frac{1}{2}$	$1\frac{1}{4}$	50	150
508	198.00	$\frac{1}{2}$ -13	$2\frac{1}{2}$	2	50	188

#### Long Base

*505	\$72.00	*10-24	$1\frac{1}{2}$	$\frac{3}{4}$	100	75
506	108.00	10-24, $\frac{1}{2}$ -13	2	1	100	117

\* $\frac{3}{8}$ -inch clearance.

#### Accessories

Furnished only when specified and at additional cost. If desired, specify number of accessory. Standard package, 100.

#### Machine Screws

Screws not listed are also available; prices on request.

No.	Per 100	Size In.	Description	Std. Insulator No.	Universal Insulator Support Recommended
600	\$3.60	$2\frac{1}{4}$	No. 10-24 Flat Head	$5\frac{1}{2}$ Split	500
601	3.60	2	No. 14-20 Flat Head	$5\frac{1}{2}$	500
602	6.00	$2\frac{1}{4}$	No. 18-18 Flat Head	$4\frac{1}{2}$	501
603	10.80	$3\frac{1}{4}$	No. 24-16 Flat Head	1	502
604	7.20	$2\frac{1}{2}$	No. 24-16 Rd. Head.	2, 26 & 30	502
606	7.20	$2\frac{1}{2}$	No. 24-16 Flat Head	3 W.G. & $3\frac{1}{2}$	502
607	7.20	$2\frac{1}{4}$	No. 24-16 Rd. Head.	24	502
608	7.20	$2\frac{1}{2}$	13 Machine Bolt....	49	503
609	6.00	$2\frac{3}{4}$	No. 18-18 Flat Head	33 Sect.	501
621	4.80	$2\frac{1}{2}$	No. 14-20 Flat Head	9419	501
622	6.00	$2\frac{3}{4}$	No. 18-18 Flat Head	9420	502
624	9.60	$3\frac{1}{2} \times 1\frac{1}{2}$	13 Machine Bolt....	53	503
625	7.20	$3 \times \frac{3}{8}$	16 Machine Bolt....	52	503
626	9.60	$3\frac{3}{4} \times 1\frac{1}{2}$	13 Machine Bolt....	52	503

#### Cleat Attachments

No.	Per 100	B & D Cleats No.	Support Recommended	B & D Cleat Attachments	Thrds. per Inch
510	\$110.00	1	501	Type A No. 1	18
511	110.00	$1\frac{1}{2}$	501	Type A No. $1\frac{1}{2}$	18
512	123.20	2	502	Type A No. 2	16
513	123.20	$2\frac{1}{2}$	502	Type A No. $2\frac{1}{2}$	16
514	123.20	3	502	Type A No. 3	16
514A	137.50	$3\frac{1}{2}$	503	Type A No. $3\frac{1}{2}$	13
516	137.50	4	503	Type A No. 4	13
517	165.00	$4\frac{1}{2}$	503	Type A No. $4\frac{1}{2}$	13

#### Wooden Pins

615	\$41.40	*Insulator	503	†For 1" Pin Hole	13
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#### Pipe Hangers

616	\$13.80	$\frac{1}{2}$ " Pipe Hanger	501	$\frac{1}{2}$ " Pipe Hanger	18
617	13.80	$\frac{3}{4}$ " Pipe Hanger	501	$\frac{3}{4}$ " Pipe Hanger	18
618	19.30	1" Pipe Hanger	502	1" Pipe Hanger	16
619	19.30	$1\frac{1}{4}$ " Pipe Hanger	502	$1\frac{1}{4}$ " Pipe Hanger	16
620	22.00	$1\frac{1}{2}$ " Pipe Hanger	503	$1\frac{1}{2}$ " Pipe Hanger	13

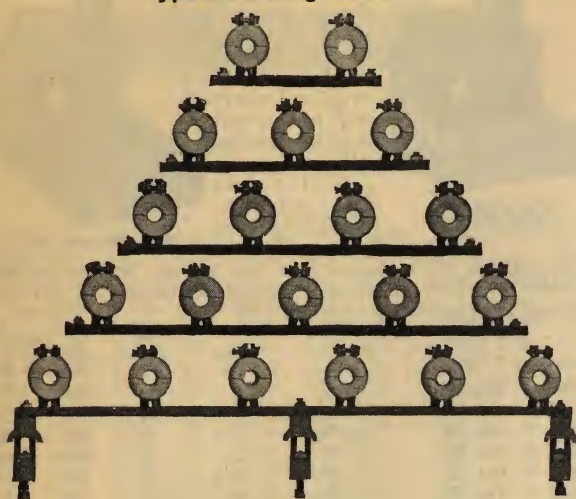
\*Double-groove, double petticoat glass insulators.

†Paraffin treated  $4\frac{3}{4}$  inches high,  $1\frac{1}{2}$ -inch base, with bolt 5 inches long.



## Efficiency Bushing Racks and Supports

### Type B Bushing Racks



2, 3, 4, 5, and 6-Bushing Racks  
Bottom Illustration Shows Rack Mounted on Triple Adjustable Support

The same type cable support is used as in Type U, in which a single bolt is required to support the bushing and at the same time clamp the bushing support to the rack. Available with or without single or double adjustable beam supports, for a.c. or d.c. service, in sizes to fit  $\frac{5}{16}$  to  $2\frac{3}{8}$ -inch wire sizes.

### Bushing Supports



Type G

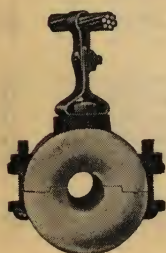


Type VB

**Type G.** Adjustable to any angle and eliminates drilling of holes for mounting. A.c. or d.c. service in sizes to fit  $\frac{5}{16}$  to  $2\frac{3}{8}$ -inch cable. A.c. service furnished with brass half.

**Type VB.** Mounted tight with one bolt, the circular base permits adjustment to any angle. Only one bolt required to hold porcelain bushing and clamp to base. Made of high grade malleable iron with highest quality split porcelain bushings. For a.c. or d.c. service in sizes to fit  $\frac{5}{16}$  to  $2\frac{3}{8}$ -inch wire sizes.

### Type GM Bushing Messenger Supports

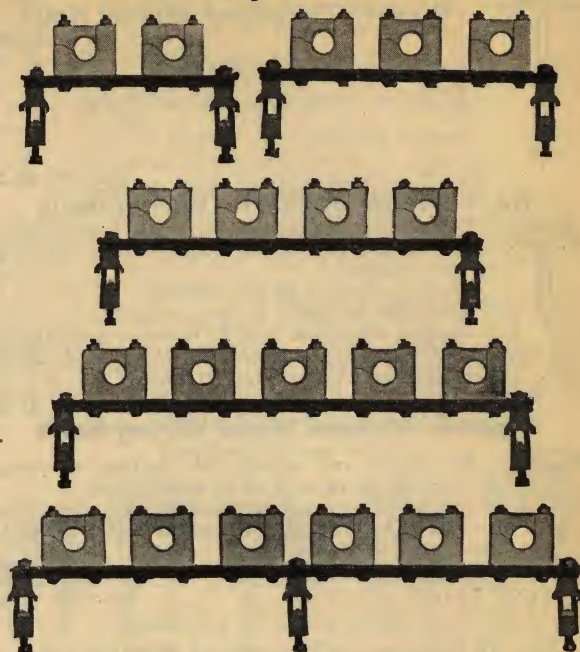


Designed to suspend wire or cable from messengers where beam mounting is impossible.

Combination of Type G bushing support with strip steel messenger attachment.

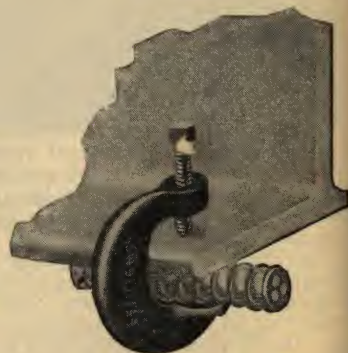
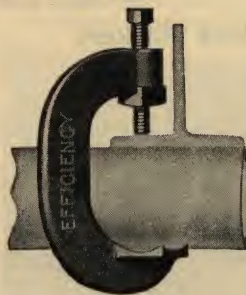
Furnished complete as shown, for a.c. or d.c. service, to fit  $\frac{5}{16}$  to  $2\frac{3}{8}$ -inch wire sizes.

## Efficiency Cleat Racks



Base of the cleat is permanently mounted with one bolt, forming a solid support for the wire or cable. The cap is then inserted and bolted down. Supplied with or without adjustable beam supports, for a.c. or d.c. service, in sizes to fit  $\frac{5}{16}$  to  $2\frac{3}{8}$ -inch wire sizes, in 2, 3, 4, 5, 6-cleat type and 3-phase cleat rack.

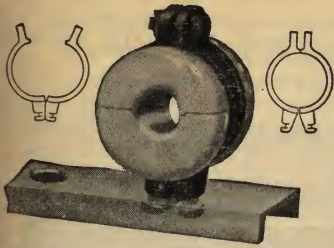
## Type F Efficiency Conduit Hangers



Used for open steel construction to carry armored cable and  $\frac{1}{2}$  to  $2\frac{1}{2}$ -inch pipe. Patented radiating ridges and 5-point gripping surface keep the pipe suspended dead center with the set screw above permitting the pipe to be carried securely at any angle to the beam. Also used for carrying gas, water and air lines. Made of highest quality malleable iron.



## Efficiency Conductor Racks



Provides a quick, compact method of temporarily or permanently suspending cables of one size or varied sizes—and additional cables can be added as required. Types for a.c. and d.c. service. Only one bolt required for mounting cable. Can be used where space is limited. Will not loosen

from jar or building vibration. Extra large, extra heavy vitreous porcelain bushings. Will not injure cable insulation. For a.c. service, a brass half bushing support is furnished.

### Type U Nested Conductor Racks



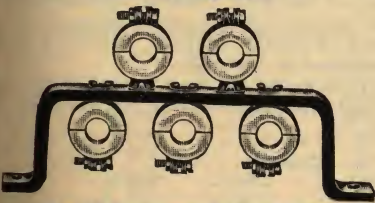
2-Conductor Bushing Rack

Simple, compact, scientifically designed to carry conductors equidistant from center to center.



3-Conductor Bushing Rack

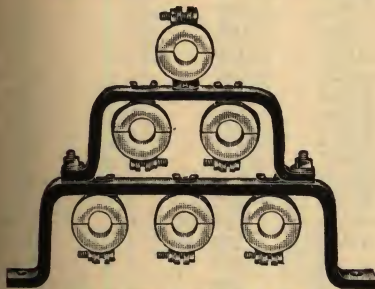
One bolt supports the bushing and clamps the bushing support to the frame.



4 and 5-Conductor Bushing Racks

Each clamp is a separate unit—allowing independent installation of each cable line.

Rack and bushing supports patented.



6-Conductor Bushing Rack

Approved and in constant use by many of the largest industrial plants. Relieves impedance.

Available in sizes to fit  $\frac{5}{16}$  to  $2\frac{3}{8}$ -inch wire sizes.

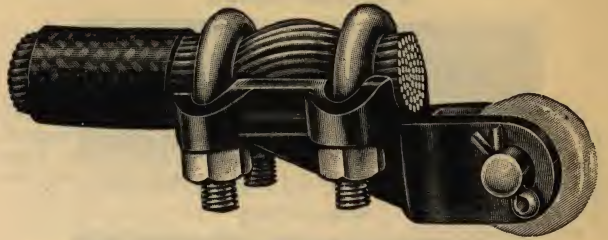
## Efficiency Hangers

### 2 or 3-Wire Cleat Mounting



This fitting is furnished complete with No. 150 adjustable support; malleable iron cleat fitting, 2 or 3-wire glazed porcelain cleats and all bolts furnished.

## Type CHS Cable Strain Clamps



Provides a powerful grip that prevents cable from slipping.

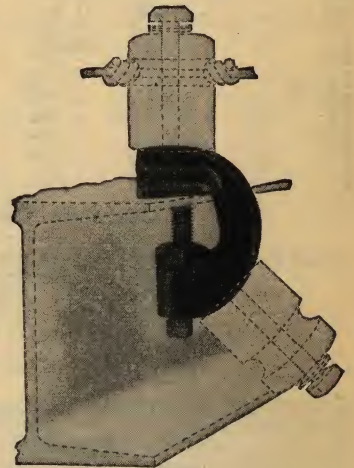
Cast of malleable iron "H" construction, with a high ridge across the center of the cable channel and a U-bolt at each end.

Slipped over cable as illustrated, with U-bolts tightened, it locks cable safely and securely over middle hump without strain or damage. Stands a direct pull of over 12,500 pounds before slipping. For a.c. or d.c. service.

Takes cable from 1/0 to 1,500,000 c.m. Furnished in 3 clamp sizes which cover all cable sizes.

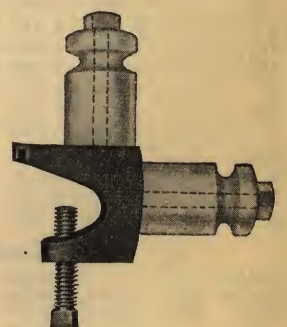
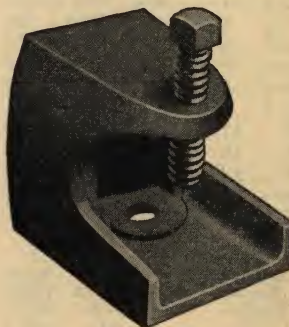
Available either with eye or clevis.

## Adjustable Insulator Supports



Designed to carry insulators and fittings at any angle—above or below the beam. Several conductors or any combination of wires or cables can be used by the addition of various fittings which can be attached anywhere within a 120° radius from vertical position. Eliminates the need for drilling or burning holes in beams or angles. Supports can be used and re-used indefinitely. Height sizes,  $2\frac{1}{8}$ , 3, 4 and  $4\frac{1}{4}$  inches.

## Type K Efficiency Non-Adjustable Supports



Used for supporting porcelain and glass insulators to beams and angles in open steel construction. Made of high quality malleable iron. The head is threaded to receive a case hardened cup point set screw which imbeds into the beam when tightened. Fittings are attached with standard machine screws, through ready-threaded holes with a reinforced section. Available in sizes 1,  $1\frac{1}{2}$ , 2 and  $2\frac{1}{2}$  inches.



National Rigid Steel Conduit  
Enameled Conduit



Enameled conduit is manufactured from mild drawn steel tubing. Before enameling, the tubing is thoroughly cleaned and freed from dirt, grease, scale, silicates and burrs. This process leaves clean surface for the application of the compound.

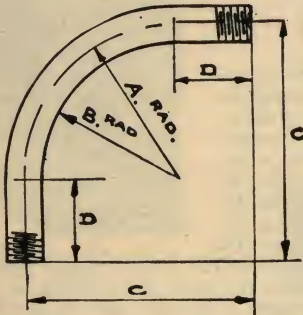
Shearaduct



Sheraduct rigid conduit is made of full weight mild spellerized steel tube and finished under the famous sherardizing process. In this process pure zinc is alloyed with the steel tube both inside and outside to form a rustproof finish which is so entirely a part of the pipe that it cannot be knocked or chipped off.

Standard Pipe Size Inches	Per 100 Feet	DIAMETER, INCHES		Wall Thickness Inches	Threads per Inch	Wt. Lb. per 1000 Feet
		Inside	Outside			
1/2	.....	.635	.840	.1025	14	852
3/4	.....	.837	1.050	.1065	14	1134
1	.....	1.070	1.315	.1225	11 1/2	1684
1 1/4	.....	1.409	1.660	.1255	11 1/2	2281
1 1/2	.....	1.633	1.900	.1335	11 1/2	2731
2	.....	2.094	2.375	.1405	11 1/2	3678
2 1/2	.....	2.502	2.875	.1865	8	5819
3	.....	3.102	3.500	.199	8	7616
3 1/2	.....	3.588	4.000	.206	8	9202
4	.....	4.072	4.500	.214	8	10889
4 1/2	.....	4.548	5.000	.226	8	12642
5	.....	5.097	5.563	.233	8	14810
6	.....	6.109	6.625	.258	8	19185

Conduit Elbows



Size Inches	Per 100	ACTUAL DIAMETER —INCHES—		DIMENSIONS, INCHES				Weight Pounds per 100
		Inside	Outside	A	B	C	D	
1/2	.....	.622	.840	4	3 3/16	6 3/4	2 3/4	82
3/4	.....	.824	1.050	4 1/2	4	6 7/8	2 3/8	109
1	.....	1.049	1.315	5 3/4	5 1/16	8 1/2	2 7/8	201
1 1/4	.....	1.380	1.660	7 1/4	6 7/16	9 1/2	2 11/16	313
1 1/2	.....	1.610	1.900	8 1/4	7 5/16	11 1/2	3 11/16	441
2	.....	2.067	2.375	9 1/2	8 5/16	13 1/2	4 5/16	707
2 1/2	.....	2.469	2.875	10 1/2	9 1/16	16	5 1/2	1411
3	.....	3.068	3.500	13	11 1/4	18 3/16	5 13/16	1850
3 1/2	.....	3.548	4.000	15	13	22	7	2979
4	.....	4.026	4.500	16	13 3/4	23 1/16	7 1/16	3528
5	.....	5.047	5.563	24	21 1/4	30 5/8	6 5/8	6575
6	.....	6.065	6.625	30	26 1/16	36 7/16	6 7/16	9645

Couplings

Standard Pipe Size Inches	Per 100	Length Inches	Weight Pounds per 100	Standard Pipe Size Inches	Per 100	Length Inches	Weight Pounds per 100
1/2	.....	13 1/8	11.6	3	.....	3 1/8	249.8
3/4	.....	15 1/8	20.9	3 1/2	.....	3 5/8	424.1
1	.....	17 1/8	34.3	4	.....	3 5/8	474.1
1 1/4	.....	21 1/8	53.5	4 1/2	.....	3 5/8	550.0
1 1/2	.....	23 1/8	74.3	5	.....	4 1/8	700.0
2	.....	25 1/8	120.8	6	.....	4 1/8	750.0
2 1/2	.....	27 1/8	172.0	.....	.....	.....	.....

In ordering, specify finish desired.

Fretz-Moon Easy-Bending Steel Conduit

High quality rigid steel raceway made from soft, ductile steel. Produced by the continuous weld process which assures welds that are sound, smooth, and strong. Welds will not open even under severe abuse.

Free from burnt or hard spots. Bends, cuts, and threads easily on the job. Threads are clean, sharp, and free running; and the inside surface is clean and free from rough spots and burrs.

Enamelite Finish



**Red Label.** Protected inside and outside with a heavy, baked-on-coating of wear-resisting black enamel, highly resistant to acid types of corrosion. Will not chip, crack, or flake under the most severe installation requirements.

Hot Dipped Galvite Finish



**Blue Label.** Hot-dipped galvanized inside and outside with a special coating of baked-on lacquer applied inside and outside to further insure high corrosion-resistance.

Conduit is furnished in 10-foot lengths, threaded both ends, with coupling screwed on one end.

Conduit is always designated by its nominal inside diameter. All weights and dimensions shown are nominal.

Size In.	DIAMETER, IN.		Thick- ness Inches	Threads per Inch	Weight Pounds per Ft.
	Exter- nal	Inter- nal			
1/4	.540	.361	.088	18	.425
3/8	.675	.493	.091	18	.568
1/2	.840	.622	.109	14	.852
3/4	1.050	.824	.113	14	1.134
1	1.315	1.049	.133	11 1/2	1.684
1 1/4	1.660	1.380	.140	11 1/2	2.281
1 1/2	1.900	1.610	.145	11 1/2	2.731
2	2.375	2.067	.154	11 1/2	3.678
2 1/2	2.875	2.469	.203	8	5.819
3	3.500	3.068	.216	8	7.616
3 1/2	4.000	3.548	.226	8	9.202
4	4.500	4.026	.237	8	10.889
4 1/2	5.000	4.506	.247	8	12.642
5	5.563	5.047	.258	8	14.810
6	6.625	6.065	.280	8	19.185

Size In.	Couplings Weight Pounds	Elbows —DIMENSIONS, INCHES—			Weight Pounds	Lgth. of Thread Inches
		Radius	Tangent	Offset		
1/4	.060	.....	.....	.....	.....	.....
3/8	.095	.....	.....	.....	.....	.....
1/2	.116	4	2 3/4	6 3/4	.82	.75
3/4	.209	4 1/2	2 3/4	7 1/4	1.09	.76
1	.343	5 3/4	2 3/4	8 1/2	2.01	.94
1 1/4	.535	7 1/4	3 1/4	10 1/2	3.13	.97
1 1/2	.743	8 1/4	3 1/4	11 1/2	4.41	.98
2	1.208	9 1/2	4	13 1/2	7.07	1.12
2 1/2	1.720	10 1/2	4 1/4	14 3/4	14.11	1.51
3	2.498	13	4 1/4	17 1/4	18.50	1.57
3 1/2	2.241	15	4 3/4	19 3/4	29.79	1.62
4	4.741	16	5	21	35.28	1.67
4 1/2	5.500	.....	.....	.....	43.10	.....
5	7.000	24	6 1/8	30 1/8	65.75	1.78
6	7.500	30	6 1/2	36 1/2	96.45	1.89



## Triangle Rigid Steel Conduit, Couplings and Elbows

Hot-Dipped Galvanized and Lacquer Finished  
Conduit also Made in Black Enamelled Finish

Approved by Underwriters' Laboratories, Inc.



Hot-Dipped Galvanized

In hot-dipped galvanizing, each length is immersed in a bath of molten virgin zinc (99.85% pure) thoroughly zinging the interior as well as the exterior.

The intimate contact of the surfaces of the tube with the molten zinc results in an alloying action thoroughly bonding the heavy, pure zinc coating to the pipe.

Conduit is submerged in a linseed oil base lacquer and thoroughly baked, giving a smooth finish.

Conforms to federal specification WWC581a.



Black Enamelled

Immersed in a bath of black enamel and baked, producing a pipe with black luster finish.

Conforms to federal specification WWC571.

Size	DIAMETER, IN.		CONDUIT Thickness Inches	Threads per In.	Wt. Lb. per Ft.
	Outside	Inside			
1/4	.540	.364	.088	18	.425
3/8	.675	.493	.091	18	.568
1/2	.840	.622	.109	14	.852
3/4	1.050	.824	.113	14	1.134
1	1.315	1.049	.133	11 1/2	1.684
1 1/4	1.660	1.380	.140	11 1/2	2.281
1 1/2	1.900	1.610	.145	11 1/2	2.731
2	2.375	2.067	.154	11 1/2	3.678
2 1/2	2.875	2.469	.203	8	5.819
3	3.500	3.068	.216	8	7.616
3 1/2	4.000	3.548	.226	8	9.202
4	4.500	4.026	.237	8	10.889
5	5.563	5.047	.258	8	14.810
6	6.625	6.065	.280	8	19.185

Size	COUPLINGS		90° ELBOWS		Wt. Lb. per 100
	Wt. Lb. per 100	Radius Inches	Offset Inches	Offset Inches	
1/4	6.0	3.850	6.375		41
3/8	9.5	3.917	6.437		55
1/2	11.6	4.000	6.500		82
3/4	20.9	4.500	7.250		109
1	34.3	5.750	8.625		201
1 1/4	53.5	7.250	10.000		313
1 1/2	74.3	8.250	11.000		441
2	120.8	9.500	13.625		707
2 1/2	172.0	10.500	15.687		1411
3	249.8	13.000	17.750		1850
3 1/2	424.1	15.000	20.000		2979
4	474.1	16.000	21.312		3528
5	700.0	24.000	29.000		6575
6	750.0	30.000	36.500		9645

Conduit furnished in 10-foot lengths, threaded both ends with one coupling. Conduit pipe is known and spoken of by its nominal inside diameter.

Write for prices on special sizes, bends, and lengths.

All weights are subject to a 5 per cent variation.

## Republic Electrune E.M.T. Lightweight Threadless Rigid Steel Conduit Inch-Marked



No threads to cut, ductile, bends easily, is light, tough and strong; resists corrosion.

Steeltubes takes up less space and consequently can be used in narrower quarters.

Knurled inside finish shows by actual test a saving of 20 to 30 per cent in the effort required to pull cable through. Cable rides the tops of the tiny knobs instead of making contact the entire length.

The National Electrical Code approves Steeltubes for open and concealed work and buried in concrete.

Size Inches	DIAMETER		Ft. to a Bundle	Approx. Wt., Lb. per 1000 Ft.
	Internal Inches	External Inches		
3/8	.493	.577	200	250
*1/2	.622	.706	100	321
*3/4	.824	.922	100	488
*1	1.049	1.163	100	711
1 1/4	1.380	1.508	50	1000
1 1/2	1.610	1.738	50	1180
2	2.067	2.195	30	1500

\*Furnished with knurled inside finish and inch-marked.

### Elbows

Elbow Size Inches	Radius to Center Line (45° and 90°) Inches	Offset (90°) Elbows Inches	Straight Leg or Tangent (90° Elbows) Inches	Std. Pkg. (90°) Elbows	Weight, Lb. Per 100 Pes. (90°) Elbows
1	5.063	9.438	4.375	25	100
1 1/4	5.500	10	4.500	25	144
1 1/2	6.875	10.938	4.063	20	180
2	8	13	5	10	277

## Triangle Metallic Thin Wall Conduit and 90° Elbows

Hot-Dipped Galvanized—Threadless

Approved by Underwriters' Laboratories, Inc.



Made from flat cold rolled steel and welded, giving a true tube of uniform thickness and strength.

Tubing is first pickled and cleaned to remove all scale and foreign substances, and is then immersed in a bath of molten virgin zinc (99.85% pure) giving a uniformly heavy zinc coating on the inside and outside surfaces.

Approved by N.E.C. up to and including 2-inch size for use on circuits where the conductor size does not exceed No. 1/0 and where the voltage does not exceed 600 volts.

Furnished in 10-foot lengths.

### Conduit

Size Inches	Per Foot	DIAMETER		Feet per Bundle	Approx. Wt., Lb. per 1000 Feet
		Inside Inches	Outside Inches		
1/2	....	.622	.706	100	321
3/4	....	.824	.922	100	488
1	....	1.049	1.163	100	711
1 1/4	....	1.380	1.508	50	1000
1 1/2	....	1.610	1.738	50	1180
2	....	2.067	2.195	..	1500

### 90° Elbows

#### Without Couplings

Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2
Per 100.....lb.	....	....	100	144	180	277



## Everdur Electrical Conduit



Composed principally of copper. A non-magnetic copper-silicon alloy which provides great strength, excellent corrosion resistance, high fatigue limit and exceptional ductility.

In addition to strength and other excellent physical qualities, this copper-silicon alloy offers good resistance to a large number of corroding agents. The durability of this alloy is attested by the records of equipment, such as smoke and soot washers and blowers; air conditioning and drainage fittings in battery and plating rooms; pumps, valves, and process piping and vessels in many chemical plants which have been operated successfully for long periods under unusually corrosive conditions.

## Seamless Rigid Conduit

Listed by the Underwriters' Laboratories, Inc.

Everdur rigid conduit is supplied in nominal sizes from 1/4 to 4 inches. Its physical properties are comparable to mild steel rigid conduit. As ordinarily supplied, the 10-foot lengths are threaded both ends with one Everdur coupling attached.

Nom. Size In.	Outside Diameter Inches	Inside Diameter Inches	Wall Thickness Inches	Wt. Lb. per Foot
1/4	.540	.382	.079	.4339
3/8	.675	.503	.086	.6034
1/2	.840	.636	.102	.8968
3/4	1.050	.834	.108	1.212
1	1.315	1.075	.120	1.708
1 1/4	1.660	1.382	.139	2.519
1 1/2	1.900	1.614	.143	2.993
2	2.375	2.077	.149	3.951
2 1/2	2.875	2.519	.178	5.719
3	3.500	3.084	.208	8.157
3 1/2	4.000	3.548	.226	10.16
4	4.500	4.026	.237	12.04

## Seamless EMT Conduit

Listed by the Underwriters' Laboratories, Inc.

Everdur electric metallic tubing is a thin-wall conduit made of Everdur metal. Its physical properties are comparable to mild steel tubing of equivalent wall thickness. It is available in sizes 3/8 to 2 inches in diameter, in standard 10-foot lengths, for assembly with threadless fittings which facilitate installation and dismantling.

Nom. Size, In.	Outside Diameter Inches	Inside Diameter Inches	Wall Thickness Inches	Wt. Lb. per Foot
3/8	.577	.493	.042	.2677
1/2	.706	.622	.042	.3322
3/4	.922	.824	.049	.5096
1	1.163	1.049	.057	.7510
1 1/4	1.510	1.380	.065	1.119
1 1/2	1.740	1.610	.065	1.297
2	2.197	2.067	.065	1.651

## Seamless Raceways

Special sizes in larger diameters with wall thicknesses comparable to Everdur Electrical Metallic Tubing are available up to 4 inches, nominal sizes, in random lengths of 10 to 14 feet. They are not listed with Underwriters', but are specified as Everdur Seamless Raceways.

Nom. Size In.	Outside Diameter Inches	Inside Diameter Inches	Wall Thickness Inches	Approx. Wt. Lb. per Foot
2 1/2	2.605	2.469	.068	2.055
2 3/4	2.875	2.739	.068	2.274
3	3.210	3.068	.071	2.655
3 1/4	3.500	3.358	.071	2.900
3 1/2	3.696	3.548	.074	3.193
3 3/4	4.000	3.852	.074	3.461
4	4.182	4.026	.078	3.813

## Seamless Couplings

For Rigid Conduit—With Tapered Threads

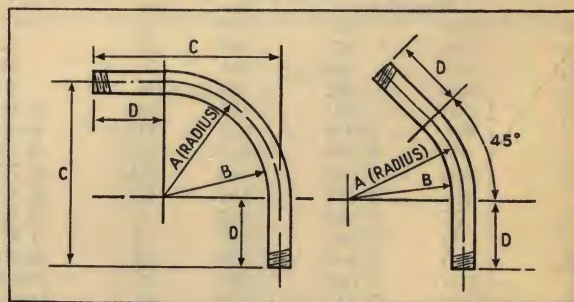
All Everdur couplings have tapered threads resulting in stronger and tighter joints which are essential for installations in hazardous locations.

Nom. Size In.	Outside Diameter Inches	Outside Surface	Length Inches	Wt. Lb. per 100 Pieces
1/4	.70	Plain	1.09	7
3/8	.84	Plain	1.13	9
1/2	1.03	Plain	1.47	17
3/4	1.28	Plain	1.50	25
1	1.56	Plain	1.88	42
1 1/4	1.95	Knurled	1.94	63
1 1/2	2.22	Knurled	2.00	80
2	2.72	Knurled	2.06	110
2 1/2	3.28	Knurled	3.06	240
3	3.95	Knurled	3.18	330
*3 1/2	4.75	Casting	3.38	460
*4	5.25	Casting	3.44	520

\*Cast Everdur couplings, outside diameters are approximate.

## Seamless Rigid Conduit Elbows

Threaded Both Ends—Without Coupling



Listed under Factory Inspection and Label Service Procedure by the Underwriters' Laboratories, Inc.

Nom. Size Inches	APPROXIMATE DIMENSIONS, INCHES				
	A Radius	B	C Offset 90° Elbow	D TANGENT 90° Elbow 45° Elbow	
1/2	4	3 3/16	6 3/4	2 3/4	2 3/4
3/4	4 1/2	4	7 1/2	3	3
1	5 3/4	5 1/16	8 1/2	2 3/4	2 3/4
1 1/4	7 1/4	6 7/16	10	2 3/4	2 3/4
1 1/2	8 1/4	7 3/16	11 1/4	3	3
2	9 1/2	8 3/16	13 7/8	4 3/8	4 3/8
2 1/2	10 1/2	9 1/16	15 1/4	4 3/4	4 3/4
3	13	11 1/4	19 3/4	6 3/4	5 1/2
3 1/2	15	13	22 7/8	7 7/8	6
4	16	13 3/4	23 7/8	7 7/8	6

## Seamless EMT Conduit Elbows

Everdur Not Threaded

Nom. Size Inches	A Radius	B	C Offset 90° Elbow	D TANGENT 90° Elbow 45° Elbow
1/2	4	3 3/16	6 3/4	2 3/4
3/4	4 1/2	4	7 1/2	3
1	5 3/4	5 1/16	8 1/2	2 3/4
1 1/4	7 1/4	6 7/16	10	2 3/4
1 1/2	8 1/4	7 3/16	11 1/4	3
2	9 1/2	8 3/16	13 7/8	4 3/8

Prices Upon Application



## National Flexsteel Flexible Metallic Conduit



The steel armor of Flexsteel (E.+S.+S.) flexible metallic conduit is of bondhook construction which enables it to be fished more readily than other types of this material.

Size In.	Per 1000 Feet	Ft. per Std. Coil	Approx. Wt. Lb. per 1000 Ft.	Size In.	Per 1000 Feet	Ft. per Std. Coil	Approx. Wt. Lb. per 1000 Ft.
5/16	\$51.00	250	150	1 1/4	\$300.00	50	1250
3/8	63.00	250	255	1 1/2	380.00	25	1625
1/2	89.00	100	480	2	488.00	25	2125
3/4	113.00	50	595	2 1/2	575.00	25	2630
1	239.00	50	1020	3	770.00	25	3130

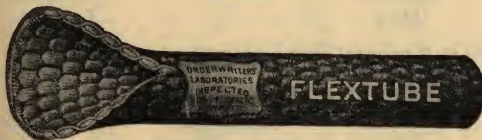
Triangle Flexible Steel Conduit  
Hot-Dip Galvanized

Approved by Underwriters' Laboratories, Inc.



Made from one continuous length of steel strip. Exceptionally flexible in short radius bends. Interlocking convolutions eliminate accidental opening when being bent. Interior surface is free from burrs and sharp edges. Conforms to federal specification WWC566.

Size Inches	Per Foot	Approx. Feet per Std. Coil	Wt., Lb. per 1000 Feet	Nominal Inside Diameter Inches
5/16	....	350	150	5/16
3/8	....	250	255	3/8
1/2	....	100	470	5/8
3/4	....	50	575	1 1/16
1	....	50	1020	1
1 1/4	....	50	1250	1 1/4
1 1/2	....	25	1620	1 1/2
2	....	25	2125	2
2 1/2	....	25	2630	2 1/2
3	....	25	3130	3

Flextube Non-Metallic Flexible Conduit  
Loom

Made from an especially prepared stiff fiber cord interwoven with a tough yarn. The result is a seamless tube with a smooth, hard, canvas-like roller-bearing interior which affords the best obtainable fishing surface. This interwoven insulating tubing is then treated with a superior moisture and flame resisting compound, is further protected by a strong, tough braiding which is also compounded.

Regularly inspected and labeled by the Underwriters' Laboratories.

Trade Size I.D. Inches	Per Foot	Size Coil Feet	Weight Pounds per 1000 Feet	Trade Size I.D. Inches	Per Foot	Size Coil Feet	Weight Pounds per 1000 Feet
7/32	\$.03	250	33	1 1/4	\$.26	...	338
1/4	.04	250	35	1 1/2	.36	...	440
3/8	.06	250	55	1 3/4	.41	...	425
1/2	.08	200	73	2	.45	...	460
5/8	.10	200	99	2 1/4	.47	...	700
3/4	.12	150	145	2 1/2	.58	...	740
1	.21	100	182	...	...	...	...

## Rigid Conduit Pipe Nipples

## Right-Hand Thread



Galvanized finish only. Less than unit package, add 20 per cent.

Pipe Size In.	Per 100	Close Lgth. Unit In. Pkg.	Per 100	Short Lgth. Unit In. Pkg.	2-In. Long Unit Per 100	3-In. Long Unit Per 100	4-Inch Long Unit Per 100
1/2	\$3.00	1 1/8 100	\$3.60	1 1/2 50	\$3.90 25	\$4.60 25	\$5.25 25
3/4	4.10	1 3/8 50	4.70 2	25	...	5.70 25	6.85 25
1	5.25	1 1/2 25	6.00 2	15	...	7.40 20	8.75 10
1 1/4	6.30	1 5/8 25	8.25 2 1/2	10	...	9.20 10	11.25 15
1 1/2	8.75	1 3/4 15	9.75 2 1/2	10	...	10.75 10	14.00 5
2	11.75	2 10	13.75 2 1/2	5	...	15.00 5	18.75 5
2 1/2	21.75	2 1/2 5	25.50 3	5	...	...	33.00 5
3	30.00	2 5/8 5	33.50 3	5	...	...	40.00 5
3 1/2	40.00	2 3/4 1	53.00 4	1	...	...	...

## Long Conduit Nipples

Pipe Size In.	5-In. Long Per 100	6-In. Long Unit Per 100	8-In. Long Unit Per 100	10-In. Long Unit Per 100	12-In. Long Unit Per 100
1/2	\$6.40 25	\$7.60 25	\$9.50 25	\$11.70 25	\$14.10 25
3/4	8.10 20	9.40 20	11.90 10	14.40 25	17.00 25
1	10.25 10	12.05 10	15.75 10	19.20 10	22.75 10
1 1/4	13.75 5	16.25 5	21.25 5	26.25 5	31.50 1
1 1/2	16.50 5	19.75 5	25.50 5	31.25 1	36.50 1
2	22.75 5	27.25 5	34.60 5	45.40 1	52.00 1
2 1/2	39.50 5	46.50 5	58.50 5	70.75 1	82.50 1
3	49.00 5	58.00 5	76.00 5	94.75 1	114.00 1
3 1/2	61.00 1	71.00 1	91.50 1	111.50 1	131.00 1

## Special Large Radius Elbows

## Black Enameled or Sherardized

## For Thick Wall Conduit

Size In.	12	15	18	24	30	36	42	48
1	\$1.80	\$2.15	\$2.65	\$3.05	\$3.45	\$4.00	\$4.55	\$5.05
1 1/4	2.00	2.35	2.95	3.35	3.85	4.55	5.05	5.75
1 1/2	2.40	2.80	3.45	4.00	4.65	5.35	6.00	6.80
2	3.40	4.00	4.95	5.75	6.55	7.60	8.55	9.60
2 1/2	4.15	4.90	5.90	6.90	8.00	9.25	10.40	11.75
3	Std.	7.50	9.15	10.65	12.25	14.40	16.00	18.15
3 1/2	....	Std.	15.10	17.80	20.50	24.00	26.70	30.20
4	....	....	16.60	19.50	22.50	26.30	32.25	36.50
4 1/2	....	....	Std.	27.30	31.40	36.80	40.90	46.30
5	....	....	....	Std.	35.40	41.60	46.20	52.35
6	....	....	....	....	Std.	43.45	48.30	54.65

90° elbows take above list.

60° elbows take above list, less 5 per cent.

45° elbows take above list, less 10 per cent.

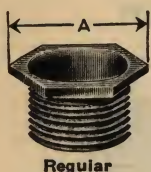
30° elbows take above list, less 15 per cent.

## Dimensions

Radius Inches	Offset Feet	Offset Inches	Across Straight End Inches	Length Unbent Feet	Unbent Inches
12	1	9	9	3	0
15	2	0	9	3	6
18	2	4	10	4	0
24	2	11	11	4	11
30	3	5	11	5	9
36	3	11	11	6	6
42	4	6	12	7	6
48	5	0	12	8	5

Prices for special sizes, bends and lengths, quoted upon request.

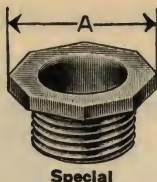




### Appleton Conduit Nipples

Schedule CF

Cadmium Finish



Special

No.	Size Inches	Regular		Std. Pkg.	Wt. Lb. Std. Pkg.
		A Inches	Car- ton		
7200	3/8	13/16	50	100	3
7201	1/2	1	50	100	4
7202	3/4	1 1/16	50	100	8
7203	1	1 1/16	25	50	7 1/2
7115	1 1/4	2 1/8	10	25	6
7116	1 1/2	2 3/16	10	25	7 1/2
7117	2	2 7/8	5	10	5
7118	2 1/2	3 1/2	5	10	6 1/2
7119	3	4 3/8	2	5	5
7120	3 1/2	4 7/8	2	5	6 1/2
7121	4	5 3/16	2	5	7 1/2
7123	5	6 3/16	2	5	10 1/2
<b>Special</b>					
7125	1 1/2	1 1/4	50	100	100
7126	3/4	1 1/16	50	100	90

### Chase Nipples

Approved by Underwriters' Laboratories

Where a Chase Nipple and coupling are used, a box can be removed without disturbing the conduit. Where two outlet boxes are to be used back to back, break out center knock-outs and use a Chase Nipple and a lock-nut to hold the boxes together.



Size In.	Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt. Lb. Per 100
1/4	840	\$5.00	50	100	2
3/8	841	5.00	50	100	3
1/2	842	5.00	50	100	4
3/4	843	8.00	50	100	7
1	844	15.00	25	50	14
1 1/4	845	18.00	10	25	22
1 1/2	846	20.00	10	25	30
2	847	30.00	5	10	58
2 1/2	848	50.00	5	10	76
3	849	80.00	2	5	104
3 1/2	850	250.00	2	5	130
4	851	325.00	2	5	150
4 1/2	852	500.00	2	5	180
5	853	750.00	2	5	210

### Appleton Conduit Fittings

Schedule CF

Cadmium Finish

For Rigid Conduit (Heavy-Wall)

Conduit Couplings



No.	Size Inches	Carton	Std. Pkg.	Wt. Lb. per 100
18800	3/8	50	100	13
18801	1/2	50	100	24
18802	3/4	5	50	34
18803	1	5	25	52
18804	1 1/4	5	25	92
18805	1 1/2	5	25	116
18806	2	5	20	195
18807	2 1/2	5	10	380
18808	3	5	10	420
18809	3 1/2	2	5	520
18810	4	2	5	620
18812	5	1	2	900

### T&B \*Erickson Conduit Couplings

Approved by Underwriters' Laboratories



Conduit Union does away with running threads, saving dies and labor. Permits opening of conduit at any desired point. Enables the start of circuit from 2 outlets and makes a good, strong connection at any point in the run. The pipe ends abut so that no space is left between the lengths of conduit, therefore, it is not necessary to draw the 2 ends of the conduit together. Vibration will not loosen a connection made with an Erickson coupling. The hexagon shoulder and ridges on the outside of the coupling make an easy grip for a pipe wrench.

Conduit Size Inches	No.	Per 100	Car- ton	Std. Pkg.	Wt. Lb. Per 100
3/8	674	\$32.00	50	100	13
1/2	675	32.00	50	100	24
3/4	676	40.00	25	50	34
1	677	56.00	5	25	52
1 1/4	678	100.00	5	25	92
1 1/2	679	150.00	5	25	116
2	680	260.00	5	20	195
2 1/2	681	500.00	5	10	380
3	682	800.00	5	10	420
3 1/2	683	1200.00	2	5	520
4	684	1600.00	2	5	620
4 1/2	685	2000.00	1	2	850
5	686	2500.00	1	2	900

\*Trade mark registered.

### Appleton Male and Female Conduit Unions

Schedule CFS

Cadmium Finish

For Use With Rigid (Heavy-Wall)



Male



Female

Used in non-hazardous locations.

#### Male Unions

No.	Size Inches	Dimensions, In. Length Diameter	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
37460	1/2	2 1/8 1 9/16	10	50	25
37461	3/4 to 1 1/2	2 1/8 1 9/16	10	50	27
37462	3/4	2 1/8 1 9/16	10	50	23
37463	1	2 1/8 1 7/8	5	25	17
37464	1 1/4	3 2 3/16	5	25	26
37465	1 1/2	3 1/8 2 1/16	5	25	37
37466	2	3 3/4 3 1/8	2	10	21
37467	2 1/2	3 7/8 4 3/16	2	10	35
37468	3	4 3/16 5	1	5	19

#### Female Unions

No.	Size Inches	Dimensions, In. Length Diameter	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
37470	1 1/2	1 3/4 1 9/16	10	50	21
37471	3/4 to 1 1/2	1 3/4 1 9/16	10	50	23
37472	3/4	1 3/4 1 9/16	10	50	19
37473	1	1 7/8 1 7/8	5	25	14
37474	1 1/4	2 3/16 2 3/16	5	25	23
37475	1 1/2	2 3/16 2 1/16	5	25	33
37476	2	2 5/8 3 1/8	2	10	18
37477	2 1/2	2 7/8 4 3/16	2	10	32
37478	3	3 3/16 5	1	5	16

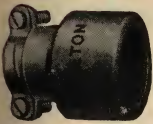


**Appleton Conduit Fittings**

Schedule CF

**Cadmium Finish**

For Rigid Conduit (Heavy-Wall)

**Combination Threaded Couplings**

For connecting flexible metallic conduit or armored bushed cable to rigid conduit.

No.	Size Inches	Designed to Hold	Max. Diam. Hole, In.	Carton	Std. Wt. Lb. Pkg. per 100
18839	1/2	*1 3/8-In. BX	...	10	50 8
18840	1/2	1/2-In. Flex.	1 5/16	10	50 9
18841	3/4	3/4-In. Flex.	1 1/8	10	50 13
18842	1	1-In. Flex.	1 13/16	5	25 9
18843	1 1/4	1 1/4-In. Flex.	1 11/16	5	25 10
18844	1 1/2	1 1/2-In. Flex.	2	5	25 19
18845	2	2-In. Flex.	2 15/16	5	10 9

**Combination No-Thread Couplings**

For connecting flexible metallic conduit or armored bushed cable to rigid conduit.

No.	Size Inches	Designed to Hold	Max. Diam. Hole, In.	Carton	Std. Wt. Lb. Pkg. per 100
18849	1/2	*1 3/8-In. BX	...	10	50 10
18850	1/2	1/2-In. Flex.	1 5/16	10	50 11
18851	3/4	3/4-In. Flex.	1 1/8	10	50 15

\*Armored Cable 1947 Code: 14-2, 14-3, 12-2, 12-3, 12-4, 10-2, 10-3, 10-4, 8-2, 8-3, 8-4, 6-2.

†Armored Cable 1940 Code: 14-2, 14-3, 14-4, 12-2, 12-3, 12-4 and Flexible Steel Conduit 3/8 inch.

**T&B Conduit Fittings****Tite-Bite Combination Couplings**

The Tite-Bite grip holds the flexible conduit securely and is vibration proof. The one-piece design cannot pull apart.

**For Connecting Flexible Conduit and Standard Threaded Rigid Conduit**

No.	Per 100	Size In.	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
440	\$15.00	1/2	10	50	18
441	20.00	3/4	10	50	25
442	35.00	1	5	25	35
443	50.00	1 1/4	5	25	40
444	75.00	1 1/2	5	25	76
445	100.00	2	5	25	92
446	150.00	2 1/2	5	25	180
447	200.00	3	2	5	240

**For Connecting Flexible Conduit and E.M.T. (Thinwall Conduit)**

No.	Per 100	Size In.	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
469	\$30.00	3/8	10	50	19
470	30.00	1/2	10	50	20
471	50.00	3/4	10	50	27
472	75.00	1	5	25	40
473	100.00	1 1/4	5	25	45
474	125.00	1 1/2	5	25	85
475	175.00	2	5	10	100

**For Connecting Flexible Conduit and Standard Threadless Rigid Conduit**

No.	Per 100	Size In.	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
450	\$30.00	1/2	10	50	20
451	50.00	3/4	10	50	27
452	75.00	1	5	25	40
453	100.00	1 1/4	5	25	45
454	125.00	1 1/2	5	25	85
455	175.00	2	5	10	100
456	250.00	2 1/2	5	10	200
457	375.00	3	2	5	275

**T&B Split Couplings**

For Flexible Conduit

Approved by Underwriters' Laboratories



For coupling short lengths of flexible steel conduit. Fittings are well bushed to protect the rough edges of flexible conduit.

Made of malleable iron.

No.	Per 100	Conduit In.	Unit Qty.	Std. Pkg.	Wt., Lb. per 100
46	\$18.50	1/2	25	100	28
47	24.00	3/4	10	100	38
48	32.00	1	25	50	68
49	44.00	1 1/4	25	50	75
56	60.00	1 1/2	10	25	100
57	86.00	2	10	25	180
58	150.00	2 1/2	5	10	250
59	200.00	3	5	10	350

**National Conduit Couplings**

Tangent Set Screw Type



For flexible steel conduit.

Galvanized finish.

Packed 100 in standard package.

No.	Per 100	Open I.D. inches	Closed I.D. inches	For Flexible Steel Conduit inches	No. in Carton	Weight per Std. Pkg. pounds
2182	\$31.62	1 1/2	1 1/4	1 1/2	25	7
2184	39.88	1 3/4	1 5/8	1 3/4	10	24

**No. 2193-S National Rigid Conduit to Flexible Conduit Connectors****Squeeze Type**

For 1 1/4-inch conduit. Galvanized finish. Open I.D., 1 5/8 inches; closed I.D., 1 1/2 inches.

Packed 25 in std. pkg.; 5 in carton. Weight per standard package, 16 lb.

No. 2193-S.....per 100 \$60.50

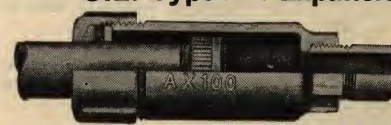
**No. 2192-EZ National Conduit Couplings****EZ Hinged Strap Type**

Rigid to flexible. For one-inch conduit. Galvanized finish.

Open I.D., 1 7/8 inches; closed I.D., 1 1/2 inches.

Packed 25 in standard package; 5 in carton. Weight per std. pkg., 9 pounds.

No. 2192-EZ.....per 100 \$43.30

**O.Z. Type AX Expansion Fittings**

A weathertight fitting furnished complete with insulated bushing. Constructed with copper grounding ring. Standard finish is cadmium plated.

No.	Each	Conduit Size Inches	Free Lgth. Expansion Chamber In.	Max. O.D. In.	Overall Length Inches	Approx. Wt. Lb.
AX 50	\$2.00	1/2	4	1 7/8	6 1/4	1 3/8
AX 75	2.40	3/4	4	2 1/4	6 3/8	2
AX100	3.00	1	4	2 5/8	6 5/8	2 1/2
AX125	3.75	1 1/4	4	3	6 5/8	3 1/4
AX150	5.25	1 1/2	4	3 1/2	6 5/8	5
AX200	7.50	2	4	4	7 1/8	7
AX250	11.00	2 1/2	4	4 1/2	7 1/2	9
AX300	15.00	3	4	5 1/8	8 1/8	12

Fitting can be furnished in bronze; prices on request.



## O.Z. Type IC Insulating Couplings

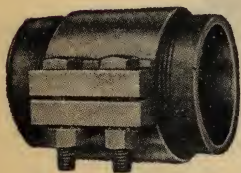
A canvas bakelite insulating coupling having a substantial center shoulder, which prevents butting of the conduits to assure a definite break in the metallic path.



No.	Each	Conduit DIMENSIONS, INCHES			
		Size	Outside Diameter	Length	Shoulder
IC 50	\$ .90	1/2	1 1/4	1 3/4	3/8
IC 75	1.20	3/4	1 1/2	1 3/4	3/8
IC100	1.80	1	1 13/16	2 3/16	3/8
IC125	2.50	1 1/4	2 3/16	2 3/8	1/2
IC150	3.20	1 1/2	2 7/16	2 7/8	1/2
IC200	4.00	2	2 13/16	2 7/8	1 1/2
IC250	6.50	2 1/2	3 7/16	3 3/4	3/4
IC300	8.50	3	4 1/8	3 13/16	3/4
IC350	10.50	3 1/2	4 5/8	4	3/4
IC400	13.00	4	5 1/4	4 5/16	1

## O.Z. Type SP Split Couplings

Eliminates use of running thread.



Constructed so that it will slip over the conduit when in an open position to permit butting of the ends of the conduit. The fitting can then be brought back into proper position, meshed and tightened, making a rigid conduit connection.

Made of malleable iron, cadmium plated.

No.	Each	Conduit Size Inches	No.	Each	Conduit Size Inches
SP125	\$1.35	1 1/4	SP350	\$5.00	3 1/2
SP150	1.50	1 1/2	SP400	6.50	4
SP200	1.85	2	SP450	10.00	4 1/2
SP250	2.75	2 1/2	SP500	15.00	5
SP300	3.75	3	.....	.....	.....

## Appleton Conduit End Fittings

Schedule CF

Cadmium Finish

Threaded and No-Thread



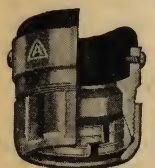
Threaded  
1/2 to 4-Inch



No-Thread  
1/2 to 2-Inch



No-Thread  
2 1/2 to 4-Inch



No-Thread  
(Sectional View)

Inside diameter of the bushing is the same as the inside dimension of the pipe as shown in sectional view.

The Bushing is made of bakelite and is held in place by two screws.

The No-Thread type can be installed on the end of pipe without threading of the conduit.

Size Inches	Car-ton	Threaded			No-Thread		
		No.	Std. Pkg.	Wt. Lb.	No.	Std. Pkg.	Wt. Lb.
1/2	20	7190	100	23	71N90	100	23
3/4	15	7191	75	24	71N91	50	27
1	10	7192	50	23	71N92	25	27
1 1/4	5	7193	40	25	71N93	10	31
1 1/2	5	7194	20	17	71N94	10	22
2	1	7195	15	20	71N95	5	26
2 1/2	1	7196	10	22	71N96	5	32
3	1	7197	5	15	71N97	5	18
3 1/2	1	7198	5	21	71N98	5	26
4	1	7199	5	25	71N99	5	38

## T &amp; B Threadless Couplings and Connectors

Approved by Underwriters' Laboratories



Connector



Coupling

For standard rigid conduit. Easy to tighten; made ready with fingers, then a turn with a wrench, and the connection is permanent. Made of malleable iron and steel.

## Couplings

No.	Per 100	Size Inches	Std. Pkg.	Unit Quan.	Weight Pounds per 100
8120	\$50.00	1/2	100	50	21
8220	75.00	3/4	50	25	30
8320	100.00	1	25	5	50
8420	150.00	1 1/4	25	5	100
8520	200.00	1 1/2	10	2	135
8620	300.00	2	5	1	220
8720	400.00	2 1/2	5	1	585
8820	900.00	3	5	1	680
8850	1200.00	3 1/2	5	1	800
8970	2000.00	4	5	1	940

## Connectors

No.	Per 100	Size Inches	Std. Pkg.	Unit Quan.	Weight Pounds per 100
8121	\$30.00	1/2	100	25	18
8221	50.00	3/4	50	25	25
8321	100.00	1	25	5	40
8421	150.00	1 1/4	25	5	75
8521	200.00	1 1/2	10	2	100
8621	300.00	2	5	1	180
8721	400.00	2 1/2	5	1	360
8821	600.00	3	5	1	470
8851	800.00	3 1/2	5	1	560
8971	1000.00	4	5	1	630

## Appleton Conduit Fittings

Schedule CF

Cadmium Finish

For Use with Standard Rigid Conduit (Heavy Wall)

No-Thread Couplings



1 1/2 to 2-Inch



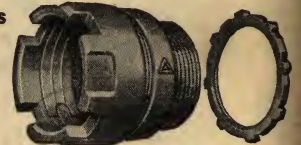
2 1/2 to 4-Inch

No.	Size In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.	No.	Size In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
82N80	1/2	50	100	23	80N90	2	1	5	15
82N81	3/4	25	50	18	80N91	2 1/2	1	5	21
82N82	1	5	25	16	80N92	3	1	5	26
82N83	1 1/4	5	25	25	80N93	3 1/2	1	5	36
82N84	1 1/2	2	10	15	80N94	4	1	5	34

## Type L Connectors



1 1/2 to 2-Inch



2 1/2 to 4-Inch

No.	Size In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.	No.	Size In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
80N95	1/2	25	100	15	82N90	2	1	5	9
80N96	3/4	25	50	12	82N91	2 1/2	1	5	13
80N97	1	5	25	10	82N92	3	1	5	16
80N98	1 1/4	5	25	17	82N93	3 1/2	1	5	24
80N99	1 1/2	2	10	10	82N94	4	1	5	33

## Type CN Connectors



No.	Size In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.	No.	Size In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
80N20	1/2	25	100	17	80N22	1	5	25	13
80N21	3/4	25	50	15	80N23	1 1/4	5	25	19



## Appleton Conduit Fittings

Schedule TW

For Electrical Metallic Tubing—Cadmium Finish  
Gland Ring Type Couplings and Connectors  
Approved Raintight—PATENT 2064140  
Couplings



Gland ring type coupling and connector are furnished with a round split curved ring and tightening nut. The ring drops into position and the nut tightens the ring securely to the electrical metallic tubing, making a rigid connection which is absolutely raintight. Couplings in 1/2 to 2-inch sizes have hexagonal nuts and the center portion is also hexagonal so that it can be held rigidly with wrench when connecting lengths of electrical metallic tubing.

No.	Size In.	Std. Pkg.	Car- ton	Wt., Lb. Std. Pkg.
95T038	3/8	200	50	12
95T050	1/2	200	50	13
95T075	3/4	100	25	15
95T100	1	50	25	20
95T125	1 1/4	25	5	50
95T150	1 1/2	10	2	80
95T200	2	5	2	140

\*Designed to take 3/8-inch electrical metallic tubing, and the other end is threaded and furnished with locknut to fit in regular 1/2-inch knock out.

### Connectors



Connector is similar to coupling except that one end is threaded and equipped with a locknut for use in connecting to boxes.

No.	Size In.	Std. Pkg.	Car- ton	Wt., Lb. Std. Pkg.
96T038	3/8	200	50	10
96T050	1/2	200	50	11
96T075	3/4	100	25	13
96T100	1	50	25	20
96T125	1 1/4	25	5	50
96T150	1 1/2	10	2	60
96T200	2	5	2	100

## Appleton Conduit Adapters

Schedule TW

For Use with Electrical Metallic Tubing

For Threaded Conduit Fittings



This adapter practically makes a no-thread fitting out of any threaded conduit fitting.

No special parts are needed.

No.	Size In.	Car- ton	Std. Pkg.	Wt., Lb. per 100
80T59	3/8	50	200	1 1/2
80T60	1/2	50	200	1 1/2
80T61	3/4	25	100	5
80T62	1	25	50	6
80T63	1 1/4	10	20	10
80T64	1 1/2	5	10	15
80T65	2	2	5	20

## Appleton No-Thread End Conduit Fittings

Schedule TW  
Cadmium Finish



No.	Size In.	Car- ton	Std. Pkg.	Wt., Lb. Per 100
71T90	1/2	50	300	28
71T91	3/4	50	300	58
71T92	1	25	300	116
71T93	1 1/4	20	200	370
71T94	1 1/2	20	200	380
71T95	2	20	100	340

## T&B Watertight Couplings and Connectors

For Thinwall Conduit (E.M.T.)

With Slotted Steel Compression Rings and Watertight Brass Sealing Rings

Approved by Underwriters' Laboratories

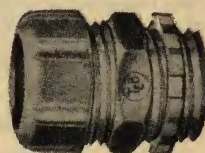
Has formed steel ribbed glands, with opposite faces parallel, which are easily tightened with wrench or pliers. Double-ring watertight construction.

### Couplings



Size Inches	No.	Per 100	Car- ton	Std. Pkg.	Wt. Lb. per 100
3/8	5118	\$12.00	50	200	13
1/2	5120	12.00	50	200	13
3/4	5220	17.00	25	100	20
1	5320	25.00	25	50	28
1 1/4	5420	50.00	5	25	60
1 1/2	5520	70.00	2	10	100
2	5620	100.00	2	5	140

### Connectors

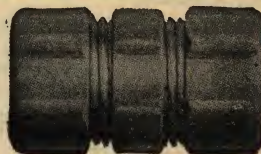


Size Inches	No.	Per 100	Car- ton	Std. Pkg.	Wt., Lb. per 100
3/8	5119	\$12.00	50	200	12
1/2	5121	12.00	50	200	12
3/4	5221	17.00	25	100	18
1	5321	25.00	25	50	26
1 1/4	5421	50.00	5	25	60
1 1/2	5521	70.00	2	10	100
2	5621	100.00	2	5	140

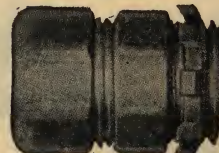
## T&B Non-Watertight Couplings and Connectors

For Thinwall Conduit (E.M.T.)

Approved by Underwriters' Laboratories



No. 4270, Coupling



No. 4271, Connector

Light, strong and efficient. Has satin-smooth threads and rounded edges. No burrs in the interior of the body.

Ribbed design of the glands means parts are easily tightened.

Size In.	No.	Per 100	Car- ton	Std. Pkg.	Wt., Lb. per 100
1/2	4270	\$8.00	50	200	11
1 1/2	4271	8.00	50	200	9

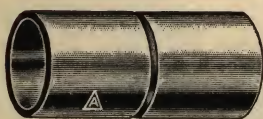


## Appleton Indenter Type Couplings, Connectors and Tools

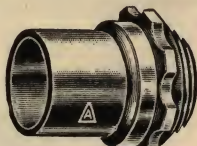
### Schedule TW

For Use With Electrical Metallic Tubing  
(Threadless Thin-Wall Conduit)

### Couplings and Connectors



Coupling



Connector

Couplings				Connectors			
Size In.	Carton	Std. Pkg.	No.	Wt. Std. Pkg. Lb.	No.	Wt. Std. Pkg. Lb.	
1/2	50	200	97T050	10	98T050	12	
3/4	25	100	97T075	10	98T075	12	
1	10	50	97T100	6	98T100	7 1/2	

### Indenter Tools and Points

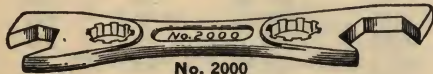


Each tool is furnished complete with points for 1/2, 3/4 or 1-inch tubing as listed.

No. ....	14200	14201	14202
With Points for Tubing. .... inches	1/2	3/4	1

No. 14210 indenter points for above tools are available.

## Electrician's Thin Wall Conduit Utility Tools



No. 2000

With two of these tools it is possible to tighten nuts on couplings, remove burrs from conduit, ream for a smooth edge, and tighten nut at outlet box. Will fit both 1/2 and 3/4-inch thin wall conduit fittings.

Drop forged from selected steel. Heat-treated and tempered. Heavily plated with polished heads.

Packed 12 in a display carton.

Weight per dozen, 5 pounds.

No. 2000, For Appleton and Similar Type Fittings, Openings, 1 1/16 and 1 3/16 Inches. ....	each	\$2.00
No. 2001, For T & B and Similar Type Fittings, Openings, 1x1 1/4 Inches. ....	each	2.00

## No. 33 T & B Wrenches and Reamers For E.M.T.



A combination tool. Extremely handy for all 1/2 and 3/4-inch E.M.T. installations. The same tool tightens the glands on couplings and connectors, removes burrs from tubing, and reams edge of conduit. Drop-forged steel, heat-treated and tempered.

No. 33. .... each \$1.00

## National Conduit Locknuts



Size In.	Per 100	Std. Pkg.	Wt., Lb. Std. Pkg.	Size In.	Per 100	Std. Pkg.	Wt., Lb. Std. Pkg.
2 1/2	\$14.66	30	8	4 1/2	\$80.80	10	10
3	21.90	25	10	5	97.98	10	13
3 1/2	33.72	25	14	6	175.98	10	20
4	40.76	25	20	...	...	...	...

## Appleton Tiger-Grip Bondnuts

### Schedule LB

### Cadmium Finish



3/8 to 2 Inches



2 1/2 and 3 Inches



3 1/2 to 6 Inches

No.	Size In.	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
BL-38	3/8	100	1000	14
BL-50	1/2	100	2500	30
BL-75	3/4	100	1000	21
BL-100	1	50	500	21
BL-125	1 1/4	50	200	12
BL-150	1 1/2	50	100	7
BL-200	2	25	50	6

## Appleton E-Z-On Locknuts

### Schedule LB

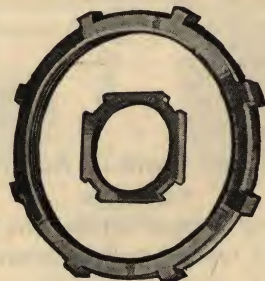
### Cadmium Finish

Furnished in galvanized finish only.

BL-250	2 1/2	10	50	6
BL-300	3	5	50	16
BL-350	3 1/2	5	25	8
BL-400	4	5	25	10
BL-500	5	2	10	9
BL-600	6	2	10	14

## T & B Locknuts

Approved by Underwriters' Laboratories



Nos. 140 to 145 are extra heavy steel and have 4 notches for driving. Nos. 146 to 153 are malleable iron and have 8 high ribs.


Steel					
Size In.	Cat. No.	Per 100	Unit Pkg.	Std. Pkg.	Wt., Lb. per 100
3/8	140	\$2.50	100	1000	1 1/2
1/2	141	2.50	100	2500	1 1/2
3/4	142	3.50	100	1000	2 1/2
1	143	6.00	50	500	4
1 1/4	144	10.00	50	200	7
1 1/2	145	15.00	50	100	8
2	146	20.00	25	50	12

### Malleable Iron

Size In.	Cat. No.	Per 100	Unit Pkg.	Std. Pkg.	Wt., Lb. per 100
2 1/2	147	\$30.00	10	30	22
3	148	50.00	5	25	38
3 1/2	149	70.00	5	25	48
4	150	100.00	5	25	52
4 1/2	151	140.00	2	10	65
5	152	160.00	2	10	90
6	153	200.00	2	10	110



## National Conduit Bushings



Size In.	Per 100	Std. Pkg.	Wt., Lb. Std. Pkg.
1/2	\$1.28	2500	63
3/4	2.04	1000	37
1	3.58	500	38
1 1/4	6.02	200	20
1 1/2	6.32	100	12
2	9.28	50	9
2 1/2	15.60	30	10
3	25.06	25	13
3 1/2	46.10	25	16
4	66.52	25	23
4 1/2	117.90	10	10
5	143.46	10	15
6	279.62	10	20


Galvanized finish

Packed in strong wooden cases.

## Appleton Conduit Bushings

Schedule LB

## Cadmium Finish



No.	Size In.	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
BU-38	3/8	100	1000	30
BU-50	1/2	100	2500	55
BU-75	3/4	100	1000	37
BU-100	1	50	500	32
BU-125	1 1/4	50	200	21
BU-150	1 1/2	50	200	26
BU-200	2	25	100	36
BU-250	2 1/2	10	50	25
BU-300	3	5	50	32
BU-350	3 1/2	5	25	20
BU-400	4	5	25	29
BU-500	5	2	10	16
BU-600	6	2	10	21

Bushings are furnished with galvanized finish only.


Bushings cannot be assorted to make up standard package.

## T&amp;B Malleable Conduit Bushings

Approved by Underwriters' Laboratories

A protection for conductors. Round top shoulder overlaps end of the conduit. High ribs permit easy turning.

Made of tough malleable iron protected from corrosion with Tabolite.



No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100	No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
121	\$6.00	3/8	100	1000	2	128	\$60.00	2 1/2	10	30	30
122	6.00	1/2	100	2500	2 1/2	129	90.00	3	5	25	40
123	8.00	3/4	100	1000	4	130	200.00	3 1/2	5	25	76
124	15.00	1	50	500	9	131	300.00	4	5	25	108
125	20.00	1 1/4	50	200	11	132	400.00	4 1/2	2	10	120
126	25.00	1 1/2	50	100	13	133	500.00	5	2	10	165
127	40.00	2	25	50	22	134	600.00	6	2	10	260


## T&amp;B Pennies

Approved by Underwriters' Laboratories

Used under conduit bushings to seal conduit during construction.

Removed from bushing with screwdriver.

Made of steel with Tabolite finish.



For Conduit Size Inches	No.	Per 100	Car- ton	Std. Pkg.	Weight Pounds per 1000
1/2	815	\$ .40	500	1000	4
3/4	816	.60	250	500	7
1	817	.80	125	250	11
1 1/4	818	1.20	125	250	17
1 1/2	819	1.60	50	100	26
2	820	2.00	50	100	28
2 1/2	821	3.00	50	100	56
3	822	4.00	50	100	84
3 1/2	823	4.50	50	100	125
4	824	5.00	25	100	150
4 1/2	825	6.00	25	100	175

## National Bushcaps

## Galvanized Bushings—Tin Caps



A National Bushcap consists of a full strength, National Malleable Iron Bushing closed by a tin cap. The cap is pressed in tightly and will stay put. It can be easily removed when desired.

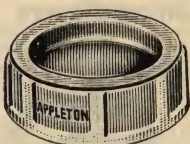
A National Bushcap placed on an open end, when conduit is installed, will keep it clean and clear until the wires are drawn in.

Size.....in.	1/2	3/4	1	1 1/4	1 1/2	2
Per 100.....	\$3.00	3.80	7.68	12.62	13.86	28.74
Standard Package....	2500	1000	500	200	100	50
Weight per Standard Package.....lbs.	68	38	39	25	17	11

## Appleton Capped Bushings

Schedule LB

## Cadmium Finish



No.	Size Inches	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
BUC-50	1/2	100	2500	75
BUC-75	3/4	100	1000	39
BUC-100	1	50	500	35
BUC-125	1 1/4	25	200	24
BUC-150	1 1/2	10	100	18
BUC-200	2	10	50	10
BUC-250	2 1/2	5	30	16
BUC-300	3	5	25	17
BUC-350	3 1/2	5	25	21
BUC-400	4	5	25	28

## National Malleable Iron Insulated Bushings



Designed to prevent disastrous grounds which frequently occur with uninsulated bushings. Insulating ring is an integral part of bushing and cannot loosen or fall out. Extremely tough, but not brittle, material and will stand intense strain in installation and use.

Made to N.E.C. standard.

Sherardized; minimum four-dip Preece test; rustproof.

No.....	860	867
Per 100.....	\$26.26	218.76
Size.....inches	1/2	3
Carton.....	10	1
Standard Package.....	50	5
Weight per Standard Package.....pounds	6	3 1/2

## T&amp;B Knockout Plugs



Quickly installed. Fit tight and stay in place.

Face of the plug is convex. A slight blow after it is inserted in the hole flattens it out and spreads lugs.

Knockout Size Inches	No.	Per 100	Car- ton	Std. Pkg.	Wt. Lb. per 100
1/2	1451	\$5.00	50	100	2
3/4	1452	5.00	50	100	2 1/2
1	1453	8.00	50	100	3
1 1/4	1454	10.00	50	100	3 1/2
1 1/2	1455	12.00	50	100	4



### Appleton Male Type Insulating End Bushings

Schedule EB



Type MEB



Type MEBL

Size Inches	Type MEB Without Locknut No.	Type MEBL With Locknut No.	Diam. Inches	DEPTH, IN. A B	Std. Pkg.
1/2	29301	29321	1 1/8	3/4 7/16	100
3/4	29302	29322	1 5/16	7/8 7/16	100
1	29303	29323	1 5/8	7/8 9/16	100
1 1/4	29304	29324	2	7/8 9/16	50
1 1/2	29305	29325	2 1/4	7/8 9/16	50
2	29306	29326	2 3/4	1 5/16 9/16	50
2 1/2	29307	29327	3 1/4	1 1/4 3/4	20
3	29308	29328	3 7/8	1 1/4 3/4	20
3 1/2	29309	29329	4 3/8	1 1/4 3/4	10
4	29310	29330	5	1 1/4 3/4	10

### Appleton Insulating End Bushing Covers

Schedule EB

For Rigid Conduit (Heavy Wall)



Blank  
Cover



2-Hole  
Cover



3-Hole  
Cover

Made of bakelite, laminated.

Size Inches	2-Hole		3-Hole		Std. Pkg.
	Blank No.	No. Diam. Hole Inches	No. Diam. Hole Inches		
1/2	29140	29180 1 7/16	29160 1 1/4	50	
3/4	29141	29181 1 11/16	29161 1 7/8	50	
1	29142	29182 1 5/8	29162 1 11/8	50	
1 1/4	29143	29183 1 9/8	29163 1 5/8	10	
1 1/2	29144	29184 1 11/8	29164 1 5/8	10	
2	29145	29185 1 7/8	29165 1 3/8	10	
2 1/2	29146	29186 1 11/8	29166 1 5/8	5	
3	29147	29187 1 3/8	29167 1 11/8	5	
3 1/2	29148	29188 1 5/8	29168 1 3/8	5	
4	29149	29189 1 7/8	29169 1 5/8	5	
5	29151	29191 2 1/4	29171 1 7/8	1	
6	29152	29192 2 3/4	29172 2 1/4	1	

### Appleton Snap-In Blanks and Bushings

Schedule LB

Snaps into place; closes up knockouts in service or outlet boxes. One-piece; rust-proofed; neat in appearance.



No.	Size In.	Wt. Lb. per 1000
18870	1 1/2	17
18871	3/4	20
18872	1	30
18873	1 1/4	40
18874	1 1/2	43
18875	2	65



No.	Size In.	Wt. Lb. per 1000
18880	1 1/2	15
18881	3/4	20

#### Bushings

The 1/2-inch bushing has hole for single braid rubber-covered wire up to No. 8; 3/4-inch bushing has hole for double braid wire up to No. 4.

### Appleton Insulating End Bushings

Schedule EB



Type EB—Deep Type  
Threaded



Type EBC—Deep Type  
No-Thread  
With Set Screw



Type EBS—  
Shallow Type  
Threaded

Designed for use where space is limited and where a neat appearing and substantial insulated outlet is required on the end of conduit.

Made of bakelite, laminated, which has a high insulative property and mechanical strength.

Special treatment renders bushing impervious to moisture absorption and affords excellent electrical properties.

Tensile strength per square inch, 8000 pounds.

Dielectric strength, 700 volts per Mil.

Flexural strength per square inch, 16000 pounds.

After immersion in water for 24 hours at 25 degrees C., moisture absorption is 1.3 to 2 per cent.

Withstands heat test of 200 degrees F. without change in shape.

#### Type EB and EBC—Deep Type

For 1/2 to 6-Inch Rigid Conduit (Heavy Wall)

Type EB Threaded No.	Type EBC No-Thread No.	Size Inches	DEPTH, IN. Diameter	Std. Pkg.	Wt. 100 per Lb.
29101	29201	1/2	3/4 1 1/8	50	2
29102	29202	3/4	3/4 1 5/16	50	2 1/2
29103	29203	1	7/8 1 5/8	50	5 1/2
29104	29204	1 1/4	7/8 2	10	7 1/2
29105	29205	1 1/2	7/8 2 1/4	10	7 1/2
29106	29206	2	1 5/16 2 3/4	10	10
29107	29207	2 1/2	1 1/4 3 1/4	5	20
29108	29208	3	1 1/4 3 7/8	5	20
29109	29209	3 1/2	1 1/4 4 3/8	5	25
29110	29210	4	1 1/4 5	5	25
29112	29212	5	1 1/4 6	1	50
29113	29213	6	1 1/4 7	1	60

#### Type EBC—Deep Type—No thread

For 1/2 to 2-Inch Electrical Metallic Tubing

No.	Pipe Size Inches	DEPTH, IN. Diameter	Std. Pkg.	Wt. Lb. per 100
29T201	1/2	3/4 63/64	50	2
29T202	3/4	3/4 1.218	50	2 1/2
29T203	1	7/8 1.460	50	5 1/2
29T204	1 1/4	7/8 1.803	10	7 1/2
29T205	1 1/2	7/8 2.020	10	7 1/2
29T206	2	1 5/16 2.480	10	10

#### Type EBS—Shallow Type Threaded

For 1/2 to 6-Inch Rigid Conduit (Heavy Wall)

No.	Size Inches	DEPTH, IN. Diameter	Std. Pkg.	Wt. Lb. per 100
29121	1/2	1 1/8	50	1 1/2
29122	3/4	1 5/16	50	1 1/2
29123	1	1 5/8	50	2 1/2
29124	1 1/4	2	10	5
29125	1 1/2	2 1/4	10	5
29126	2	2 3/4	10	7 1/2
29127	2 1/2	3 1/4	5	15
29128	3	3 7/8	5	15
29129	3 1/2	4 3/8	5	20
29130	4	5	5	25
29132	5	6	1	35
29133	6	7	1	40

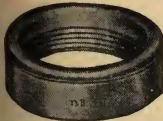


## T &amp; B Insulating End Bushings

Used to provide a smoothly rounded insulated surface protecting wires against possible abrasion and shorts where wires emerge from conduit. Especially useful where conduit terminates in switch or junction boxes and also on conduit runs terminating behind switch boards, at motors, etc.

Formed from solid insulating material of the strongest and most durable type available, and are unaffected by normal heat, moisture and corrosive agents.

## Deep Type—Threaded for 1/2 to 6-Inch Conduit



For ends of conduit at switchboards, motors, etc. Can be used with insulating inserts. Long threads and rugged design assure against breakage.

No.	Each	Size In.	DIMENSIONS, INCHES Depth Diameter	Std. Pkg.	Wt. Lb. Per 100
70D	\$.21	1/2	3/4 1 1/8	50	2
71D	.25	3/4	7/8 1 5/16	50	2 1/2
72D	.35	1	7/8 1 5/8	50	5 1/2
73D	.55	1 1/4	7/8 2	10	7 1/2
74D	.60	1 1/2	7/8 2 1/4	10	7 1/2
75D	.85	2	1 15/16 2 3/4	10	10
76D	1.65	2 1/2	1 3/4 3 1/4	5	20
77D	1.75	3	1 3/4 3 7/8	5	20
78D	2.20	3 1/2	1 3/4 4 3/8	5	25
79D	2.90	4	1 3/4 5	5	25
80D	4.50	4 1/2	1 3/4 5 1/2	1	50
81D	6.50	5	1 3/4 6	1	50
82D	9.50	6	1 3/4 7	1	60

## Shallow Type—Threaded for 1/2 to 6-Inch Conduit



The cut down design will fit in limited spaces such as inside of junction and switch boxes. Where insulating inserts are required, deep type is recommended.

No.	Each	Size In.	DIMENSIONS, INCHES Depth Diameter	Std. Pkg.	Wt. Lb. Per 100
70S	\$.15	1/2	1/2 1 1/8	50	1 1/2
71S	.20	3/4	1/2 1 5/16	50	1 1/2
72S	.30	1	3/4 1 5/8	50	2 1/2
73S	.45	1 1/4	3/4 2	10	5
74S	.50	1 1/2	3/4 2 1/4	10	5
75S	.75	2	3/4 2 3/4	10	7 1/2
76S	1.50	2 1/2	3/4 3 1/4	5	15
77S	1.60	3	3/4 3 7/8	5	15
78S	1.85	3 1/2	3/4 4 3/8	5	20
79S	2.00	4	3/4 5	5	25
80S	3.10	4 1/2	3/4 5 1/2	1	30
81S	4.30	5	3/4 6	1	35
82S	7.00	6	3/4 7	1	40



## Threadless Type—For 1/2 to 6-Inch Standard Heavywall Conduit

Can be used with insulating inserts.

No.	Each	Size In.	DIMENSIONS, INCHES Depth Diameter	Std. Pkg.	Wt. Lb. Per 100
70N	\$.36	1/2	3/4 1 1/8	50	2
71N	.40	3/4	7/8 1 5/16	50	2 1/2
72N	.50	1	7/8 1 5/8	50	5 1/2
73N	.70	1 1/4	7/8 2	10	7 1/2
74N	.75	1 1/2	7/8 2 1/4	10	7 1/2
75N	1.00	2	1 15/16 2 3/4	10	10
76N	1.85	2 1/2	1 3/4 3 1/4	5	20
77N	1.95	3	1 3/4 3 7/8	5	20
78N	2.40	3 1/2	1 3/4 4 3/8	5	25
79N	3.10	4	1 3/4 5	5	25
80N	4.70	4 1/2	1 3/4 5 1/2	1	50
81N	6.70	5	1 3/4 6	1	50
82N	9.70	6	1 3/4 7	1	60



## Threadless Type—For Thinwall Conduit (E.M.T.)

Can be used with the insulating inserts.

No.	Each	Size In.	DIMENSIONS, INCHES Depth Diameter	Std. Pkg.	Wt. Lb. Per 100
83E	\$.36	3/8	3/4 1	50	2
70E	.36	1/2	3/4 1 1/8	50	2
71E	.40	3/4	7/8 1 5/16	50	2 1/2
72E	.50	1	7/8 1 5/8	50	5 1/2
73E	.70	1 1/4	7/8 2	10	7 1/2
74E	.75	1 1/2	7/8 2 1/4	10	7 1/2
75E	1.00	2	1 15/16 2 3/4	10	10

## T &amp; B Insulating End Bushings

## Male Type—Without Locknut



Used to insulate wires entering outlet or switch box knockouts and auxiliary gutters.

No.	Each	Size In.	DIMENSIONS, INCHES Diam. Depth Over All Depth Thrd.	Std. Pkg.	Wt. Lb. Per 100
83M	\$.25	3/8	1 1/8 3/4 7/16	100	1 1/2
70M	.25	1/2	1 1/8 3/4 7/16	100	1 1/2
71M	.30	3/4	1 1/8 3/4 7/16	100	2
72M	.40	1	1 1/8 3/4 7/16	100	3
73M	.70	1 1/4	2 7/8 1 5/16 9/16	50	6
74M	.75	1 1/2	2 1/4 7/8 1 5/16 9/16	50	7
75M	1.05	2	2 3/4 1 5/16 9/16	50	8
76M	1.85	2 1/2	3 3/4 1 3/4 9/16	20	20
77M	1.95	3	3 7/8 1 1/4 3/4	20	25
78M	2.40	3 1/2	4 3/8 1 1/4 3/4	10	30
79M	3.10	4	5 1 1/4 3/4	10	40
80M	4.70	4 1/2	5 1/2 1 1/4 3/4	5	50
81M	6.80	5	6 1 1/4 3/4	5	65
82M	9.75	6	7 1 1/4 3/4	5	90



## Male Type—With Locknut

Used to insulate wires entering outlet or switch box knockouts and auxiliary gutters.

No.	Each	Size In.	DIMENSIONS, INCHES Diam. Depth Over All Depth Thrd.	Std. Pkg.	Wt. Lb. Per 100
83L	\$.29	3/8	1 1/8 3/4 7/16	100	3
70L	.29	1/2	1 1/8 3/4 7/16	100	3
71L	.35	3/4	1 1/8 3/4 7/16	100	5
72L	.48	1	1 1/8 3/4 7/16	100	7
73L	.73	1 1/4	2 7/8 1 5/16 9/16	50	14
74L	.91	1 1/2	2 1/4 7/8 1 5/16 9/16	50	18
75L	1.34	2	2 3/4 1 5/16 9/16	50	26
76L	2.29	2 1/2	3 3/4 1 3/4 9/16	20	45
77L	2.80	3	3 7/8 1 1/4 3/4	20	60
78L	3.80	3 1/2	4 3/8 1 1/4 3/4	10	80
79L	4.65	4	5 1 1/4 3/4	10	100
80L	5.70	4 1/2	5 1/2 1 1/4 3/4	5	125
81L	7.90	5	6 1 1/4 3/4	5	160
82L	11.00	6	7 1 1/4 3/4	5	190

## T &amp; B Insulating Inserts



Blank



2-Hole



3-Hole

Blank is for use with deep type, threaded and threadless, insulating end bushings where it is desired to insulate each conductor.

Two-Hole and Three-Hole will pass the maximum size of conductors allowed in the conduit by the N.E.C.

Size Inches	Blank			2-Hole			3-Hole		
	No.	Each	Std. Pkg.	No.	Each	Std. Pkg.	No.	Each	Std. Pkg.
3/8	83P	\$.12	50	70B	\$.15	50	70J	\$.15	50
1/2	70P	.12	50	70B	.21	50	70J	.21	50
3/4	71P	.15	50	70B	.30	50	72T	.30	50
1	72P	.20	50	72B	.40	50	73T	.40	50
1 1/4	73P	.30	10	73B	.53	10	74T	.53	10
1 1/2	74P	.35	10	74B	.66	10	75T	.66	10
2	75P	.40	10	75B	1.00	5	76T	1.00	5
2 1/2	76P	.55	5	76B	1.30	5	77T	1.30	5
3	77P	.65	5	77B	1.90	5	78T	1.90	5
3 1/2	78P	1.25	5	78B	2.40	5	79T	2.40	5
4	79P	1.75	5	79B	2.90	1	80T	2.90	1
4 1/2	80P	2.25	1	80B	3.30	1	81T	3.30	1
5	81P	2.50	1	81B	3.90	1	82T	3.90	1
6	82P	3.00	1	82B					



## O.Z. Type BB Insulating Bushings

## With Locknut



Used for insulating cable passing through metal boxes or troughs. Made of bakelite with standard conduit threads.

Also available in type EB. Prices on request.

No.	Each	Conduit Size Inches	DIMENSIONS, INCHES		
			Diameter of Hole	Outside Diameter	Length of Thread
BB 50	\$ .30	1/2	1/2	1 1/8	7/16
BB 75	.35	3/4	1 1/16	1 5/16	7/16
BB100	.50	1	1 5/16	1 7/8	9/16
BB125	.75	1 1/4	1 7/8	2	9/16
BB150	.90	1 1/2	1 7/8	2 1/4	9/16
BB200	1.35	2	1 7/8	2 3/4	9/16
BB250	2.30	2 1/2	2 1/8	3 3/8	9/16
BB300	2.80	3	2 13/16	4	3/4
BB350	3.80	3 1/2	3 1/4	4 1/2	3/4
BB400	4.65	4	3 3/4	5	3/4
BB450	5.70	4 1/2	4 3/8	5 1/2	3/4
BB500	7.90	5	4 7/8	6	3/4
BB600	11.00	6	5 7/8	7	3/4

## O.Z. Type B Insulated Conduit Bushings



Illustrates how Insulating Material is Molded and Locked into the Casting

A bushing designed for prevention of grounds using bakelite as an insulator. Casting made of malleable iron and cadmium plated. Bushing is capped.

Can be supplied hot-dipped galvanized, bronze or aluminum. Prices on application.

No.	Each	Conduit Size In.	Diam. In.	Ht. In.	Std. Pkg.
B 50	\$ .10	1/2	1	1 1/2	100
B 75	.20	3/4	1 1/4	1 9/16	50
B100	.30	1	1 1/8	1 11/16	25
B125	.40	1 1/4	1 7/8	3/4	20
B150	.50	1 1/2	2 1/8	3/4	20
B200	.70	2	2 3/4	3/4	10
B250	1.00	2 1/2	3 1/4	7/8	10
B300	1.35	3	3 15/16	1 15/16	5
B350	1.75	3 1/2	4 9/16	1	5
B400	2.25	4	5	1 1/16	5
B450	3.25	4 1/2	5 9/16	1 1/16	1
B500	4.50	5	6 1/4	1 1/16	1
B600	7.00	6	7 3/16	1 3/8	1

## Federal Porcelain Spring Clamp Bushings

A special short shank bushing with spring clamp instead of ferrule. Carton, 100. Standard package, 500.



No. C-2

Shipping weight, standard package, 15 pounds.

No.	C-1	C-2
Per 100	\$7.20	8.50
Inside Diameter.....inches	1 1/2	1 1/2
Outside Diameter.....inches	2 1/8	2 1/8
Length Under Head.....inches	3/8	3/8

## Federal Porcelain Pipe Thread Bushings



No. F-2L

No.	Plain			With Lock Nut		
	F-1	*F-1 1/2	F-2	F-1L	*F-1 1/2L	F-2L
Per 100	\$5.25	6.25	6.25	7.70	9.20	9.20
Diam.						
Hole in.	1 3/8	1 3/8	1 1/2	1 3/8	1 3/8	1 1/2
Carton.	100	50	50	100	50	50
Std. Pkg	500	250	250	500	250	250

\*F-1 1/2 bushings have longer shank.

## O.Z. Type E Conduit End Fittings



Installed at the end of the conduit to provide a means of spacing and individually insulating wires as they emerge from the conduit end. Body made of cadmium plated malleable iron. Cover made of molded canvas bakelite which has a high dielectric and mechanical strength. Holes other than standard can be drilled according to specification. Set-screw type fittings for threadless conduit can be furnished.

No.	Complete with Cover			Cover Only			Conduit Size In.	Diam. In.	Ht. In.	Std. Pkg.
	Blank Each	Hole Each	Hole Each	Blank Each	Hole Each	Hole Each				
E 50	\$ .35	\$ .35	\$ .40	\$ .10	\$ .10	\$ .15	1/2	1 1/4	7/8	5
E 75	.45	.45	.50	.15	.15	.20	3/4	1 1/2	7/8	5
E100	.60	.60	.70	.20	.20	.30	1	1 11/16	1 5/16	5
E125	.80	.80	.95	.30	.30	.45	1 1/4	2	1 5/16	5
E150	1.15	1.15	1.35	.40	.40	.60	1 1/2	2 1/4	1 5/16	5
E200	1.75	1.75	2.00	.50	.50	.75	2	2 15/16	1 11/8	1
E250	3.00	3.00	3.45	.75	.75	1.20	2 1/2	3 1/16	1 1/4	1
E300	4.00	4.00	4.50	1.00	1.00	1.50	3	4	1 1/4	1
E350	5.25	5.25	5.75	1.25	1.25	1.75	3 1/2	4 3/4	1 15/32	1
E400	7.00	7.00	7.50	1.50	1.50	2.00	4	5 3/8	1 1/16	1
E450	9.00	9.00	9.50	2.00	2.00	2.50	4 1/2	5 1/2	1 1/16	1
E500	12.00	12.00	12.50	2.50	2.50	3.00	5	6 3/8	1 19/32	1
E600	15.00	15.00	15.50	3.00	3.00	3.50	6	7 3/8	1 19/32	1

For hot-dip galvanized body, add 20 per cent to price.

Can be supplied for thin wall conduit (E.M.T.) and fiber conduit on request at additional cost.

\*Holes accommodate maximum size cable according to code.

## Federal Porcelain Clamp Bushings



No. A-1



No. B-1



No. K-1

Made of vitrified porcelain in one piece. Clamping rings are made of metal, threaded to fit threads on the porcelain. By reversing the clamp ring bushings can be used on thicker material. Bushings furnished in all colors.

Nos. K-1 and K-2 elbow bushings are of a special shape for outdoor work, preventing water from entering around wire; also prevents damage to wire or insulation by sudden bending at the bushing.

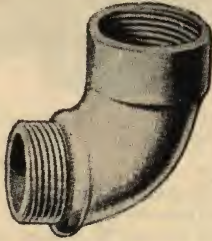
Cat. No.	Per 100	Conduit K.O. Size In.	I.D. In.	O.D. In.	Length Under Head In.	Approx. Max. Size R.C. Wire	Std. Pkg.	Ship. Wt. Lbs.
A-1	\$7.50	1 1/4	1 1/8	1 3/4	1 1/2	No. 10	500	15
A-1 1/2	8.00	1 1/2	1 1/8	1 3/4	1 1/2	No. 10	250	14
†A-1 1/2 LS	9.00	1 1/2	1 1/8	1 3/4	1 1/2	No. 10	250	16
A-2	8.00	1 1/2	1 1/8	1 3/4	1 1/2	No. 8	250	12
A-2 LS	9.00	1 1/2	1 1/8	1 3/4	1 1/2	No. 8	250	14
A-2 1/2	9.00	1 1/2	1 1/8	1 3/4	1 1/2	*No. 4	250	11
A-3	10.00	1 3/4	1 1/8	1 3/4	1 1/2	No. 3	250	22
A-4	14.00	1	1 1/8	1 3/4	1 1/2	No. 00	125	18
A-4L	14.00	1	1 1/8	1 3/4	1 1/2	No. 4/0	125	17
A-5	18.00	1 1/4	1 1/8	1 3/4	1 1/2	450000 C.M.	125	25
A-6	35.00	2	1 1/8	1 3/4	1 1/2	1000000 C.M.	60	24
B-1	14.00	1 1/4	1 1/8	1 3/4	1 1/2	No. 10	250	11

\*For 1/2-inch Neon sign cable. †L.S., Long shank. †Loom.



## T & B Short Elbows

Well bushed, with clean machine-cut threads. Made of malleable iron and plated inside and outside with Tabolite superior galvanizing.



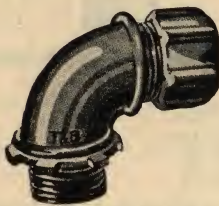
Conduit Size Inches	No.	Per 100	Radius Inches	Offset Inches	Carton	Std. Pkg.	Wt. Lb. per 100
1/2	4250	\$15.00	9/16	11/16	25	50	17
3/4	4251	24.00	11/16	13/16	25	50	26
1	4252	45.00	13/16	15/16	10	25	36
1 1/4	4253	55.00	1 1/16	1 7/32	10	25	90
1 1/2	4254	70.00	1 3/16	1 11/32	10	25	105
2	4255	95.00	1 7/16	1 5/8	5	10	200

## T&B Watertight Short Elbows

90° Box Connectors

For Thinwall Conduit (E.M.T.)

Approved by Underwriters' Laboratories



Conduit Size Inches	No.	Per 100	Radius Inches	Offset Inches	Carton	Std. Pkg.	Wt. Lb. per 100
1/2	4230	\$36.00	9/16	11/16	25	50	21
3/4	4231	38.00	11/16	13/16	25	50	32
1	4232	50.00	13/16	15/16	5	25	52
1 1/4	4233	125.00	1 1/16	1 7/32	2	10	100
1 1/2	4234	175.00	1 3/16	1 11/32	2	10	180
2	4235	250.00	1 7/16	1 5/8	2	10	320

## T&B Bushed Elbows

Approved by Underwriters' Laboratories

Schedule F



Handy fittings for use wherever it is necessary to terminate a conduit run in a sharp turn. Designed with male and female threaded ends with well rounded shoulders which eliminate any possibility of damage to wires.

Made of malleable iron, protected from corrosion with Tabolite galvanizing.

No.	Per 100	Conduit Size In.	Radius In.	Offset In.	Unit Qty.	Std. Pkg.	Wt. Lb. per 100
460	\$32.00	1/2	1 1/8	1 1/8	10	100	28
461	45.00	3/4	1 1/2	1 1/2	10	100	43
462	65.00	1	1 13/16	1 13/16	5	25	82
463	200.00	1 1/4	2 1/4	2 1/4	5	10	130

## Appleton 90-Degree Bushed Elbows

Schedule CF

Cadmium Finish

For Rigid Conduit (Heavy Wall)



Cat. No.	Size Inches	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
7490	1/2	25	100	30
7491	3/4	25	100	50
7492	1	10	25	20
7493	1 1/4	10	20	26
7494	1 1/2	5	10	24
7494-A	2	5	10	38

## Appleton Malleable 90° Elbows

Schedule CF

Cadmium Finish

Short, 90° bushed elbow.



No.	Size in.	7495	7496	7497
Size	1/2	1 1/2	3/4	1
No. in Carton	25	25	25	10
No. in Stand. Pkg.	100	100	100	50
Wt. per Stand. Pkg.	16	26	18	

## Appleton 90-Degree Connector Extension

Schedule CF

Cadmium Finish



No.	Size Inches	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
27495	1/2	25	500	80
27496	3/4	25	300	78
27497	1	20	200	72

## Appleton Conduit Elbows

Schedule CFS

Cadmium Finish

For Rigid Conduit (Heavy-Wall)



45-Degree Female

90-Degree Female

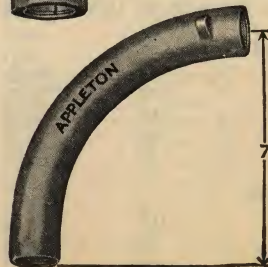
Type EL 45-Degree Female				Type EL 90-Degree Female			
No.	Size Inches	Carton	Std. Pkg.	No.	Size Inches	Carton	Std. Pkg.
8285	1/2	10	200	8295	2	1	5
8286	3/4	10	100	8296	2 1/2	1	5
8287	1	5	50	8297	3	1	5
8288	1 1/4	5	25	8298	3 1/2	1	5
8289	1 1/2	5	10	8299	4	1	5
8270	1/2	10	200	8271	3/4	10	100

## Type EL 90-Degree—No-Thread



No.	Size Inches	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
82N70	1/2	5	100	37
82N71	3/4	5	50	36

## Type ELB 90-Degree Female



No.	Size Inches	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
8192	1	5	50	180



## Appleton 90-Degree Knockout Box Connectors

Schedule CFS

Cadmium Finish

For Rigid Conduit (Heavy-Wall)

### Threaded Type



No.	Size, In. A B	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
7360	1/2x1/2	5	25	8
7361	3/4x1/2	5	10	5
7362	3/4x3/4	5	10	6
7363	1x3/4	5	10	6

### Combination Threaded and No-Thread Type



No.	Threaded Size, In.	No-Thread Size, In.	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
7370	1/2	1/2	5	25	12
7371	1/2	3/4	5	10	5
7372	3/4	3/4	5	10	5
7373	3/4	3/4	5	10	7
7374	3/4	1	5	10	7
7375	1	3/4	5	10	7

### No-Thread Type



No.	Size, In. A B	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
73N61	3/4x1/2	5	10	4
73N63	1x3/4	5	10	6

### Threaded Type



No.	Size Inches	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
7390	1/2	25	50	8 1/2
7391	3/4	25	50	13

### No-Thread Type



No.	Size Inches	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
73N90	1/2	25	50	10
73N91	3/4	25	50	16

## Type PEL Appleton Pulling Elbows

Schedule CFS

Cadmium Finish

For Rigid Conduit (Heavy-Wall)



Threaded



No-Thread

Designed for use in practically any corner, and the cover, which is instantly accessible, makes it possible to pull wires without difficulty. All sizes have exceedingly large wiring space.

### Threaded

No.	Size Inches	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
37450	1/2	10	100	52
37451	3/4	5	50	40
37452	1	5	20	27

### No-Thread

No.	Size Inches	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
374N50	1/2	10	100	62
374N51	3/4	5	50	48
374N52	1	5	20	34

## Type ET Appleton Elbows

Schedule CFS

Cadmium Finish

For Short Radius Bend  
For Rigid Conduit (Heavy-Wall)

With Lugs



Without Lugs

Designed for use in making junctions in the conduit system at concealed or inaccessible points.

Especially suitable for use in connections in service conduit with outdoor meters or with lighting fixtures.

### Threaded

With Lugs		Without Lugs		Size, INCHES			Car- ton	Std. Pkg.
No.	Wt. Lb. Std. Pkg.	No.	Wt. Lb. Std. Pkg.	3/4	1/2	1/2*		
8630	..	8690	84	3/4	3/4	3/4	5	100
8631	..	8691	104	3/4	3/4	3/4	5	100
8632	33	8692	65	1	3/4	3/4*	5	50
8633	..	8693	...	1	-1	-1	5	50
8634	..	8694	46	1 1/4	-1	-1	5	25

Designed for use in making junctions in the conduit system at concealed or inaccessible points.

### No-Thread Without Lugs



Main hubs are No-Thread and large branch hub is threaded.

No.	Size, INCHES	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
86N90	3/4-1/2-1/2*	5	100	95
86N91	3/4-3/4-3/4	5	100	100
86N92	1-3/4-3/4	5	50	72

\*Size of larger hub is given first, and is shown at bottom in illustration.

## No. 18860 Appleton Meter Connectors

Schedule CFS

Cadmium Finish



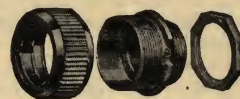
No.	Size Inches	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
18860	1 1/4	5	25	13

## Appleton Reducing Connectors

Schedule CFS

Cadmium Finish

For Knockout or Panel Box Connections—No-Thread Type



No.	Size, INCHES A B	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
73N80	1/2x 3/4	10	50	10
73N81	1/2x1	10	50	16
73N82	3/4x1	10	50	17
73N83	1/2x1 1/4	5	25	12
73N84	3/4x1 1/4	5	25	13
73N85	1x1 1/4	5	25	19



## T&B Male Conduit Enlargers

Approved by Underwriters' Laboratories



For securing conduit in an outlet of the next larger size. Bushed so that the rough ends of conduit are protected.

Size Inches	No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. per 100
1/2-3/4	1245	\$20.00	25	100	10
3/4-1	1246	30.00	25	50	20
1-1 1/4	1244	40.00	5	50	32
1 1/4-1 1/2	1247	50.00	5	25	45

## Appleton Male Enlarger Conduit Fittings

Schedule CF

Cadmium Finish



When screwed into the hub of any conduit fitting having 1/2, 3/4, or 1-inch female hubs respectively, will enlarge the hub to the next size, namely, 3/4, 1, and 1 1/4 inches according to the number selected.

No.	Size Inches	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
9407	3/4 F.x 1/2 M.	50	500	70
9408	1 F.x 3/4 M.	50	500	80
9409	1 1/4 F.x 1 M.	20	200	40

## T&B Female Conduit Reducers

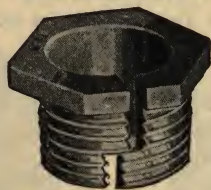
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Designed to adapt an outlet to the next smaller size of conduit.



Size Inches	No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. per 100
3/4-1/2	1250	\$10.00	50	100	8
1-3/4	1251	20.00	25	50	12
1 1/4-1	1252	35.00	25	50	22
1 1/2-1 1/4	1253	50.00	25	50	29
2-1 1/2	1254	65.00	10	25	53
2 1/2-2	1255	100.00	10	25	90
3-2 1/2	1256	135.00	10	25	170
3 1/2-3	1257	200.00	5	10	175
4-3 1/2	1258	275.00	5	10	290
4 1/2-4	1259	500.00	2	5	355
5-4 1/2	1260	750.00	2	5	430

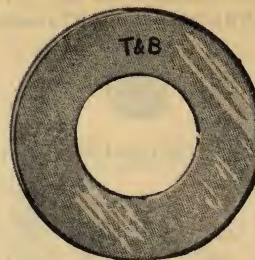
## T & B Threaded Split Steel Adapters Threaded Tubelets to Thinwall Conduit



No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
1038	\$4.00	3/8	50	200	1 1/2
1050	4.00	1/2	50	200	2 1/2
1075	6.00	3/4	25	100	5
1090	10.00	1	25	50	6
1125	20.00	1 1/4	5	20	10
1150	25.00	1 1/2	2	10	15
1151	35.00	2	2	5	20

## T&B Reducing Washers

Drilled Pennies



Designed to reduce the size of knockouts in outlet boxes. Made of steel and galvanized.

Size, Inches K.O. Conduit	No.	Per 100	Std. Pkg.	Car-ton	Wt., Lb. per 1000
3/4 to 3/8	3700	\$2.50	500	250	10
3/4 to 1/2	3701	2.50	500	250	10
1 to 3/8	3702	4.00	250	125	15
1 to 1/2	3703	4.00	250	125	13
1 to 3/4	3704	4.00	250	125	25
1 1/4 to 3/8	3705	5.00	250	125	20
1 1/4 to 1/2	3706	5.00	250	125	18
1 1/4 to 3/4	3707	5.00	250	125	13
1 1/4 to 1	3708	5.00	250	125	30
1 1/2 to 3/8	3709	5.50	100	50	28
1 1/2 to 1/2	3710	5.50	100	50	25
1 1/2 to 3/4	3711	5.50	100	50	23
1 1/2 to 1	3712	5.50	100	50	40
1 1/2 to 1 1/4	3713	5.50	100	50	38
2 to 1/2	3714	7.00	100	50	35
2 to 3/4	3715	7.00	100	50	72
2 to 1	3716	7.00	100	50	68
2 to 1 1/4	3717	7.00	100	50	63
2 to 1 1/2	3718	7.00	100	50	56
2 1/2 to 1/2	3719	9.00	100	25	120
2 1/2 to 3/4	3720	9.00	100	25	120
2 1/2 to 1	3721	9.00	100	25	110
2 1/2 to 1 1/4	3722	9.00	100	25	100
2 1/2 to 1 1/2	3723	9.00	100	25	90
2 1/2 to 2	3724	9.00	100	25	80
3 to 1/2	3725	11.00	100	25	150
3 to 3/4	3726	11.00	100	25	140
3 to 1	3727	11.00	100	25	140
3 to 1 1/4	3728	11.00	100	25	140
3 to 1 1/2	3729	11.00	100	25	130
3 to 2	3730	11.00	100	25	110
3 to 2 1/2	3731	11.00	100	25	90

## Appleton Cupped Reducing Washers

Schedule CF

Cadmium Finish



For reducing the knockouts in outlet boxes, cabinets, etc. Galvanized finish.

No.	Size Inches	Car-ton	Std. Pkg.	Wt. Lbs. per 100
7336	3/4 to 1/2	250	500	2
7337	1 to 3/4	125	250	3
7338	1 to 1/2	125	250	4
7339	1 1/4 to 1	125	250	5
7340	1 1/4 to 3/4	125	250	6
7341	1 1/4 to 1/2	125	250	7
7342	1 1/2 to 1 1/4	50	100	7
7343	1 1/2 to 1	50	100	8
7344	1 1/2 to 3/4	50	100	9
7345	1 1/2 to 1/2	50	100	10
7346	2 to 1 1/2	50	100	5
7347	2 to 1 1/4	50	100	6
7348	2 to 1	50	100	7
7349	2 to 3/4	50	100	8
7350	2 to 1/2	50	100	9



## Appleton Reducers

Schedule CF

## Cadmium Finish—Threaded



Use to reduce conduit fittings from larger to smaller sizes as shown.

No.	Size In.	Car-ton	Std. Pkg.	Wt., Lb. per 100	No.	Size In.	Car-ton	Std. Pkg.	Wt., Lb. per 100
8200	1½ - ¾	50	100	4	8229	3½ - 1	5	10	170
8201	¾ - ½	50	100	5	8230	4 - 1	5	10	220
8202	1 - ½	25	50	12	8234	1½ - 1¼	25	50	15
8203	1¼ - 1½	25	50	33	8235	2 - 1¼	10	25	50
8204	1½ - 1½	25	50	40	8236	2½ - 1¼	10	25	90
8205	2 - 1½	10	25	65	8237	3 - 1¼	10	25	145
8206	2½ - 1½	10	25	87	8238	3½ - 1¼	5	10	210
8207	3 - 1½	10	25	115	8239	4 - 1¼	5	10	230
8208	3½ - 1½	5	10	175	8243	2 - 1½	10	25	38
8209	4 - 1½	5	10	250	8244	2½ - 1½	10	25	87
8213	1 - ¾	25	50	9	8245	3 - 1½	10	25	125
8214	1¼ - ¾	25	50	24	8246	3½ - 1½	5	10	215
8215	1½ - ¾	25	50	36	8247	4 - 1½	5	10	255
8216	2 - ¾	10	25	70	8251	2½ - 2	10	25	53
8217	2½ - ¾	10	25	84	8252	3 - 2	10	25	130
8218	3 - ¾	10	25	120	8253	3½ - 2	5	10	280
8219	3½ - ¾	5	10	170	8254	4 - 2	5	10	320
8220	4 - ¾	5	10	250	8258	3 - 2½	10	25	100
8224	1¼ - 1	25	50	14	8259	3½ - 2½	5	10	200
8225	1½ - 1	25	50	29	8260	4 - 2½	5	10	263
8226	2 - 1	10	25	52	8264	3½ - 3	5	10	93
8227	2½ - 1	10	25	102	8265	4 - 3	5	10	250
8228	3 - 1	10	25	115	8269	4 - 3½	5	10	200

## T&amp;B Insuliner Sleeves

Approved by Underwriters' Laboratories

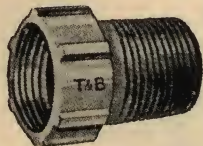
Insulates and lines bushing and conduit. Can be used with any outlet for wires such as bushings, tubelets, connectors, or chase nipples. Prevents cable insulation abrasion and shorts. Overlapping ends automatically adjust for normal variations in conduit diameters.



No.	Per 100	Conduit Size, In.	Unit Pkg.	Std. Pkg.	Wt., Lb. per 100
422	\$15.00	1½	25	50	3
423	17.00	¾	25	50	6
424	20.00	1	25	50	7
425	25.00	1¼	20	40	13
426	27.00	1½	20	40	14
427	30.00	2	15	30	20
428	50.00	2½	15	30	35
429	80.00	3	5	25	50
430	100.00	3½	5	25	75
431	200.00	4	5	20	90
432	300.00	4½	5	15	110
433	400.00	5	2	10	140
434	500.00	6	1	5	200

## T&amp;B Fixture Extensions

Approved by Underwriters' Laboratories



Made of malleable iron with high ribs for a good finger grip. Clean-cut threads for easy installation.

No.	Per 100	Size Inches	Unit Quan.	Std. Pkg.	Weight Pounds per 1000
1590	\$4.00	¾x1	100 or 500	1000	70
1591	4.00	¾x1 ⅜	100 or 500	1000	85
1592	4.00	¾x1 ½	100 or 500	1000	65

## Appleton Combination Extension Pieces

Schedule CF

## Cadmium Finish



Made with internal threads in addition to the standard male thread, so that they may also be used for bracket outlets.

No.	Size and Description	Car-ton	*Std. Pkg.	Wt. Lb. per 1000
18835	¾-In. F. x ¾-In. M., and ½-In. F.—1-In. Long.....	100	1000	52
18836	¾-In. F. x ¾-In. M., and ½-In. and F.—1-In. Long.....	100	1000	50

\*Extensions may be assorted to make up standard package.

## Appleton Fixture Extension Pieces

Schedule CF

Cadmium Finish  
¾-Inch Male by ¾-Inch Female

No.....	18830	18831
Length.....inches	1	1 ⅜
Carton.....	100	100
Standard Package.....	1000	1000
Weight per Standard Package.lbs.	52	70

## Appleton E-Z-On Fixture Stems

Schedule CF

## Cadmium Finish



Size, ¾ inch.  
Standard package, 1000. Carton, 100.  
Weight per standard package, 60 pounds.

No. 8059 is the solid type. No. 8060 is the open type.

## Appleton Boltless Fixture Stems

Schedule CF

## Cadmium Finish



Requires no bolts.  
Standard carton, 100. Standard package, 1000.

No.	Solid		Open		8070
	8055	8057	8056	8058	
Size.....	¾	1½	¾	1½	¾M, 1½F
Wt. per Std. Pkg.....	72	80	72	80	80

## Appleton Hickey Fixture Stems

Schedule CF

## Cadmium Finish

## Open Type—Without Bolts



Malleable



Steel

Furnished with galvanized finish only. Cannot be assorted to make up a standard package.

Malleable				Steel			
No.	Size In.	Car-ton	Std. Pkg.	No.	Size In.	Car-ton	Std. Pkg.
8050	¾	100	1000	8090	¾	100	1000
8052	1½	100	500	8091	¾M, 1½F	100	1000



**T&B Hickey Fixture Studs**

Approved by Underwriters' Laboratories



Made of malleable iron, and furnished in Tabolite—the superior galvanized finish. All four prongs have extra long slots to allow adjustment. With this stud no hickeyes are required on straight electrical work.

Size Stud Inches	No.	Per 100	Std. Pkg.	Wt., Lb. per 100
3/8	16	\$5.00	1000	8
1/2	17	6.50	1000	13
Stove Bolts & Nuts		.50	1000	1

**T&B Slip-In Fixture Studs**

Approved by Underwriters' Laboratories



Can be installed from interior of box without removal of parts. Occupies minimum space in box, thus allowing more room for wires.

No small nuts and bolts to lose or fuss with.

To install this stud, back off locknut a few turns, slip base of stud into knockout from inside of box, allow prongs to drop into fixture stud holes and tighten down the locknut.

No.	Type	Per 100	Size In.	Unit Quan.	Std. Wt., Lb. Pkg. per 100
1601	Hollow Steam.....	\$5.00	3/8	100	500 7
1600	Solid Stem for Concrete Work..	5.00	3/8	100	500 8
1602	3/8-In. Male by 1/8-In. Female	5.00	..	100	500 8

**Appleton Swivel Conduit Fixture Hangers**

Schedule CFS

Cadmium Finish

Allows fixture to swing 15 degrees from perpendicular.

**Ball Without Cushion Type**

No.	Size, In. Fixture Stem	Male Hub	Fixture Wt., Lb.	Car- ton	Std. Pkg.	Wt. Lb.
7160	3/8	1/2	.....	10	50	33
7161	1/2	1/2	.....	10	50	34
7162	3/4	1/2	.....	10	50	35
7163	3/4	3/4	.....	10	50	36

**Ball With Cushion Type**

No.	Size, In. Fixture Stem	Male Hub	Fixture Wt., Lb.	Car- ton	Std. Pkg.	Wt. Lb.
7165	3/8	1/2	3 to 6	10	50	40
7166	1/2	1/2	3 to 6	10	50	41
7167	3/4	1/2	3 to 6	10	50	42
7168	3/4	3/4	3 to 6	10	50	43
7170	3/8	1/2	6 to 12	10	50	40
7171	1/2	1/2	6 to 12	10	50	41
7172	3/4	1/2	6 to 12	10	50	42
7173	3/4	3/4	6 to 12	10	50	43
7185	3/8	1/2	12 to 24	10	50	41
7186	1/2	1/2	12 to 24	10	50	42
7187	3/4	1/2	12 to 24	10	50	43
7188	3/4	3/4	12 to 24	10	50	44

**Combination Hickey and Swivel Joint Type**

In addition to the swivel fixture joint feature, it also has the added feature of being a hickey and eliminates the use of the ordinary hickey.



No.	Size In.	Car- ton	Std. Pkg.	Wt. Lb.
7220	3/8-3/8	25	50	14
7221	3/8-1/2	25	50	14

**T & B Entrance Caps**

For Use with Service Entrance Cable

Approved by Underwriters' Laboratories.



No. 5550

No.	Description	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100	Per 100
5549	For Service Entrance Cable from 2W12 through 2W6.....	5	50	15	\$40.00
5550	For Service Entrance Cable from 2 or 3W12 through 2 or 3W8...	5	50	20	50.00
5551	For Service Entrance Cable from 2 or 3W6 through 2 or 3W4 and 2W2.....	5	50	25	62.50
5535	3-Hole Insulator.....	2	5	125	100.00
5536	3-Hole Insulator.....	2	5	175	125.00
5537	5-Hole Insulator.....	5	50	65	115.00

**T&B Straight Insulets**

Approved by Underwriters' Laboratories



For use at motor outlets or at the end of any conduit run where wires emerge. Insulator has 3 wire holes with one hole plugged.

Can also be used with T&B chase nipples where wires emerge from an outlet box knockout. For all conduit sizes, from 1/2 to 1 1/4 in.

No.	Per 100	Size In.	Unit Quan.	Std. Pkg.	Wt. Lb.
1610	\$20.00	1/2	25	100	15
1611	30.00	3/4	25	100	19
1612	40.00	1	5	50	38
1613	50.00	1 1/4	5	25	110

**No. 1660 T&B Round Type Insulets**

Plated with Tabolite. Has 3 wire holes with one hole plugged.

Where it is desirable to bring 2 or 3 wires out of 1/2, 3/4 or 1-inch knockout use the insulet and T&B chase nipple.

No.	Per 100	Size In.	Unit Quan.	Std. Pkg.	Wt. Lb.
1660	\$20.00	1/2	25	100	11

**T&B Angle Insulets**

Approved by Underwriters' Laboratories



Can be used as a service entrance on horizontal conduit, or as an inside installation.

Insulator has 3 wire holes, with one hole plugged.

No.	Per 100	Size In.	Unit Quan.	Std. Pkg.	Wt. Lb.
1640	\$30.00	1/2	5	50	44
1641	45.00	3/4	5	50	52
1642	60.00	1	6	30	108
1643	75.00	1 1/4	5	25	143

**No. 1665 T&B Insulets For Armored Cables**

Approved by Underwriters' Laboratories

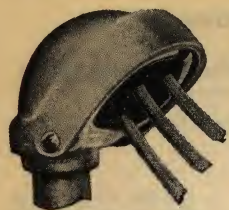


Has a Tite-Bite grip made to hold all 3/8-inch sizes of armored cable, as well as non-metallic cable.

Has 3 wire holes with one hole plugged.

No.	Per 100	Size In.	Unit Quan.	Std. Pkg.	Wt. Lb.
1665	\$20.00	3/8	25	100	18





### T&B Entrance Caps

Approved by  
Underwriters' Laboratories

May be used in both vertical and horizontal positions with entrance hole always 45° from the weather.

Insulator is of heavy composition, molded to set in the frame. Cap is hot galvanized; frame Tabolited.

No.	Per 100	Holes in Insulator				Std. Pkg.	Wt. Lb.	No.	Per 100	Holes in Insulator				Std. Pkg.	Wt. Lb.
		Size In.	Insu- Unit	Quan.						Size In.	Insu- Unit	Quan.			
1525	\$50.00	1/2	4	10	50	76	1531	\$900.00	2 1/2	4	1	1	1500		
1521	65.00	3/4	5	5	50	108	1532	1100.00	3	6	1	1	2600		
1522	80.00	1	5	5	25	164	1533	1900.00	3 1/2	6	1	1	2600		
1523	200.00	1 1/4	5	1	10	220	1534	2400.00	4	6	1	1	2600		
1524	200.00	1 1/4	7	1	10	220	1553	3000.00	4 1/2	6	1	1	3000		
1529	225.00	1 1/2	4	1	5	300	1554	3400.00	5	6	1	1	3000		
1530	400.00	2	4	1	5	800	1555	3900.00	6	6	1	1	3000		

### T&B Entrance Caps

For Thinwall Conduit



Cap is held in place by two screws which are burred to prevent falling out.

Frame is bushed to protect the conductor.

Top of frame, which holds the insulator, is split permitting conductors to slip in without threading.

Connection to tubing is watertight.

Hot galvanized finish.

Size Inches	No.	Per 100	No. Holes in Insulator	Carton	Std. Pkg.	Wt. Lb. per 100
1/2	5525	\$50.00	4	10	50	80
3/4	5526	70.00	4	5	50	112
1	5527	90.00	4	5	25	168
1 1/4	5528	210.00	4	1	10	260

For Use with Service Entrance or Drop Cable

Cable passes through the large, one-hole insulator and is then protected by E.M.T. to the meter box or switch.

Size Inches	No.	Per 100	Insulator Open.	1-In. Diameter	5	50	112
3/4	5526KC	\$70.00	Insulator Open.	1-In. Diameter	5	50	112
1	5527KC	90.00	Insulator Open.	1 1/4-In. Diameter	5	25	168

### T&B Entrance Ells

Approved by Underwriters' Laboratories



Designed for a straight pull in either direction. Mounts flush on the wall, eliminating any need for bending conduit.

No sharp edges. Carefully bushed to protect the cable. Cover held in place with one screw which does not come out. A turn of the screw, and the cover slips out. Made of heavy cast iron and plated with Tabolite—the superior galvanized finish.

Conduit Size Inches	Regular No.	Locked No.	Drip No.	Per 100	Carton	Std. Pkg.	Wt. Lb. per 100
1/2	1490	1990	2090	\$40.00	5	50	80
3/4	1491	1991	2091	45.00	5	50	90
1	1492	1992	2092	65.00	5	25	150
1 1/4	1493	1993	2093	115.00	5	10	180
1 1/2	1494	1994	2094	140.00	1	5	443
2	1495	1995	2095	290.00	1	1	731
2 1/2	1496	1996	2096	675.00	1	1	900
3	1497	1997	2097	850.00	1	1	1225

### T&B Entrance Ells

For Electrical Metallic Tubing

Approved by Underwriters' Laboratories



Conduit Size Inches	No.	Per 100	Carton	Std. Pkg.	Weight Pounds per 100
1/2	5490	\$54.00	5	50	61
3/4	5491	62.00	5	20	92
1	5492	101.00	5	10	114
1 1/4	5493	245.00	1	10	255
1 1/2	5494	330.00	1	5	310
2	5495	530.00	1	5	500

### Appleton Aluminum Entrance Fittings

Schedule OF



Nos. 15200 and 15201



No. 15205



No. 15206

For use with oval and round bare neutral concentric service entrance cable and also round armored service entrance cable.

No.	DIAMETER Minimum	OPENING, IN. Maximum	Underwriters Type of Cable	Carton	Std. Pkg.
15200	5/16 x 5/8	2 1/2 x 1 3/16	SE	5	50
15201	15/32 x 1 1/16	2 3/8 x 1 1/32	and SD	5	50
15205	19/32	7/8	ASE	5	50
15206	19/32	1 3/32		1	5
*15260	.....	.....	.....	1	5

### Size of Cable

No. 15200		No. 15201		No. 15205		No. 15206	
Insulated Cond.	Bare Neutral	Insulated Cond.	Bare Neutral	Insulated Cond.	Bare Neutral	Insulated Cond.	Bare Neutral
1-12	1-12	2-8	1-10	2-6	1-8	2-12	1-12
2-12	1-12	2-8	1-8	2-6	1-6	2-10	1-12
1-10	1-10	1-6	1-8	2-4	1-6	2-10	1-10
2-10	1-12	1-6	1-6	2-4	1-4	2-8	1-8
2-10	1-10	1-4	1-6	1-2	1-2	.....	2-2
1-8	1-8	1-4	1-4	.....	.....	.....	.....

\*For Nos. 10, 8, or 6, 5-conductor, 4 insulated and 1 bare entrance cable.

### Appleton Entrance Fitting Composition Covers

Schedule OF

For Oval and Round Service Entrance Cable



No.	For Fittings Nos.	Style	Carton	Std. Pkg.	Wt. Lb. per 100
15500	15200, 25200	2-Hole	10	50	.....
15501	15201, 25201	2-Hole	10	50	.....
15502	15205, 25205	3-Hole	10	50	.....
15503	15206, 25206	3-Hole	5	5	.....

### Type FEL Appleton Special Entrance Ell

Schedule EF

Threaded—Cadmium Finish



No.	Size Inches	Carton	Std. Pkg.	Wt. Lb. per 100
37490	1/2	25	100	28
37491	3/4	25	100	43
37492	1	10	25	84
37493	1 1/4	10	10	180



## Type FEB Appleton Entrance Fittings

Schedule EF

Threaded—Cadmium Finish  
With 3-Wire Porcelain Covers  
For Rigid Conduit (Heavy-Wall)



Can be furnished with four, five, six, seven or eight-wire covers when specified on order.

For example, Type FEB for 2½-inch conduit with 4-wire cover.

No.	Size Inches	Carton	Standard Package	Wt. Lb. Std. Pkg.
1973	2½	1	1	22
1974	3	1	1	22
1975	3½	1	1	57
1976	4	1	1	57
1978	5	1	1	62
1979	6	1	1	78

## Type AY Appleton Angle Fittings

Schedule EF

With 2 Threaded Female Hubs—Cadmium  
Finish For Rigid Conduit (Heavy Wall)



No.	Size In.	Carton	Std. Pkg.	Wt. Lb. per 100
1950	1½	10	50	84
1951	¾	5	50	100
1952	1	5	25	108
1953	1¼	5	10	135
1954	1½	5	5	340

## Type AYM Appleton Entrance Fittings

Schedule EF

Cadmium Finish

With Male and Female Threaded Hubs



Designed especially for use with poles used for floodlights and for signs used around gasoline filling stations, etc.

No.	Size Inches	Carton	Std. Pkg.	Wt. Lb. per 100
11950	1½x1½	10	50	84
11951	¾x¾	5	50	100
11952	1x1	5	25	108

## T&amp;B Capped Elbows

Approved by Underwriters' Laboratories



Eliminates the fishing of wires through a sharp bend.

Smooth on the interior, all openings bushed to prevent abrasion.

Made of cast iron, plated with Tabolite to resist corrosion.

No.	Per 100	Size In.	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
1480	\$60.00	1½	10	50	50
1481	70.00	¾	5	50	64
1482	90.00	1	5	25	132
1483	250.00	1¼	5	10	250
1484	300.00	1½	2	5	320

## Appleton Entrance Fittings

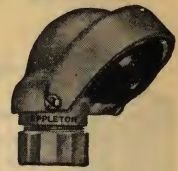
Schedule EF

Cadmium Finish  
For Rigid Conduit  
(Heavy Wall)

Threaded and No-Thread  
Type FEBS



Threaded



No-Thread

The ½-inch size has combination 2, 3 and 4-wire bakelite cover; 2 holes plugged. The ¾ to 1¼-inch sizes have combination 2, 3, 4 and 5-wire bakelite covers; 2 holes plugged. The 1¼-inch size (FN125S) (FN125S) has combination 4, 5, 6 and 7-wire composition cover; 3 holes plugged. The 1½ and 2-inch sizes have combination 2, 3, 4, 5 and 6-wire bakelite covers; 4 holes plugged.

Threaded No.	No-Thread No.	Size In.	Insulator	Holes in Size	Carton	Std. Pkg.	Wt. Lb. per 100
F-50	FN-50	1½	4	4-5/16"	10	100	55
F-75	FN-75	¾	5	3-13/32", 2-3/8"	10	100	63
F-100	FN-100	1	5	3-1/2", 2-13/32"	5	25	105
F-125	FN-125	1¼	5	3-5/8", 2-13/32"	5	10	145
F-125S	FN-125S	1¼	7	5-11/16", 2-9/16"	5	10	145
F-150	FN-150	1½	6	3-25/32", 2-9/16"	1	5	260
F-200	FN-200	2	6	3-1", 2-3/4", 1-17/32"	1	5	520



Reversible

Threaded

With combination 2, 3, 4, 5 and 6-wire composition covers.

Reversible type for outside conduit installation. Can be used either vertically or horizontally on conduit.

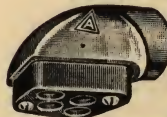
No.	Size In.	K. O., in Covers	No. and Size K. O. In.	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
1932	2½	6	3-13/32", 3-11/8"	1	1	11½
1933	3	6	3-13/4", 3-11/8"	1	1	12½
1934	3½	6	3-13/4", 3-11/8"	1	1	13¼
1935	4	6	3-13/4", 3-11/8"	1	1	13½

## Type FB Appleton Entrance Fittings

Schedule EF

Threaded—Cadmium Finish  
For Rigid Conduit (Heavy-Wall)

With combination 2, 3 and 4-wire composition covers.



No.	Size In.	Carton	Std. Pkg.	Wt. Lb. per 100
1713	1½	10	100	48
1714	¾	10	100	56
1716	1	5	50	45

## Type FC Appleton Entrance Fittings

Schedule EF

Threaded—Cadmium Finish  
For Rigid Conduit (Heavy-Wall)

With combination 2, 3, and 4-wire composition covers.



No.	Size In.	Carton	Std. Pkg.	Wt. Lb. per 100
1723	1½	20	200	17
1733	¾	20	200	17
1743	1	10	100	44

## Type FCE Appleton Cable End Entrance Fittings

Schedule EF

Threaded—Cadmium Finish

For Armored or Non-Metallic Sheathed Cable  
With 3-hole composition cover.



No.	Size In.	Carton	Std. Pkg.	Wt., Lb. per 100
1755	¾	25	200	14

## Type FCC Appleton Conduit End Entrance Fittings

Schedule EF

Threaded—Cadmium Finish  
For Rigid Conduit (Heavy-Wall)

With 3-hole composition cover.



No.	Size In.	Carton	Std. Pkg.	Wt. Lb. per 100
1756	1½	25	200	10



## Type SLAY Appleton Entrance Fittings

Schedule EF

## Cadmium Finish

Threaded or No-Thread  
With Gasket

For Rigid Conduit (Heavy Wall)

For service entrance and outside conduit installations. May be installed close to buildings.

Sealing screws furnished at no extra cost if specified on order.



Threaded



No-Thread

Size In.	Threaded			No-Thread		
	No.	Car- ton	Std. Pkg.	No.	Car- ton	Std. Pkg.
1/2	31790	10	100	317N90	10	100
3/4	31791	10	100	317N91	10	50
1	31792	5	50	317N92	5	25
1 1/4	31793	5	25	317N93	5	10

## Type SLAY Appleton Entrance Fittings

Schedule EF

## Cadmium Finish

Threaded—For Driven Grounds  
With Gasket

For Rigid Conduit (Heavy Wall)

Designed especially for services that are grounded outside of building. Hub in bottom of fitting is for 3/4-inch conduit, which should extend far enough to protect ground wire.

No.	Size In.	Car- ton	Std. Pkg.	Wt. Lb.
41791	3/4 x 3/4 x 3/4	10	50	105
41792	1 x 1 x 3/4	10	50	151
41793	1 1/4 x 1 1/4 x 3/4	5	25	210

Sealing screws furnished at no extra cost if specified on order.

Type LAY Appleton Entrance  
Fittings

Schedule EF

## Threaded—Cadmium Finish

For Rigid Conduit (Heavy-Wall)

Weatherproof gasket not required. Cover held in place by flange and securely fastened by means of screw.

## Threaded

For service entrance and outside conduit installations. May be installed close to buildings.

No.	Size Inches	Carton	Standard Package	Wt. Lb. per 100
1790	1/2	10	100	90
1791	3/4	10	100	94
1792	1	5	50	156
1793	1 1/4	5	50	330
1794	1 1/2	5	50	400
1795	2	5	25	500

## No-Thread

For service entrance and outside conduit installations. May be installed close to buildings.

No.	Size Inches	Carton	Std.	Wt. Lb. per 100
17N90	1/2	10	50	100
17N91	3/4	10	50	124
17N92	1	5	25	170
17N93	1 1/4	5	10	380
17N94	1 1/2	5	10	500
17N95	2	5	5	700

## Threaded

For Driven Grounds

Made especially for services that are grounded outside of building. The hub in bottom of fitting is for 1/2-inch conduit which should extend far enough to protect ground wire.

11791	3/4 x 3/4 x 1/2	10	50	100
11792	1 x 1 x 1/2	10	50	151
11793	1 1/4 x 1 1/4 x 1/2	5	20	210

Threaded  
For Driven  
Grounds

## Appleton Conduit Fittings

Schedule TW

## Cadmium Finish

For Electrical Metallic Tubing (Thin-Wall Conduit)

## Type FEBS

Size, 1/2-inch with combination 2, 3, and 4-wire Bakelite cover; 2 holes plugged. Sizes 3/4 to 1 1/4-inch with combination 2, 3, 4 and 5-wire Bakelite covers; 2 holes plugged. Size, 1 1/4-inch (FT125S) with combination 4, 5, 6, and 7-wire composition cover; 3 holes plugged. Sizes 1 1/2 and 2-inch with combination 2, 3, 4, 5, and 6-wire Bakelite covers; 4 holes plugged.



No.	Size Inches	No. of Holes and Size, In.	Insu- lator	Car- ton	Std. Pkg.	Wt. Lb. Per 100
FT-50	1/4	4—5/16	4	10	100	55
FT-75	3/4	3—13/32, 2—3/8	5	10	100	63
FT-100	1	3—1/2, 2—13/32	5	5	50	105
FT-125	1 1/4	3—5/8, 2—13/32	5	5	50	145
FT-125S	1 1/4	5—11/16, 2—9/16	7	5	50	21
FT-150	1 1/2	3—25/32, 2—9/16				
		1—3/8	6	1	25	260
FT-200	2	3—1, 2—3/4				
		1—17/32	6	1	20	520



## Type SLAY

Approved Raintight

With flanged cover and gasket. Supplied with sealing screws when specified.

No.	Size Inches	Car- ton	Std. Pkg.	Wt. Lb. per 100
317T90	1/2	10	100	76
317T91	3/4	10	100	210
317T92	1	5	50	350
317T93	1 1/4	5	50	300

Combination No-Thread  
Couplings

For connecting flexible metallic conduit or armored bushed cable to electrical metallic tubing.



No.	Size Inches	Designed to Hold	Max. Diam. Hole, In.	Car- ton	Std. Pkg.	Wt. Lb. Per 100
18854	1/2	3/8-In. BX	...	50	200	18
18855	1/2	*1/2-In. Flex.	15/16	50	200	20
18856	3/4	†3/4-In. Flex.	1 1/8	50	200	28

\*Also 10W3L, 8W2L, 6W2 and 6W2L armored cable.

†Also 6W3, 6W3L, 4W2, 4W2L, 4W3, and 4W3L armored cable.

## 90-Degree Short Elbow



No.	Size Inches	Car- ton	Std. Pkg.	Wt. Lb. per 100
73T90	1/2	100	300	22
73T91	3/4	50	300	32
73T92	1	25	100	52



## Type FEL Special Entrance Ell

No.	Size Inches	Car- ton	Std. Pkg.	Wt. Lb. per 100
37T90	1/2	50	200	30
37T91	3/4	25	200	52
37T92	1	25	100	96
37T93	1 1/4	25	100	136



## Service Entrance Conduit Fittings

Schedule CM

For Threaded Heavy Wall Conduit

## \*Type F Caps

Form 8



Furnished with composition cover with knockouts to accommodate 2 to 6 wires.

Size In.	No.
1/2	F184
3/4	F284
1	F384
1 1/4	F484
1 1/2	F584
2	F684

Form 6



Furnished with composition cover for 2 or 3-wire service. Four-wire covers can be furnished at the same price.

Size In.	No.
2 1/2	F763
3	F863
3 1/2	F963
4	F1063
4 1/2	FO1163
5	FO1263
6	FO1463

## Type FEE Caps



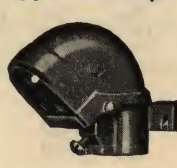
Caps for 3-conductor oval or 2-conductor round bare neutral service entrance concentric cable.

Made of cast aluminum.

No.	†MAX. DIMENSIONS OF CABLE, IN.	
	Oval	Round
FEE8	.625x .750	.625
FEE4	.750x .940	.750
FEE2	.844x1.281	.844

No.	Size of Cable No.
FED284	8
FED384	6 or 4

## Type FED Caps



## Elbows and Tees

Form 6

## Type LB



Furnished with blank cast Feraloy cover and break neck locking screw.

Size In.	No.
1/2	LB16
3/4	LB26
1	LB36
1 1/4	LB46
1 1/2	LB56
2	LB666
2 1/2	LB76

## Type LBC



For driven grounds. Furnished with blank cast Feraloy cover and break neck locking screw. Hubs in illustration are 1/2-inch.

Size In.	No.
3/4	LBC216
1	LBC316
1 1/4	LBC416

\*For any wiring arrangement differing from those listed, information will be furnished upon request.

†Over insulation.

## Service Entrance Conduit Fittings

Schedule CM

For Threaded Heavy Wall Conduit

## Type FBM



Size In.	Without Sealing Compound No.	With Sealing Compound No.	Conduit
1/2	FBM145	FBM146	Threaded Thick Wall
1/2	FBM145-MT	FBM146-MT	Threadless Thin Wall

## Type FBA End Fittings

Furnished with composition cover for 2, 3, or 4-wire service.

No.	FBA1	FBA2	FBA3	FBA4
Size...inches	1/2	3/4	1	1 1/4

## Type FBB End Fittings

Furnished with composition cover for 2, 3, or 4-wire service.

No.	FBB1	FBB2	FBB3	FBB4
Size...inches	1/2	3/4	1	1 1/4

## Type LBY Elbows

Furnished with cast screw cover.

No.	LBY1	LBY2	LBY3	LBY4	LBY5
Size in.	1/2	3/4	1	1 1/4	1 1/2

## Type CGY Service Entrance Connectors

Schedule CM

## 2-Screw Compression Clamp Type



This connector meets the requirements of watertightness and resistance to corrosion, the two most important requirements of a service entrance cable connector.

Screws are reversible which means they may be threaded in from either direction, making heads accessible under all conditions of installation.

Non-ferrous metal, corrosion-resistant alloy, and chromium-plated steel clamping screws.

Round Cable  
TYPES SE AND SD CABLE  
WITH ARMORED OR  
UNARMORED BARE NEUTRAL  
CONDUCTORS—

No.	Each	No.	Insulated	Uninsulated	Size Thrd. Nipple In.	No. of Cap
CGY2292	....	1	10	10	3/4	FEE8
CGY3292	....	1	10	10	1	FEE8
CGY2282	....	1	8	8	3/4	FEE8
CGY3412	....	1	8	8	1	FEE8
CGY2282	....	1	6	8	3/4	FEE8
CGY3412	....	1	6	8	1	FEE8
CGY2272	....	1	6	6	3/4	FEE8
CGY3422	....	1	6	6	1	FEE8
CGY2242	....	1	4	6	3/4	FEE4
CGY2242	....	1	4	4	3/4	FEE4

## Oval Cable

No.	Each	No.	12 or 10	12 or 10	Size Thrd. Nipple In.	No. of Cap
CGY2412	....	2	8	10 or 8	3/4	FEE8
CGY2352	....	2	8	8	1	FEE8
CGY3402	....	2	8	8	1	FEE8
CGY3352	....	2	6	8 or 6	1	FEE8 or 4
CGY3232	....	2	4	6	1	FEE4
CGY3232	....	2	4	4	1	FEE4

\*Neutral concentric conductor.



## Appleton Sill Plates for Service Entrance Cable

### Schedule OF



Provides metallic protection to the service entrance cable at the point it enters the building.

Can be furnished with DuxSeal weatherproof compound which is compressed around the cable and fills up the hole when the plate is screwed down.

Made of aluminum and are furnished with two hot-dipped galvanized screws.

### Without DuxSeal Weatherproof Compound

No.	Fits Cable	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
25230	All Sizes to 3 Cond. No. 4.....	10	100	12
25231	3 Cond. to 2.....	10	100	14

### With DuxSeal Weatherproof Compound

25235	All Sizes to 3 Cond. No. 4.....	10	100	13
25236	3 Cond. to 2.....	10	100	15

### DuxSeal Weatherproof Compound

No.	Container
25250.....	1 Pound Package
25251.....	5 Pound Package

## T&B Aluminum Wall Plates

Approved by Underwriters' Laboratories



Accommodates a maximum of three No. 4 wires in the service cable and a maximum of one No. 4 wire for the grounded connection.

Furnished plain or with non-drying Dux Seal caulking compound and with two No. 8 wood screws.

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. per 100
5545	\$40.00	10	100	9
*5546	40.00	10	100	11

\*With Dux Seal.

## No. 2110 T&B Watertight Wall Plates



Makes a watertight job where service entrance cable enters the building. For 2W8 through 3W4.

Malleable iron.

Furnished with soft rubber gasket and three screws.

No.	Per 100	Unit Quan.	Std. Pkg.	Wt. Lb. per 100
2110	\$38.00	10	100	15

## T&B Flanged Building Heads

Approved by Underwriters' Laboratories



Used in out-building service entrances in accordance with REA specifications.

Installed by drilling a 1½-inch diameter hole through the building wall to accommodate the hub which has a ½-inch female thread.

Composition insulator has five holes, two of which are plugged.

Cap is made of aluminum.

Furnished with two wood screws for mounting.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. per 100
5570	\$50.00	Without Rain-Seal Compound	6	24	78
5571	55.00	With Rain-Seal Compound	6	24	80

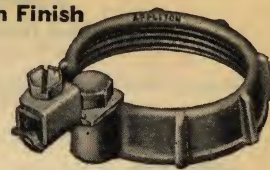
## Appleton Malleable, Grounding Bushings

Schedule GF

Cadmium Finish



Locking Type  
Locking Type



Non-Locking Type  
Non-Locking Type

Size In.	No.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.	Size In.	No.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1½	9450M	50	100	5	2½	9456M	5	10	4½
¾	9451M	50	100	7	3	9457M	5	10	6½
1	9452M	25	50	5	3½	9458M	1	5	4½
1¼	9453M	25	50	6¼	4	9459M	1	5	6
1½	9454M	25	50	7¾	...	...	...	...	...
2	9455M	10	25	6	...	...	...	...	...

## Appleton Grounding Locknuts

Schedule GF

Cadmium Finish



Eliminates the use of grounding bushing and jumper wire. Used in place of ordinary locknut. The set screw wedges its way between the knockout and conduit forming a perfect bond.

No.	Size Inches	Std. Pkg.	Wt. Lb. Std. Pkg.	No.	Size Inches	Std. Pkg.	Wt. Lb. Std. Pkg.
9425	1½	100	3½	9430	2	25	4
9426	¾	100	4	9431	2½	10	2
9427	1	50	3	9432	3	10	4
9428	1¼	50	3	9433	3½	5	2½
9429	1½	50	4	9434	4	5	2½

## T&B Grounding Bushings

PATENTED

Approved by Underwriters' Laboratories

For use with or without jumper wire. The wedge, when screwed into place, cuts into the box, assuring a perfect ground between the conduit and box.

Made of malleable iron castings.



Size Inches	No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. per 100
1½	3860	\$10.00	50	100	8
¾	3861	15.00	50	100	9
1	3862	20.00	25	50	12
1¼	3863	25.00	25	50	15
1½	3864	35.00	25	50	30
2	3865	50.00	10	25	35
2½	3866	90.00	5	10	40
3	3867	100.00	5	10	45
3½	3868	150.00	1	5	50
4	3869	200.00	1	5	55

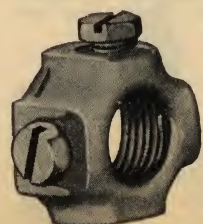
## T&B Grounding Bushings

Approved by Underwriters' Laboratories

For use with jumper wire.

Made of heavy malleable iron castings with smooth, well-rounded shoulders.

Furnished assembled with two brass screws.



Size In.	No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. per 100
1½	3850	\$10.00	50	100	8
¾	3851	15.00	50	100	9
1	3852	20.00	25	50	12
1¼	3853	25.00	25	50	15
1½	3854	35.00	25	50	30
2	3855	50.00	10	25	35
2½	3856	90.00	5	10	40
3	3857	100.00	5	10	45
3½	3858	150.00	1	5	50
4	3859	200.00	1	5	55



**T&B Grounding Wedges**

Approved by Underwriters' Laboratories

For new or old work. Without jumper wires. Wedges clamped between the bushing and box wall, make the box a part of the ground circuit. On old work, loosen the bushing and insert the wedge. The open end slips over the wires without disturbing them.

Made of bronze.



No.	Per 100	Size In.	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
3650	\$12.00	1½	50	100	2½
3651	14.00	¾	50	100	5½
3652	17.00	1	25	50	6½
3653	19.00	1¼	25	50	8
3654	22.00	1½	25	50	10
3655	32.00	2	10	25	12
3656	66.00	2½	5	10	20
3657	80.00	3	5	10	23
3658	144.00	3½	2	5	30
3659	160.00	4	2	5	40
3660	240.00	4½	2	3	100
3661	300.00	5	2	2	100
3662	360.00	6	2	2	100

**T&B Outdoor Meter Grounding Rings**

Used for attaching ground wires to outdoor meter cases.

Installed at either the top hub, where the service comes in, or at the bottom hub, where the service goes out to enter the house. To install, slip the ring over the hub of the watertight connector

before screwing the connector into the hub of the meter case. Ring can be turned at any angle required for the ground wire; No. 8, 6, or 4 size.

If the outdoor service is conduit instead of cable, the meter grounding ring should be installed between the locknut and the meter hub. Made of malleable iron with Tabolette finish. Connector, clip and screw, is made of bronze.

For Cable or Conduit Size Inches	No.	Per 100	Std. Pkg.	Weight Pounds per 100
¾	595	\$10.00	100	5
1	596	15.00	100	5½

**Type GR Appleton Bonding Meter Rings**

Schedule GF



Designed for grounding meter box to a driven or artificial ground, when a water pipe or other grounding electrode is not available in building. Meter ring is placed between watertight connector and hub

of meter box, after which ground wire is placed through either vertical or horizontal hole and screw is then tightened. This makes positive bond—no soldering.

No.	Per 100	Size In.	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
9415	.....	¾	50	100	8
9416	.....	1	50	100	8¼
9417	.....	1¼	10	50	9

**No. 58 Mueller Radio Ground Clampings**

Used to ground a radio set or other apparatus to a water or radiator pipe.



CLAMPPIPE™

Channeled construction gives a five-point contact with rigidity. Will not spread, bend, or lop over.

The point of the large, casehardened screw cuts through paint or corrosion into clean metal, insuring a good contact.

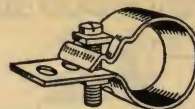
The small screw with undercut head, acts as a cupped washer to hold the ground wire.

Packed 10 in a box, 100 in a carton.

Shipping weight per 100, 8 pounds.

**T & B Solderless Ground Clamps**

Approved by Underwriters' Laboratories



No solder is required in installing these clamps. Simply loop the ground wire through the slot, strap the clamp around the water pipe, tighten up the nut and it's on. Approved as solderless.

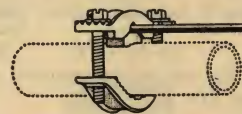
Made of No. 16 gage copper, tinned finish.

No.	Per 100	Size Inches	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
961	\$21.00	¾ to 1 Inclusive	100	1000	8
962	27.00	¾ to 2 Inclusive	100	1000	13
963	33.00	¾ to 3 Inclusive	100	1000	29

**T&B Ground Clamps**

For No. 4 or No. 6 Unarmored Ground Wire

Approved by Underwriters' Laboratories



Nothing to take apart or disassemble when installing this fitting. Just wrap it around the waterpipe and slide the open slot of the crossbar under the head of the bolt.

No.	Per 100	Waterpipe Size, Inches	Carton	Std. Pkg.	Wt., Lb. per 100
2	\$35.00	½, ¾ or 1	5	25	38
3	70.00	1¼, 1½ or 2	5	10	55
4	250.00	2½, 3 or 3½	2	4	130
5	350.00	4, 4½ or 5	2	4	175
6	450.00	6	1	1	217

**T&B Single-Bolt Ground Clamps**

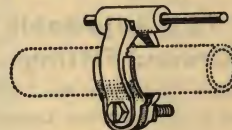
Approved by Underwriters' Laboratories

Easily and quickly installed—only one bolt to tighten. Ground wire locks the jaws together and the bolt fastens them tightly on the waterpipe.

When using 1-inch waterpipe, clamp the ground wire with the end hook. When using ½-inch waterpipe, use the lower hook. For ¾-inch waterpipe, use either hook.

Packed 5 in a carton, 25 in a standard package.

For No. 4 or No. 6 Unarmored Ground Wire



No.	Per 100	Description	Wt., Lb. per 100
3840	\$35.00	For ½, ¾ or 1-Inch Waterpipe.....	38
3842	35.00	With Adapter for Ground Rods from ½-Inch Up.....	38

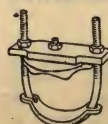
For No. 6 or No. 8 Armored or No. 4 Unarmored Wire

No.	Per 100	Description	Wt., Lb. per 100
3841	\$35.00	For ½, ¾ or 1-Inch Waterpipe.....	38
3843	35.00	With Adapter for Ground Rods from ½-Inch Up.....	48

**T&B Waterpipe Ground Clamps**

A large size waterpipe clamp that consists of a U-bolt (made of ¾-inch rod), cross-bar and hex nut.

Packed 1 in a standard package.



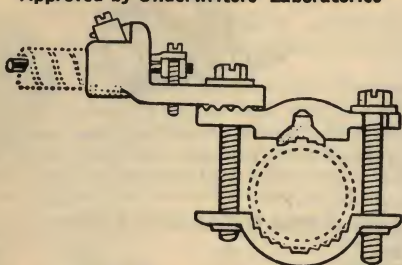
No.	Per 100	Waterpipe Size Inches	Weight Pounds per 100
3891	\$500.00	8	380
3892	550.00	9	340
3893	600.00	10	355
No. 3891	3894	12	365



## T &amp; B Ground Fittings

## No. 3962 For Armored Ground Wire

Approved by Underwriters' Laboratories



Designed for a neat, quick and reliable connection. The built-in Bite-Tite connector securely holds the armor of the cable in place without injury to the sheath.

The solderless grip takes any size ground wire from No. 4 to No. 8. The projecting tongue extends into the tub portion, providing mechanical protection for the ground wire.

Use No. 3960 armored wire hub for No. 4, No. 6 or No. 8 armored wire.

No.	Per 100	Waterpipe Size Inches	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
3962	\$35.00	1/2, 3/4, or 1	5	25	58

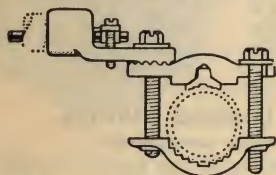
Ground fittings for use with armored wire to fit larger sizes of waterpipe are available.

## For Standard Rigid Conduit

With Connection for No. 8 to No. 2 Ground Wire

Approved by Underwriters' Laboratories

Installation is simple and connection is dependable. The conduit hub has a full size bushing and conduit stop. Threads are clean cut.



The solderless grip takes a full range of ground wire. The projecting tongue extends into the hub portion, providing mechanical protection for the ground wire.

No. 3932 and No. 3933 use No. 3930 conduit hub, for

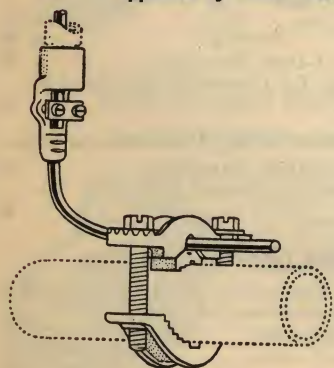
1/2-inch conduit. No. 3942 uses No. 3940 conduit hub, for 3/4-inch conduit.

No.	Per 100	Waterpipe Size Inches	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
3932	\$50.00	1/2, 3/4, or 1	5	25	58
3933	100.00	1 1/4, 1 1/2, or 2	5	10	75
3942	125.00	1 1/2, 3/4, or 1	5	25	61

## No. 3972 T &amp; B Adjustable Length Ground Fittings

With Connection for No. 8 to No. 2 Ground Wire

Approved by Underwriters' Laboratories



An 8-inch length of No. 4 wire is permanently staked in the hub section. Insert the other end of this wire in the solderless grip of the waterpipe clamp.

Easily adjusted in length, it can also be bent or turned into any position desired.

Use No. 3970 conduit hub, adjustable length, for 1/2-inch conduit.

No.	Per 100	Waterpipe Size Inches	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
3972	\$75.00	1/2, 3/4, or 1	5	25	66

Other conduit type ground fittings to fit larger sizes of waterpipe are available.

## T &amp; B Ground Fittings

Approved by Underwriters' Laboratories

Simple in design and easy to install. Has interchangeable conduit hubs and waterpipe clamps. Takes care of any of the following grounding jobs:

Bare ground wire (No. 4 or No. 6) to 1/2 inch through 6-inch waterpipe.

Armored ground wire (No. 8 to No. 2) to 1/2 inch through 6-inch waterpipe.

Conduit (1/2, 3/4, or 1 inch) to 1/2 inch through 6-inch waterpipe.

## Complete Fitting

Adjustable conduit (1/2 inch) hub to 1/2 inch through 6-inch waterpipe.

Each hub and waterpipe clamp is clearly marked with size range and number for quick identification. Clamps have high reinforcing ribs for extra strength. All bolts have deep screwdriver slots or high hex-heads to help make tightening easy. Hubs designed to meet waterpipe at any angle.

Made of malleable iron, plated with Tabolite galvanizing to resist corrosion.

## Conduit Hubs



No.	Per 100	Conduit Size In.	Ground Wire No.	Car-ton	Std. Pkg.	Wt. Lb. per 100
3930	\$25.00	1/2	8-2	5	25	20
3940	100.00	3/4	8-2	5	20	22
3950	150.00	1	8-3/0	5	10	29

## No. 3970 Conduit Hubs—Adjustable Length



Conduit size, 1/2 inch. For ground wire, Nos. 8 to 2 inclusive.

Packed 5 in a carton, 25 in a standard package.

Weight per 100, 26 pounds.

No. 3970.....per 100 \$30.00

## No. 3960 Armored Wire Hubs



For ground wire, Nos. 8 to 2 inclusive.

Packed 5 in a carton, 25 in a standard package.

Weight per 100, 20 pounds.

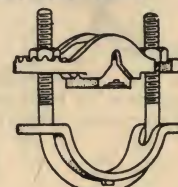
No. 3960.....per 100 \$30.00

## Waterpipe Clamps

For Use With Conduit Hubs Listed Above



No. 2



No. 4

No.	Per 100	Waterpipe Size Inches	Car-ton	Std. Pkg.	Weight Pounds per 100
2	\$35.00	1/2, 3/4 or 1	5	25	38
3	70.00	1 1/4, 1 1/2 or 2	5	10	55
4	250.00	2 1/2, 3 or 3 1/2	2	4	130
5	350.00	4, 4 1/2 or 5	2	4	175
6	450.00	6	1	1	215

## Assemblies

Table below shows how to make any type of ground fitting, using T & B interchangeable conduit hubs and waterpipe clamps.

CONDUIT HUB	No.	ASSEMBLY NO.					
		WATERPIPE SIZE, INCHES					
		1/2, 3/4, 1	1 1/4, 1 1/2	2 1/2, 3, 3 1/2	4, 4 1/2, 5	6	
Conduit	No.	2	3	4	5	6	
1/2	3930	3932	3933	3934	3935	3936	
3/4	3940	3942	3943	3944	3945	3946	
1	3950	3952	3953	3954	3955	3956	
Arm.	3960	3962	3963	3964	3965	3966	
1/2 Adj.	3970	3972	3973	3974	3975	3976	
Unarm.	....	2	3	4	5	6	



## Groundulet Safety Circuit Equipment

Schedule CM

Type GCH

For Threaded Heavy Wall Conduit—With Swivel Feature

For use where conduit is employed to protect the grounding conductor. Grounding conductor is connected to conduit-hub part by swivel bolt. Conduit can be brought in from any angle. Malleable.

SIZE, INCHES			No.
Conduit	Water Pipe	O.D. Grounding Electrode	
1/2	1/2 to 1	1/2 to 1	GCH1

### Type GCH For Threaded Heavy Wall Conduit Without Swivel Feature

SIZE, INCHES		No.
Water Pipe	O.D. Grounding Electrode	
1/2 to 1	1/2 to 1	GCH13

### Type GCH With Clamp Connection for Ground Conductor

For Nos. 8, 6, or 4 Armored or Unarmored Ground Conductor

In this type the grounding conductor passes through the bolt and is clamped between the under side of bolt head and the upper face of square cavity. A set screw holds armor in place and effectively grounds it to clamp. Malleable.

SIZE, INCHES		No.
Water Pipe	O.D. Grounding Electrode	
1/2 to 1	1/2 to 1	GCH08
1/2 to 1	1/2 to 1	GCH91

For Nos. 8, 6, or 4 Unarmored Ground Conductor or Insulated Building Wire

### Type GCH Clamp Water Meter Shunt



SIZE, INCHES		No.
Water Pipe	O.D. Grounding Electrode	
1/2 to 1	5/8 to 1	GCH191

### Type GCE Strap Clamp Terminals



SIZE, INCHES		No.
Water Pipe	O.D. Grounding Electrode	
1/2 to 2	5/8 to 1	GCE012
1/2 to 4	5/8 to 1	GCE014
1/2 to 6	5/8 to 1	GCE016

For Threaded Heavy Wall Conduit



SIZE, INCHES			Description	No.
Conduit or Wire	Water Pipe	O.D. Grounding Electrode		
1/2	1/2 to 2	5/8 to 1	1 Strap	GCE12
1/2	1/2 to 4	5/8 to 1	1 Strap	GCE14
1/2	1/2 to 6	5/8 to 1	1 Strap	GCE16

\*For use also on lead pipe in sizes 1/2 and 3/4-inch Grades AA and AAA, and 1-inch Grades A, AA, and AAA.

## Groundulet Safety Circuit Equipment

Schedule CM

Type GC Strap Clamps



For bonding and grounding equipment in interior wiring systems.

No. GC101 is made of steel.

No. GC102 is made of brass.

### †No. GC100 Type GC Grounding Straps



Flexible Copper, tinned.

Available in broken coils less than 50 ft.; 1 to 10 coils of 50 ft. each, 11 to 25 coils of 50 ft. each, 26 to 50 coils of 50 ft. each, 51 or more coils of 50 ft. each.

## Type GC Groundulet Bushings

Schedule CM



Without Cap-Screw, Lug, or Wire Clip



With Cap-Screw (For use with Pressure Connectors)



With Grounding Screw (For Bonding without Jumper Wires)

All conduits entering a service box must be properly bonded to it by bonding jumpers, ground clamps, lugs or devices approved for the purpose.

Type GC Groundulet bushings and jumpers make dependable and approved bonding connections. The bushings provide a means for connecting bonding jumpers to them.

The bonding jumpers being within the cabinet, are protected from mechanical injury and all fire hazard is confined within the cabinet.

Inches	Brass		Malleable	
	Without Cap-Screw No.	With Cap-Screw No.	With Cap-Screw No.	With Grounding Screw No.
1/2	GC151	GC515	GC231	GC61
3/4	GC152	GC525	GC232	GC62
1	GC153	GC534	GC233	GC63
1 1/4	GC154	GC544	GC234	GC64
1 1/2	GC155	GC554	GC235	GC65
2	GC156	GC564	.....	GC66
2 1/2	GC167	GC677	.....	GC67
3	GC168	GC687	.....	GC68
3 1/2	GC169	GC697	.....	GC69
4	GC1610	GC607	.....	GC70
4 1/2	GC1611	GC617	.....	GC71
5	GC1612	GC627	.....	GC72
6	GC1614	GC647	.....	GC73

†Suitable for bonding and grounding equipment in interior wiring systems

## Type GC Pressure Connectors

For use with Groundulet bushings.



No. GC302, Wire Size, 14 to 4.

No. GC303, Wire Size, 4 to 1.

## Type GC Brass Stud



For fastening two or more pressure connectors on one bushing. Wire Size, 1/2 to 6.



**Appleton Ground Fittings***Schedule GF***Cadmium Finish**

For Grounding Service Wire and Conduit System

**No. 9446 Type GCIC**

With Tite-Grip Contacts

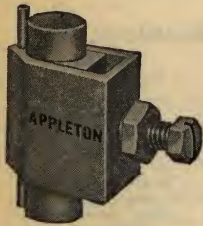


For Nos. 8, 6 or 4 bare or insulated copper wire. Will not injure the copper ground wire. Has a heavy screw through the center of the clamping member that forms a positive contact when tightened.

No.	Size Water Pipe, Inches	Ground Rod, Inches	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
9446	1/2, 3/4, 1	1	5	25	13

**No. 9447 Type GCRC**

For Ground Rod



For bare or insulated copper wire.

Especially designed for ground rods. Makes a neat installation and better bond.

Ground wire is wedged against the rod by tightening the screw and is permanently set by running down the locknut.

No.	Ground Rod, Inches	Takes Wire B&S	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
9447	1/2, 3/4	8, 6 or 4	5	25	3 1/2

**No. 9402 Type GCH**For Rigid Conduit  
With Brass Washer

Equipped with flat washer.

Rigid clamp jaws hold securely to water pipe.

No.	Conduit Ground Inches	Size Water Pipe, Inches	Ground Rod, In.	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
9402	1/2	1/2, 3/4, 1	1	5	25	10

**No. 9481 Type FGF**

Flexible



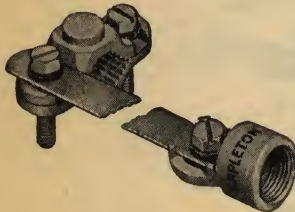
Has an 8-inch flexible copper strip that can be bent, twisted or turned into any position. Very desirable when the water pipe or ground rod is not easily accessible.

Furnished with the Appleton vise-grip clamp.

No.	Ground Rod, Inches	Size Water Pipe, Inches	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
9481	1/2	1/2, 3/4 or 1	5	25	18

**No. 9494 Type GSFF**

Flexible



Furnished with V-shaped clamp. Fits any 1/2-inch ground conduit and takes 1/2 to 1-inch ground rod—solderless type.

Can be bent, twisted or turned into any position.

No.	Conduit Ground Inches	Size Water Pipe, Inches	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
9494	1/2	1/2, 3/4, 1	5	25	22

**No. 9445 Type GCH Appleton Ground Fittings***Schedule GF*  
**Cadmium Finish**

With adjustable top clamp to accommodate No. 8 or No. 6 bare armored ground conductor, and for grounding 1/2, 3/4 or 1-inch water pipe, or 1-inch ground rod. Cadmium Finish.

Carton, 5. Standard package, 25.  
Weight per standard package, 10 pounds.

**No. 9448 Type GCAR Appleton Ground Fittings**

Adjustable and Reversible



Swivel type. Adapted for No. 8, 6 or 4 B&S armored ground wire, and for grounding 1/2, 3/4 or 1-inch water pipe, or 1-inch ground rod. Cadmium Finish.

Carton, 5. Standard package, 25.  
Weight per standard package, 15 pounds.

**No. 9489 Type GCWC Appleton Ground Fittings***Schedule GF***Cadmium Finish**

Has deck with a hole drilled to accommodate ground wire. The screw, when tightened, wedges the wire into a cup in the center of fitting, making a good bond and positive grip.

Adapted for Nos. 8, 6 or 4 bare or insulated copper wire.

No.	Size Water Pipe, Inches	Ground Rod, Inches	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
9489	1/2, 3/4, 1	1	5	25	11

**No. 9491 Type GCP Appleton Solderless Ground Fittings***Schedule GF***Cadmium Finish**

This malleable clamp will take wires No. 8, 6 or 4 either solid or stranded. Wire fastening device consists of a 3/8-inch bolt with a 1/4-inch hole through it. In connecting wire, end of wire is put through hole in bolt, then nut is tightened and bolt will clamp wire. This method makes a positive and simple connection. Clamp can be used to advantage where it is not necessary to run ground wire in armored or rigid cables.

Size grounding, 1/2, 3/4, or 1-inch water pipe; 1-inch ground rod. Packed 5 in carton; 25 in standard package.

Weight per standard package, 8 pounds.

**No. 9493 Type GCNS Appleton Non-Swivel Ground Fittings***Schedule GF*

Fits Nos. 8, 6 or 4 B&S armored ground wire and takes 1/2 to 1-inch water pipe or 1-inch ground rod. May also be used with Nos. 8, 6 or 4 bare or insulated copper wire. Cadmium finish.

No.	Size Water Pipe, Inches	Ground Rod, In.	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
9493	1/2, 3/4, 1	1	5	25	7 1/2



## Appleton Ground Fittings

Schedule GF

Cadmium Finish

For Grounding Service Wire and Conduit System

### No. 9492 Type GCVG

For Rigid Conduit  
With Soldering Lug

The clamp, with vise-grip, can be attached to pipe that is closely secured to surface.

Adapted for Nos. 8, 6 or 4 B&S armored ground wire.



No.	Conduit Ground, In.	Size Water Pipe, Inches	Ground Rod, Inches	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
9492	1/2	1/2, 3/4, 1	1	5	25	19

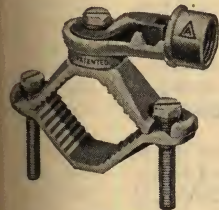
### Type LGC

Adjustable

For Large Size Water Pipes

The deck has a heavy brass washer and by placing the ground wire under the lug it makes a positive bond.

Adapted for Nos. 8, 6 or 4 B&S armored ground wire.



No.	Conduit Ground Inches	Size Grounding Inches	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
9482	1/2	1 1/4, 1 1/2 and 2	5	25	20
9483	1/2	2 1/2 and 3	5	10	15
9484	1/2	3 1/2 and 4	5	5	9

### Type LGCH

For Large Size Water Pipe

Has hole through deck to take Nos. 8, 6 or 4 bare or insulated copper wire which is held in place by the center screw and lock washer.

Has V-shaped clamp.



No.	Size Water Pipe, Inches	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
9497	1 1/4, 1 1/2, 2	5	10	5
9498	2 1/2 and 3	5	10	11
9499	3 1/2 and 4	5	10	15

### No. 9486 Grounding Water Meter Shunt



Consists of two grounding fittings with screws connected to a 24-inch length of flexible copper strap.

No.	Grounding Size, Inches	Water Pipe	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
9486	1/2, 3/4, 1	1/2 to 1 Ground Rod	5	25	25

### No. GF13A Sherman Heavy Duty Cast Ground Clamps



For copper water pipe connections. Fits 1/4 to 3/4-inch pipe and 1/2 to 1-inch diameter ground rods.

No. ....	GF13A
Per 100 .....	\$60.00
Carton .....	10
Standard Package .....	100
Weight per 1000 .....	pounds 340

## Sherman Ground Fittings

For Bare Copper Wire



No. GF2



No. GF3

No. GF2, conduit type, is solderless with lug. Rotating head. Reversible for use on rod also.

Conduit size, 1/2 inch.

No. GF3 with lug is designed expressly for No. 4 bare copper wire; will take to No. 10 B. & S.

No. GF7, armored wire type, is solderless with rotating head, reversible for rod. No. 8 or 6 wire in armor.

No. GF14 is same as No. GF3 except that no soldering lug is provided.

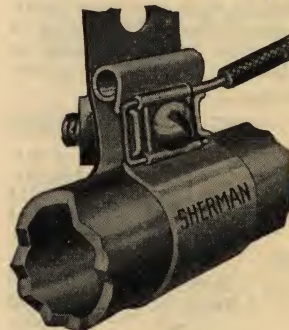
Heavy malleable iron, rustproofed.

Approved by Underwriters' Laboratories.

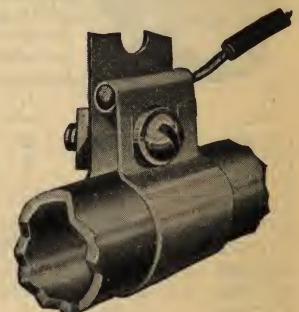
Slotted clamp allows easy installation. Reversible clamp for pipe or rod.

No.	Each	Pipe Size Inches	Carton Quantity	No. in Standard Package	Wt., Lb. per 1000
GF2	\$ .73	1/2, 3/4, 1	5	25	650
GF3	.40	1/2, 3/4, 1	5	25	450
GF7	.46	1/2, 3/4, 1	5	25	410
GF14	.36	1/2, 3/4, 1	5	25	440
GF9	.79	1 1/4, 1 1/2, 2	5	25	560
GF10	3.39	2 1/2, 3	5	25	1125
GF11	4.22	3 1/2, 4	5	25	1500

## Sherman Copper Ground Clamps



Solderless Type



Solder Type

For general grounding or bonding of electrical conductors. Heavy copper strap is easy to apply.

Solderless No.	1SL	2SL	3SL	4SL
Solder No.	1	2	3	4
Pipe Size .....	3/8-1	3/8-2	3/8-3	3/8-4
Carton Quantity .....	100	100	50	25
Standard Package .....	1000	1000	500	250
Weight per 1000 .....	80	130	170	200

Prices upon application.

## No. 1 Reliable Station Ground Clamps



For grounding of communication circuits.

For 3/8 to 1 1/4-inch pipe.

Tinned copper strips, round edge with close fitting threads.

Standard package, 100.

No. 1, Shipping Weight, 6 Pounds per 100 .... per 100 \$7.00



**O.Z. Type AG Ground Connectors****For Cable to Pipe or Rod**

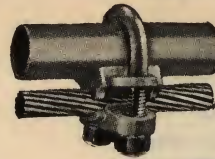
Used for connecting a ground wire at right angles to a driven ground rod or pipe. Everdur U-bolt, nuts and lock washers complete a positive ground fitting combining strength and corrosion resistance.

No.	Each	Rod Inches	IPS Inches	CONDUCTOR RANGE	
				Minimum	Maximum
AG0204	\$ .90	1/2	1/4	8 Sol.	4 Str.
AG0222	.95	1/2	1/4	4 Sol.	2/0 Str.
AG0304	.90	5/8 or 3/4	3/8	8 Sol.	4 Str.
AG0322	.95	5/8 or 3/4	3/8	4 Sol.	2/0 Str.
AG0325	1.10	5/8 or 3/4	3/8	2/0 Sol.	250MCM
AG0350	1.70	5/8 or 3/4	3/8	300MCM	500MCM
AG0704	1.20	1	1/2 or 3/4	8 Sol.	4 Str.
AG0722	1.35	1	1/2 or 3/4	4 Sol.	2/0 Str.
AG0725	1.55	1	1/2 or 3/4	2/0 Sol.	250MCM
AG0750	2.55	1	1/2 or 3/4	300MCM	500MCM
AG1104	1.30	....	1	8 Sol.	4 Str.
AG1122	1.40	....	1	4 Sol.	2/0 Str.
AG1125	1.55	....	1	2/0 Sol.	250MCM
AG1150	2.65	....	1	300MCM	500MCM
AG1204	1.35	....	1 1/4	8 Sol.	4 Str.
AG1222	1.60	....	1 1/4	4 Sol.	2/0 Str.
AG1225	1.75	....	1 1/4	2/0 Sol.	250MCM
AG1250	2.85	....	1 1/4	300MCM	500MCM
AG1504	1.45	....	1 1/2	8 Sol.	4 Str.
AG1522	1.70	....	1 1/2	4 Sol.	2/0 Str.
AG1525	1.85	....	1 1/2	2/0 Sol.	250MCM
AG1550	2.95	....	1 1/2	300MCM	500MCM
AG2004	1.60	....	2	8 Sol.	4 Str.
AG2022	1.85	....	2	4 Sol.	2/0 Str.
AG2025	2.05	....	2	2/0 Sol.	250MCM
AG2050	3.25	....	2	300MCM	500MCM
AG2075	3.65	....	2	550MCM	750MCM

**O.Z. Type CG Ground Connectors****For Cable to Pipe**

Has reversible contact plate which permits the ground wire to be connected either at right angles or parallel to a ground pipe. The fitting is designed so that the saddle can be installed before the ground connection is made.

No.	Each	IPS Inches	CONDUCTOR RANGE	
			Minimum	Maximum
CG2004	\$1.60	2	8 Sol.	4 Str.
CG2022	1.85	2	4 Sol.	2/0 Str.
CG2025	2.05	2	2/0 Sol.	250MCM
CG2050	3.25	2	300MCM	500MCM
CG2604	1.90	2 1/2	8 Sol.	4 Str.
CG2622	2.10	2 1/2	4 Sol.	2/0 Str.
CG2625	2.20	2 1/2	2/0 Sol.	250MCM
CG2650	3.00	2 1/2	300MCM	500MCM
CG3104	2.30	3	8 Sol.	4 Str.
CG3122	2.60	3	4 Sol.	2/0 Str.
CG3125	2.80	3	2/0 Sol.	250MCM
CG3150	3.60	3	300MCM	500MCM
CG3604	2.60	3 1/2	8 Sol.	4 Str.
CG3622	2.90	3 1/2	4 Sol.	2/0 Str.
CG3625	3.10	3 1/2	2/0 Sol.	250MCM
CG3650	3.95	3 1/2	300MCM	500MCM
CG4104	3.00	4	8 Sol.	4 Str.
CG4122	3.40	4	4 Sol.	2/0 Str.
CG4125	3.70	4	2/0 Sol.	250MCM
CG4150	4.65	4	300MCM	500MCM
CG4622	3.75	4 1/2	4 Sol.	2/0 Str.
CG4625	4.05	4 1/2	2/0 Sol.	250MCM
CG4650	5.05	4 1/2	300MCM	500MCM
CG5122	4.25	5	4 Sol.	2/0 Str.
CG5125	4.65	5	2/0 Sol.	250MCM
CG5150	5.75	5	300MCM	500MCM
CG6122	5.10	6	4 Sol.	2/0 Str.
CG6125	5.60	6	2/0 Sol.	250MCM
CG6150	6.85	6	300MCM	500MCM
CG8125	7.40	8	2/0 Sol.	250MCM
CG8150	9.05	8	300MCM	500MCM

**O.Z. Type BG Ground Connectors****For Cable to Pipe or Rod**

For connecting a driven ground wire parallel to a ground pipe or rod. Everdur U-bolt, nuts and lock washers permit high clamping pressure to be applied, while the interlocking clamp firmly grips the cable.

No.	Each	Rod Inches	IPS Inches	CONDUCTOR RANGE	
				Minimum	Maximum
BG0204	\$ .85	1/2	1/4	8 Sol.	4 Str.
BG0222	.90	1/2	1/4	4 Sol.	2/0 Str.
BG0304	.85	5/8 or 3/4	3/8	8 Sol.	4 Str.
BG0322	.90	5/8 or 3/4	3/8	4 Sol.	2/0 Str.
BG0325	.95	5/8 or 3/4	3/8	2/0 Sol.	250MCM
BG0350	1.45	5/8 or 3/4	3/8	300MCM	500MCM
BG0704	1.20	1	1/2 or 3/4	8 Sol.	4 Str.
BG0722	1.25	1	1/2 or 3/4	4 Sol.	2/0 Str.
BG0725	1.35	1	1/2 or 3/4	2/0 Sol.	250MCM
BG0750	2.00	1	1/2 or 3/4	300MCM	500MCM
BG1104	1.25	....	1	8 Sol.	4 Str.
BG1122	1.30	....	1	4 Sol.	2/0 Str.
BG1125	1.35	....	1	2/0 Sol.	250MCM
BG1150	2.10	....	1	300MCM	500MCM
BG1204	1.25	....	1 1/4	8 Sol.	4 Str.
BG1222	1.35	....	1 1/4	4 Sol.	2/0 Str.
BG1225	1.40	....	1 1/4	2/0 Sol.	250MCM
BG1250	2.40	....	1 1/4	300MCM	500MCM
BG1504	1.35	....	1 1/2	8 Sol.	4 Str.
BG1522	1.40	....	1 1/2	4 Sol.	2/0 Str.
BG1525	1.50	....	1 1/2	2/0 Sol.	250MCM
BG1550	2.40	....	1 1/2	300MCM	500MCM
BG2004	1.55	....	2	8 Sol.	4 Str.
BG2022	1.75	....	2	4 Sol.	2/0 Str.
BG2025	1.95	....	2	2/0 Sol.	250MCM
BG2050	2.70	....	2	300MCM	500MCM
BG2075	2.90	....	2	550MCM	750MCM

**O.Z. Type DG Ground Connectors****For Cable to Pipe or Rod**

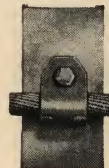
For grounding two parallel ground wires at right angles to a ground rod or pipe.

High pressure interlocking clamp tightly grips the cable. Has copper alloy body; everdur U-bolt, nuts and lock washers.

No.	Each	Rod Inches	IPS Inches	CONDUCTOR RANGE	
				Minimum	Maximum
DG0204	\$ .85	1/2	1/4	8 Sol.	4 Str.
DG0222	.90	1/2	1/4	4 Sol.	2/0 Str.
DG0304	.85	5/8 or 3/4	3/8	8 Sol.	4 Str.
DG0322	.90	5/8 or 3/4	3/8	4 Sol.	2/0 Str.
DG0325	1.00	5/8 or 3/4	3/8	2/0 Sol.	250MCM
DG0350	1.60	5/8 or 3/4	3/8	300MCM	500MCM
DG0704	1.15	1	1/2 or 3/4	8 Sol.	4 Str.
DG0722	1.30	1	1/2 or 3/4	4 Sol.	2/0 Str.
DG0725	1.45	1	1/2 or 3/4	2/0 Sol.	250MCM
DG0750	2.50	1	1/2 or 3/4	300MCM	500MCM
DG1104	1.30	....	1	8 Sol.	4 Str.
DG1122	1.45	....	1	4 Sol.	2/0 Str.
DG1125	1.55	....	1	2/0 Sol.	250MCM
DG1150	2.75	....	1	300MCM	500MCM

**O.Z. Type KG Ground Connectors****For Cable to Flat Bar**

For any flat surface up to 1/4-inch thick.



No.	Each	CONDUCTOR RANGE		DIMENSIONS, IN.		
		Minimum	Maximum	Lgth.	Width	Bolt
KG04	\$ .50	8 Sol.	4 Str.	1 1/4	1 1/8	3/8
KG22	.55	4 Sol.	2/0 Str.	1 5/8	1 1/4	3/8
KG25	1.10	2/0 Sol.	250MCM	2	1 3/8	1/2
KG50	1.55	300MCM	500MCM	2 3/8	1 1/2	1/2
KG75	2.30	550MCM	750MCM	2 7/8	1 3/4	5/8
KG92	2.70	800MCM	1000MCM	3 3/8	2	5/8

Also available in types EG, FG, HG, LG, MG, and QG. Prices on request.

**O.Z. Type BR Flexible Copper Connectors**

Prices on request.



## Appleton Sta-Tite Pipe Hangers

Schedule CFS

Cadmium Finish

For Use With Rigid Conduit (Heavy-Wall) and Threadless Thin-Wall Conduit



Type PHS with Single Conduit Parallel with Structural Shape

Sta-Tite Pipe Hangers are designed to accommodate  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1-inch rigid conduit (heavy wall) or  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1,  $1\frac{1}{4}$ , and  $1\frac{1}{2}$ -inch threadless thin-wall conduit. Types PHS and PHD permit running the conduit parallel with beam, crosswise, or any horizontal angle.

### Type PHS—For Single Line Conduit Run Parallel or at Right Angles

No. 2330

For  $\frac{1}{2}$  and  $\frac{3}{4}$ -inch rigid conduit (heavy-wall); also  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1-inch threadless thin-wall conduit.

Carton, 10. Std. pkg. 100; wt. std. pkg., 80 lb.

No. 2331

For 1-inch rigid conduit (heavy-wall); also  $1\frac{1}{4}$  and  $1\frac{1}{2}$ -inch threadless thin-wall conduit.

Carton, 10. Std. pkg. 50; wt. std. pkg., 60 lb.



### Type PHD—For 2 Lines of Conduit Run Parallel or at Right Angles

No. 2335

For  $\frac{1}{2}$  and  $\frac{3}{4}$ -inch rigid conduit (heavy-wall); also  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1-inch threadless thin-wall conduit.

Carton, 10. Std. pkg. 100; wt. std. pkg., 85 lb.

No. 2336

For 1-inch rigid conduit (heavy-wall); also  $1\frac{1}{4}$  and  $1\frac{1}{2}$ -inch threadless thin-wall conduit.

Carton, 10. Std. pkg. 50; wt. std. pkg., 60 lb.



### Type PHK-2—For Carrying Open Wires on Structural Steel Work

No. 2340

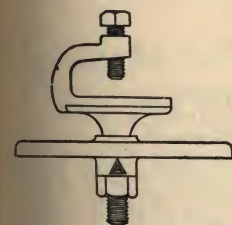
For 2 Porcelain Knobs

Porcelain knobs and screws not furnished.

Carton quantity, 10.

Std. pkg., 100.

Wt. std. pkg., 115 lb.



### Type PK-3—For Carrying Open Wires on Structural Steel Work

No. 2341

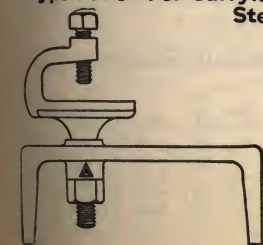
For 3 Porcelain Knobs

Porcelain knobs and screws not furnished.

Carton quantity, 10.

Std. pkg., 100.

Wt. std. pkg., 170 lb.



### Type PH—For Suspending Groups of Pipes From Structural Shapes

No. 2342

Type PH is also for use with accessories listed below.

Carton quantity, 100.

Std. pkg. 100.

Wt. std. pkg., 65 lb.



### Accessories for Type PH Pipe Hangers

#### Single Style—For 1 Pipe

Carton, 10.

Std. pkg. 100; wt. std. pkg., 18 lb.

No. 2345



For  $\frac{1}{2}$  and  $\frac{3}{4}$ -inch rigid conduit (heavy-wall); also  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1-inch threadless thin wall conduit.

No. 2346

For 1-inch rigid conduit (heavy-wall);  $1\frac{1}{4}$  and  $1\frac{1}{2}$ -inch threadless thin-wall conduit.

#### Double Style—For 2 Pipes

Carton, 10.

Std. pkg. 100; wt. std. pkg., 20 lb.

No. 2350



For  $\frac{1}{2}$  and  $\frac{3}{4}$ -inch rigid conduit (heavy-wall);  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1-inch threadless thin-wall conduit.

No. 2351

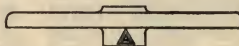
For 1-inch rigid conduit (heavy-wall);  $1\frac{1}{4}$  and  $1\frac{1}{2}$ -inch thin-wall threadless conduit.

#### For Carrying Open Wires on Structural Steel Work \*No. 2355, With Holes for Attaching 2 Porcelain Knobs

Carton, 10.

Standard package, 100.

Wt. std. pkg., 50 lb.

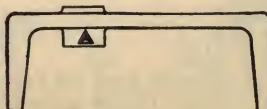


#### \*No. 2356, With Holes for Attaching 3 Porcelain Knobs

Carton 10. Std. pkg. 100.

Wt. std. pkg., 100 lb.

\*Holes tapped 10-24,  $\frac{5}{16}$ -inch-18, and  $\frac{3}{8}$ -inch-16, respectively. Porcelain knobs and screws not furnished.





## Wedgtite Hangers and Wire Supports



Type CHRP Installed  
Pipe Parallel with a  
Structural Shape

Used for attaching conduit or wire hangers to structural steel members.

Can be installed without drilling or in any way preparing the member to which attached.

A few blows of the hammer makes the attachment secure.

### Type CHRP

For pipe running at right angle to support.



No. For Flange		Conduit Size Inches	Each
1/8"-1/2"	1/4"-5/8"		
CHRP1	CHRP12	1/2	\$.40
CHRP2	CHRP22	3/4	.45
CHRP3	CHRP32	1	.50
CHRP4	CHRP42	1 1/4	.55
CHRP5	CHRP52	1 1/2	.60
CHRP6	CHRP62	2	.65

### Type CHU

For suspending a pipe or group of pipes from a structural steel support. Takes 1/2-inch hanger bolt.



*Thick. Flange Inches	No.	Each
1/8 to 1/2	CHU1	\$.50
1/4 to 5/8	CHU21	.50
5/8 to 1	CHU2	.60
3/4 to 1 1/8	CHU22	.60

### Type CHA



CHA2



CHA3

For suspending open wire from a structural steel support.

*Thickness of Flange Inches	Takes Two Porcelain Knobs		Takes Three Porcelain Knobs	
	No.	Each	No.	Each
1/8 to 1/2	CHA2	\$1.10	CHA3	\$1.50
1/4 to 5/8	CHA4	1.10	CHA6	1.50
5/8 to 1	CHA22	1.20	CHA23	1.60
3/4 to 1 1/8	CHA24	1.20	CHA26	1.60

### Type CHB



#### For One Pipe

For supporting pipes on structural steel supports.

*Thick. Flange Inches	SIZE PIPE, INCHES		For One Pipe		For Two Pipes	
	Thick Wall	Thin Wall	No.	Each	No.	Each
1/8 to 1/2	1 1/2, 3/4	1 1/2, 3/4, 1	CHB1112	\$.65	CHB1122	\$.75
	1	1 1/4, 1 1/2	CHB1113	.65	CHB1123	.75
1/4 to 5/8	1 1/2, 3/4	1 1/2, 3/4, 1	CHB1212	.65	CHB1222	.75
	1	1 1/4, 1 1/2	CHB1213	.65	CHB1223	.75
5/8 to 1	1 1/2, 3/4	1 1/2, 3/4, 1	CHB2112	.75	CHB2122	.85
	1	1 1/4, 1 1/2	CHB2113	.75	CHB2123	.85
3/4 to 1 1/8	1 1/2, 3/4	1 1/2, 3/4, 1	CHB2212	.75	CHB2222	.85
	1	1 1/4, 1 1/2	CHB2213	.75	CHB2223	.85



### Type CHW Wedgtite Wedges

No.	*Thickness of Flange, Inches	Each
CHW1	1/8 to 1/2, 5/8 to 1	\$.20
CHW2	1/4 to 5/8, 3/4 to 1 1/8	.20

\*Thickness of flange at a point 3/4 to 1-inch from the edge, where wedge engages with it. With Type CHRP hangers, the thickness of couplings which hold pipe away from flange should be subtracted from maximum thickness given.

## T&B Cable Straps For Use with Service Entrance Cable



No. 1341



Nos. 1344 and 1345

Bolt hole is high. Takes any type of 1/4-inch screw. Available in either malleable iron hot dip galvanized or rust proof aluminum.

Carton, 50.

Standard package, 100.

Cable Size	Malleable Iron			Aluminum		
	No.	Per 100	Wt., Lb.	No.	Per 100	Wt., Lb.
2w12, 2w10, 2w8, 2w6, 3w12	1341	\$3.00	3	1391	\$6.00	2
2w4, 3w10, 3w8, 3w6	1344	4.00	4 1/2	1394	7.00	2
2w2, 3w4, 3w2	1345	5.00	6	1395	8.00	3

## Appleton Universal Cable Clamps

### Schedule OF



No. 15275

Malleable Iron

Cadmium Finish

No.	Wt. Lb.	Std. Pkg.	Carton	Std. Pkg.
15275	3	2	100	100

Fits service entrance cable: 2 No. 4, 1 No. 4 and 1 No. 6, 3 No. 10, 2 No. 10 and 1 No. 12, 3 No. 8, 2 No. 8 and 1 No. 10, 3 No. 6, 2 No. 6 and 1 No. 8.

15276 4 1/2 2 100 100

Fits service entrance cable: 2 No. 2, 1 No. 2 and 1 No.

3 No. 4, 2 No. 4 and 1 No. 6, 3 No. 2, 2 No. 2 and 1 No. 4. 4,

15277 6 25277 3 100 100

## Appleton One-Screw Cable Clamps

### Schedule OF

#### Cadmium Finish

### For Concentric Service Entrance Cable



For Round Shaped Cable



For Oval Shaped Cable

Malleable iron.

Carton quantity, 100. Standard package, 100.

### For Round Shaped Cable

No.	For Type SE Cable	For No. SD Cable	Wt., Lb. Per 100
15290	{ 2 No. 12, 2 No. 10 } { 1 No. 10, 1 No. 12 }	2 No. 10, 2 No. 8	3
15291	{ 2 No. 8, 1 No. 8, } { 1 No. 10, 1 No. 6, } { 1 No. 8, 2 No. 6 }	2 No. 6, 2 No. 4	3
15242	2 No. 4, 2 No. 2	2 No. 2	3
15243	5 No. 6 (4 Insulated, 1 Bare) Style ABN		4

### For Oval Shaped Cable

15293	{ 3 No. 12, 3 No. 10 } { 2 No. 10, 1 No. 12 }	{ 3 No. 8, 2 No. 8, } { and 1 No. 12 }	2 1/2
15240	{ 3 No. 8, 2 No. 8 } { 1 No. 10 }	{ 3 No. 6, 2 No. 6 } { and 1 No. 8 }	3
15241	{ 3 No. 6, 3 No. 4, } { 2 No. 6, 1 No. 8 }	2 No. 4, 1 No. 6	7
15295	3 No. 2	3 No. 2	7

## Galvanized Conduit Straps

No.	Per 100	Size In.	No. to Lb.	Per 100	Size In.	No. to Lb.
208	\$31.80	*	68	214	\$31.80	1 1/2 11
209	31.80	3/8	50	215	31.80	2 7
210	29.40	1/2	45	216	31.80	2 1/2 5
211	29.40	3/4	30	230	31.80	3 4
212	29.40	1	17	231	31.80	3 1/2 2
213	29.40	1 1/4	13			

\*Armored cable.



**No. 7145 Appleton One-Screw Straps**

Schedule CF

**Cadmium Finish**

For 1/4-inch pipe and 3/8-inch armored conductor.

No.	Size Inches	Std. Pkg.	Wt. Lb. Std. Pkg.
7145	1/4	500	9

**No. 7146 Appleton 1-Hole Straps**

Schedule CF

**Cadmium Finish****For Non-Metallic Sheathed Cable**

Fits Nos. 14W2, 12W2 and 10W2 cable. Made of lead-coated, Terne plate steel.

Packed in 5, 10, 25-pound cartons; bulk in 50-pound bags.

**No. 8066 Appleton Cable Clips**

Schedule CF

**Cadmium Finish****For Armored, Non-Metallic Sheathed and CNX Cable**

Fits Nos. 14W2, 12W2, 10W2, 14W3, and 12W3 cable. Made of Terne plate steel; rust-resisting. Fastening hole in clip is 3/16 inch diameter.

Qty. lots: 10,000, 5,000, 2500 and less than 2500. Wt. per 1000, 9 lb.

**No. 8067 Appleton 2-Hole Straps**

Schedule CF

**Cadmium Finish****For Non-Metallic Sheathed Cable**

Fits Nos. 14W2, 12W2 and 10W2 cable. Made of steel.

Packed in 5, 10 or 25-pound cartons. Average, 77 straps to a pound.

**Appleton E-Z-In Armored Cable Staples**

Schedule CF



No. 8065 staple will take Nos. 14W2, 14W3, 12W2, 12W3, 10W2 and 10W3 armored cable.

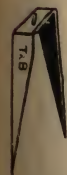
No. 8064 staple will take armored cable on non-metallic sheathed cable in sizes No. 14-2, 14-3, 12-2, 12-3, 10-2 and 10-3.

Plain finish only.

Packed in cases of 5,000.

Quantity lots: 30,000, 10,000, 5,000.

No. ....	8064	8065
Length.....inches	1 1/8	1 3/8
Weight per 5,000.....pounds	54	65

**T&B 3/8-Inch Cable Clips****No. 90 For Armored Cable**

The pitch of the clip legs is counter clockwise to the spiral of cable and holds the flat top of clip from following the convolutions and cannot enter between them. Dent in top of clip settles between rounds of cable convolutions. Cable cannot slip or pull out.

Packed in unit package, 100, 500, or bulk; 10,000 in standard package.

No. 90, Wt., per 1000, 14 Pounds....per 100 \$4.00

**No. 91 For Non-Metallic Sheathed Cable**

This clip is the same as the No. 90 except that it has no dent in the top. The legs are also shorter because the clip does not have to be driven into the wood as far as the No. 90.

Packed in unit package, 100, 500, or bulk; 10,000 in standard package. Weight per 1000, 11 pounds.

No. 91.....per 100 \$3.35

**Diamond One-Hole Malleable Clamps**

Hot galvanized. Annealed twice before galvanizing to assure ductility. Will not crack in installation.

Has but one screw hole and cuts in half the expense of screws or expansion bolts and the labor of installing as compared to the two-hole strap.

**For Standard Conduit**

Pipe Size Inches	No.	Per 100	Cable Size Inches	Capacity Inches	Length Inches	Diam. Screw Hole Inches	Std. Pkg.	Wt. Lb. per 100
1/4	MC-25	\$2.15	.50	1/2	1 3/8	3/16	100	3
3/8	MC-38	2.90	.67	3/16	1 5/8	3/16	100	4
1/2	MC-50	3.50	.84	3/4	2 1/8	5/16	100	6
3/4	MC-75	4.55	1.05	1	2 3/8	5/16	100	6
1	MC-100	5.70	1.31	1 3/16	2 7/8	5/16	100	11
1 1/4	MC-125	9.80	1.66	1 5/8	3 1/2	3/8	50	16
1 1/2	MC-150	13.60	1.90	1 13/16	4	7/16	50	23
2	MC-200	30.15	2.37	2 1/4	5 1/4	1/2	50	45
2 1/2	MC-250	53.30	2.87	2 3/4	6 3/8	5/8	50	100
3	MC-300	74.05	3.50	3 1/16	7 1/8	5/8	35	141
3 1/2	MC-350	110.80	4.00	4	8 3/8	1 1/16	25	200
4	MC-400	162.20	4.50	4 9/16	9 1/4	1 1/16	25	245

**For Thinwall Conduit**

Specify (Type S) when ordering.

1/2	MC-50S	\$3.50	.706	5/8	2	1/4	100	5
3/4	MC-75S	4.55	.922	13/16	2 1/4	5/16	100	6
1	MC-100S	5.70	1.163	1 1/16	2 11/16	5/16	100	10
1 1/4	MC-125S	9.80	1.508	1 3/8	3 1/2	3/8	50	16
1 1/2	MC-150S	13.60	1.738	1 5/8	3 7/8	7/16	50	23
2	MC-200S	30.15	2.195	2 1/16	5	1/2	50	42

**T&B One-Hole Malleable Iron Pipe Straps****For Heavywall Conduit**

Approved by Underwriters' Laboratories

No sagging conduit in a run supported by T&B malleable iron conduit straps. The lip on the end prevents the sag. The reinforcing ribs on the straps give great strength with less weight.

Each strap has been especially designed to fit the conduit snugly. Standard finish is hot dip galvanized.

Size In.	No.	Per 100	Bolt Hole Size, In.	Car-ton	Std. Pkg.	Wt., Lb. per 100
3/8	1275	\$4.00	No. 12	50	100	4
1/2	1276	5.00	1/4	50	100	6
3/4	1277	6.00	1/4	50	100	9
1	1278	8.00	1/4	50	100	13
1 1/4	1279	14.00	5/16	25	50	20
1 1/2	1280	20.00	3/8	25	50	32
2	1281	40.00	1/2	10	25	68
2 1/2	1282	60.00	5/8	10	25	104
3	1283	80.00	5/8	10	25	148
3 1/2	1284	120.00	5/8	5	10	200
4	1285	180.00	5/8	5	10	260
4 1/2	1286	260.00	5/8	2	5	360
5	1287	350.00	5/8	2	5	460

**T&B One-Hole Steel Pipe Straps**

No. 65 has projection on inside to fit the groove in the spiral and prevent slipping of conduit or conductor after the strap is in place.

Size In.	No.	Per 100	Bolt Hole Size, In.	Car-ton	Std. Pkg.	Wt., Lb. per 100
1/4	*65	\$2.00	No. 12	50	100	3
3/8	64	3.00	No. 12	50	100	3
1/2	66	3.50	1/4	50	100	4
3/4	69	4.00	1/4	50	100	7

\*Designed for armored conductors.



## Appleton 1-Screw Conduit Clamps

Schedule CF

Cadmium Finish

For Rigid Conduit (Heavy-Wall)

Only one screw or bolt is required to fasten the clamp and hold same securely to the conduit. The sharp edges on that part of the clamp which fits over the conduit serve to hold the conduit rigid.

Steel



No.	Size In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.	No.	Size In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
7148	1/4	100	100	3	7151	3/4	100	100	8
7149	3/8	100	100	3	7152	1	100	100	9
7150	1/2	100	100	5	7153	1 1/4	25	50	8

Malleable



No.	Size In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.	No.	Size In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
17147	1/8	100	100	2	17154	1 1/2	25	50	19
17148	1/4	100	100	3	17155	2	10	25	16
17149	3/8	100	100	3	17156	2 1/2	10	25	29
17150	1/2	100	100	11	17157	3	10	25	43
17151	3/4	100	100	13	17158	3 1/2	5	10	24
17152	1	100	100	21	17159	4	5	10	29
17153	1 1/4	25	50	17					

## Appleton One-Screw Heavy Stamped Steel Clamps

Schedule CF

Cadmium Finish

For Rigid Conduit (Heavy Wall)



No.	Size In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
17248	1/4	100	500	9
17249	3/8	100	500	9
17250	1/2	100	100	11
17251	3/4	100	100	12
17252	1	100	100	23
17253	1 1/4	25	50	17
17254	1 1/2	25	50	25
17255	2	10	25	20
17256	2 1/2	10	25	20
17257	3	5	10	14
17258	3 1/2	5	10	18
17259	4	5	10	22

## Appleton One-Screw Malleable Clamps

Schedule TW

For Electrical Metallic Tubing (Threadless Thin-Wall Conduit)

Malleable

Cadmium Finish



No.	Size Inches	Car-ton	Std. Pkg.	Wt., Lb. per 100
171T49	3/8	200	2000	4
171T50	1/2	200	2000	5
171T51	3/4	200	1000	6
171T52	1	100	1000	9
171T53	1 1/4	100	500	10
171T54	1 1/2	100	500	16
171T55	2	50	500	17

Steel



No.	Size Inches	Car-ton	Std. Pkg.	Wt., Lb. per 100
172T50	1/2	500	2000	57
172T51	3/4	200	2000	65
172T52	1	100	1000	40

## T &amp; B Malleable Pipe Straps For Thinwall Conduit



Cat. No.	Per 100	Size Inches	Std. Pkg.	Wt., Lb. Per 100
4175	\$4.00	3/8	100	4
4176	5.00	1/2	100	5
4177	6.00	3/4	100	6
4178	8.00	1	100	9
4179	14.00	1 1/4	50	18
4180	30.00	1 1/2	50	26
4181	40.00	2	25	48

## Diamond 1-Hole Steel Clamps

Standard



A very efficient fastening where light construction is to be used.

Made of cold rolled steel. Diamond hot dip galvanized after fabrication.

For telephone work, made in brown or ivory enamel. Can also be supplied in other finishes and metals.

No.	Per 100	Cable Size Inches	Pipe Size Inches	*Thinwall Conduit Inches	Stock Size Inches	Std. Pkg.	Shipping Wt., Lb. per 100
L-3	\$ .60	3/16	...	...	1/2x.072	500	1
L-4	.75	1/4	...	...	1/2x.062	500	1
L-5	.85	5/16	...	...	1/2x.062	500	1
L-6	.95	3/8	1/8	...	1/2x.048	500	1
L-7	1.05	7/16	...	...	1/2x.048	500	1.1
L-8	1.15	1/2	...	...	1/2x.048	500	1.2
L-9	1.20	9/16	...	...	1/2x.048	500	1.2
L-10	1.25	5/8	1/4	3/8	1/2x.048	500	1.3
L-11	2.25	11/16	3/8	1/2	5/8x.062	500	4
L-12	2.85	3/4	1/2	...	11/16x.062	500	4.5
L-14	3.00	7/8	...	3/4	11/16x.062	500	5
L-16	3.45	1	3/4	...	3/4x.080	250	7
L-18	3.60	1 1/8	...	1	3/4x.080	250	7.5
L-20	4.95	1 1/4	1	...	7/8x.115	100	15
L-24	6.65	1 1/2	...	1 1/4	7/8x.115	100	16
L-26	7.10	1 5/8	1 1/4	...	7/8x.115	100	17
L-28	7.30	1 3/4	...	1 1/2	7/8x.115	100	19
L-30	7.45	1 7/8	1 1/2	...	7/8x.115	100	20

\*E.M.T.

## Diamond 1-Hole Steel Conduit and Cable Clamps

Offset Type



Made of rolled steel and Diamond process hot dip galvanized after fabrication.

Also available in other regular finishes and metals.

No.	Per 100	Min.	Max.	Pipe Size In.	Stock Size In.	Ship. Wt., Lb. per 100
403	\$ .35	5/32	7/32	...	5/16x.048	.40
405	.40	1/4	5/16	...	5/16x.048	.50
406	.60	5/16	3/8	...	1/2x.048	1.00
407	.65	3/8	1/2	1/8	1/2x.048	1.10
408	.70	1/2	9/16	1/4	1/2x.050	1.20
409	1.25	5/8	11/16	...	3/4x.060	2.50
411	1.50	3/4	1 1/8	3/8	3/4x.060	2.87
413	2.50	1	1 1/4	1/2	3/4x.078	4.12
417	2.90	1 1/8	1 1/2	3/4	3/4x.078	5.31
421	4.30	1 1/2	1 3/4	1	3/4x.115	9.75
425	5.00	1 3/4	2	1 1/4	3/4x.115	10.62
430	5.50	1 7/8	2 1/8	1 1/2	3/4x.115	12.43
435	7.50	2 1/8	2 3/8	2	3/4x.130	16.00
442	8.50	2 1/2	2 7/8	2 1/2	3/4x.130	18.43



### Diamond 2-Hole Steel Conduit and Cable Straps Standard



Designed to withstand strains and vibrations. Because of its great strength, fewer straps need be used in conduit or cable runs.

Made of steel. Diamond hot dip galvanized after fabrication.

No.	Per 100	Cable Size In.	Pipe Size In.	Stock Size In.	Ship. Wt. Lb. per 100	No.	Per 100	Cable Size In.	Pipe Size In.	Stock Size In.	Ship. Wt. Lb. per 100
T7	\$1.50	7/16	1 1/8	1 1/2	x.048	1.5	T24	\$9.00	1 1/2	1 3/4	15.25
T10	1.65	5/8	1 1/4	1 3/8	x.048	2.0	T26	9.60	1 3/4	1 7/8	16.50
T11	3.00	11/16	3/4	1 1/2	x.062	3.2	T28	10.20	1 3/4	2	17.00
T12	3.15	3/4	1 1/8	1 5/8	x.062	4.1	T30	10.80	1 3/4	2 1/8	19.00
T14	3.75	7/8	1 1/2	2	x.062	4.4	T40	17.30	2 1/2	2 1/8	26.00
T16	4.65	1	1 3/4	2 1/8	x.080	6.9	T46	20.40	2 7/8	2 1/2	31.00
T18	5.10	1 1/8	2	2 3/8	x.080	7.3	T56	23.50	3 1/2	3	35.00
T20	7.50	1 1/4	2 1/8	3	x.080	13.5					

### Diamond 2-Hole Steel Conduit and Cable Straps

#### Extra Heavy



Designed to withstand heavy strains and vibration. Because of its great strength, fewer straps need be used in conduit or cable runs.

Made of steel. Diamond hot dip galvanized after fabrication.

No.	Per 100	Cable Size In.	Pipe Size In.	Stock Size In.	Shipping Wt. Lb. per 100	No.	Per 100	Cable Size In.	Pipe Size In.	Stock Size In.	Ship. Wt. Lb. per 100
N1	\$2.60	7/16	1 1/8	1 x 1/16	4.5	N8	\$8.35	1 1/4	1	1 x 1/8	19.2
N2	3.00	5/8	1 1/4	1 x 1/16	5.5	N9	9.50	1 1/2	1	1 x 1/8	21.5
N3	3.50	11/16	3/4	1 x 1/16	6.7	N10	10.65	1 3/4	1	1 x 1/8	23.5
N4	3.70	3/4	1	1 x 1/16	7.1	N11	11.25	1 7/8	1	1 x 1/8	24.7
N5	3.90	7/8	1 1/2	1 x 1/16	7.7	N12	11.80	2	1	1 x 1/8	26.0
N6	4.75	1	1 3/4	1 x 1/16	8.3	N13	12.40	2 1/8	1	1 x 1/8	27.2
N7	7.20	1 1/8	2	1 x 1/8	17.9	N14	13.00	2 1/4	1	1 x 1/8	28.5

### Di-Stamp Conduit Clamps

#### Pressed Steel—Hot Galvanized

Hot dipped galvanized by the Diamond process. The hollow or arched section of this clamp gives maximum strength with minimum weight.



Conduit Size In.	Per 100	No. Wood Screws	Std. Pkg.	Wt. Lb. per 100
* 1/4	\$2.69	10	100	3
* 3/8	2.69	10	100	3
1/2	3.34	10	100	5
3/4	4.30	14	100	8
1	6.69	14	100	9
1 1/4	11.16	18	50	20
1 1/2	17.85	18	50	36

\*These sizes are made of flat stock.

### Appleton Conduit Hangers

#### Schedule CFS Cadmium Finish



Consists of two parts—a base and clip.

Clip is snapped on over the conduit, slipped into the base, after which the screw on the side is tightened and a firm grip made on the conduit. Cadmium finish.

No.	Size In.	Std. Pkg.	Wt. Lb. Std. Pkg.
7110	1/2	100	7
7111	3/4	100	8
7112	1	100	10

### Appleton 1-Screw Clamp Backs

#### Schedule CF

#### Cadmium Finish

#### For Rigid Conduit (Heavy Wall) and Electrical Metallic Tubing

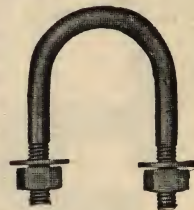


Used under pipe clamps to raise the conduit from surface and prevent moisture accumulation around pipe.

Also allow conduits to run into hubs and knockouts of boxes in straight line.

#### —WILL TAKE CLAMP—

No.	For Rigid Conduit	For E.M.T.	Size In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
27148	{17148}	171T49	3/8	100	100	6
	{17149}					
27150	17150	{171T50}	1/2	100	100	10
		{171T51}				
27151	17151	171T52	3/4	100	100	10
27152	17152	171T53	1	100	100	15
27153	17153	171T54	1 1/4	25	50	12
27154	17154	171T55	1 1/2	25	50	14
27155	17155	.....	2	10	25	10
27156	17156	.....	2 1/2	10	25	12
27157	17157	.....	3	10	25	20
27158	17158	.....	3 1/2	5	10	..
27159	17159	.....	4	5	10	..



### O.Z. Type U U-Bolts

#### For Clamping Conduit

Furnished with Nuts and Flat Washers.

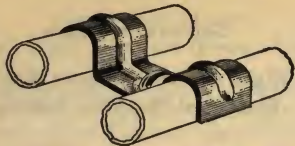
Made of steel, cadmium plated or hot-dip galvanized; or Everdur alloy.

Standard length provides for clamping the conduit to a 3/8 inch thick plate.

Conduit Size Inches	Stock Size Inches	Cadmium Plated No.	Steel Each	Hot-Dip Galvanized No.	Each
1/2	1/4	MU054	\$.12	HU054	\$.15
3/4	1/4	MU074	.12	HU074	.15
3/4	1/4	MU075	.15	HU075	.18
1	1/4	MU114	.13	HU114	.16
1	1/4	MU115	.16	HU115	.19
1	3/8	MU116	.19	HU116	.22
1 1/4	1/4	MU124	.14	HU124	.17
1 1/4	3/8	MU125	.17	HU125	.20
1 1/4	3/8	MU126	.20	HU126	.23
1 1/2	1/4	MU154	.15	HU154	.18
1 1/2	3/8	MU155	.18	HU155	.21
1 1/2	3/8	MU156	.21	HU156	.24
2	5/16	MU205	.20	HU205	.23
2	3/8	MU206	.23	HU206	.26
2 1/2	3/8	MU266	.26	HU266	.29
2 1/2	1/2	MU268	.36	HU268	.40
3	3/8	MU316	.29	HU316	.32
3	1/2	MU318	.40	HU318	.44
3 1/2	3/8	MU366	.32	HU366	.35
3 1/2	1/2	MU368	.44	HU368	.48
4	3/8	MU416	.35	HU416	.38
4	1/2	MU418	.48	HU418	.52
4 1/2	3/8	MU466	.40	HU466	.45
4 1/2	1/2	MU468	.55	HU468	.60
5	3/8	MU516	.45	HU516	.50
5	1/2	MU518	.70	HU518	.75



### Minerallac Duplex Jiffy Clips For Tubing and Cable



An efficient fastening where parallel runs of tubing or cable are used. Only one bolt or screw is required to hold clip in place. Made in plated steel or Everdur.

No.	Steel Per Std. Pkg.	Everdur Per Std. Pkg.	Size Cable or Tube, In.	Standard Package
300	\$1.05	\$3.15	1 1/4 x 1/4	500
301	1.35	4.00	3/8 x 3/8	500
302	1.45	4.35	1/4 x 3/8	500
303	1.60	4.80	1/4 x 1/2	500
304	1.75	5.25	3/8 x 5/8	500

### Minerallac Jiffy Clips



Made in cadmium plated steel and Everdur, for hanging pipe, conduit, and BX cable; also for mounting coils, etc., in radios and vending machines. Only one screw or bolt is required to hold the clip and the article which it is supporting firmly in place.

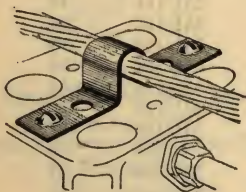
		For Tube							
No. or Size, In.	Per Std. Pkg.	Steel		Everdur		For Tube Size, In.	For Cable O.D. Size, In.	Std. Pkg.	
		Wt. Lb.	Std. Pkg.	Wt. Lb.	Std. Pkg.				
105	\$ .80	3		\$2.55	3 1/2	1/4	.250	500	
110	.90	3		2.65	3 1/2	3/16	.312	500	
115	1.05	6 3/8		2.75	6 3/4	3/8	.375	500	
135	1.55	3		6.00	3 1/2	3/4	.750	100	

### For Iron Pipe and Conduit

No. or Size, In.	Per Std. Pkg.	Steel		Everdur		For Rigid Conduit Size, In.	Thin Wall Conduit Size, In.	For Cable O.D. Size, In.	Std. Pkg.
		Wt. Lb.	Std. Pkg.	Wt. Lb.	Std. Pkg.				
120	\$1.15	6 1/2		\$2.95	7	1/8	..	.405	500
125	1.25	7 1/2		3.45	8 1/4	1/4	..	.540	500
130	1.50	2 3/4		5.45	3 1/4	3/8	1/2	.706	100
140	1.60	4		6.90	4 1/4	1/2	..	.840	100
145	2.00	4 1/4		7.90	4 1/2	..	3/4	.922	100
150	2.30	4 1/2		8.90	5	3/4	..	1.050	100
155	2.80	5		11.90	5 1/4	..	1	1.165	100
160	3.40	8 1/4		14.80	9	1	..	1.315	100
165	3.90	10		17.30	11	..	1 1/4	1.50	100
170	4.50	12 1/4		19.80	13 1/2	1 1/4	1 1/2	1.660	100

### Minerallac Messenger Straps

#### For Outlet Boxes



Designed for messenger cable service and should be used in conjunction with the messenger hanger.

Made of cadmium-plated steel or Everdur alloy.

Fits all standard outlet boxes and 3/8-inch messenger cable.

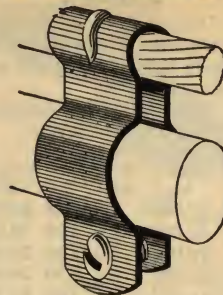
Recommended stove bolt size, 1/4 x 1/2 inches.

Standard package, 100.

Size Cable.....inches	3/8
*Steel.....per std. pkg.	\$3.00
*Everdur.....per std. pkg.	6.30
Approximate Weight per Standard Package..pounds	3 1/4

\*Prices do not include stove bolts.

### Minerallac Messenger Hangers For Conduit and Cable



Made of cadmium-plated steel or Everdur alloy.

The top loop holds the cable in place while the conduit is being installed.

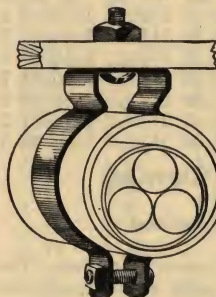
Recommended stove bolt size: No. M-O, 3/16 x 1 inch; No. M-1, 1/4 x 1 1/4 inches; No. M-2, 1/4 x 1 1/4 inches.

No.	Steel		Everdur		For Rigid Conduit Size, In.	For Thin Wall Conduit Size, In.	Std. Pkg.
	*Per Std. Pkg.	Wt. Lb. Std. Pkg.	*Per Std. Pkg.	Wt. Lb. Std. Pkg.			
M-O	\$4.00	5 1/2	\$9.00	6	3/8	1/2	100
M-1	4.45	6	9.45	8	1/2	3/4	100
M-2	5.90	7	15.50	10	3/4	1	100

\*Prices do not include stove bolts.

### Minerallac Cable and Conduit Hangers

Listed by Underwriters' Laboratories, Inc.



Made of cadmium-plated steel or Everdur alloy.

Quickly installed to run open wiring, cable and conduit with a more compact arrangement.

For voltages above 550 volts, the hanger should be used with insulated bushings.

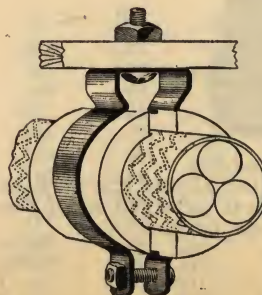
No.	Steel		Everdur		For Rigid Conduit Size, In.	Thin Wall Conduit Size, In.	FOR CABLE OR CONDUIT, O.D. INCHES		Std. Pkg.
	Per Std. Pkg.	Wt. Lb. Std. Pkg.	Per Std. Pkg.	Wt. Lb. Std. Pkg.			Min.	Max.	
0	\$3.90	5	\$8.90	5 1/4	1/2, 3/8	1/2	.625	.844	100
1	4.30	6 1/2	10.90	7 1/4	3/4	3/4	.812	1.062	100
2	5.70	8	15.60	8 3/4	1	1	1.062	1.344	100
2 1/2	6.00	8 3/4	16.30	9 1/2	..	1 1/4	1.281	1.50	100
3	6.20	10	17.55	11	1 1/4	1 1/2	1.50	1.688	100
4	7.70	16	24.95	17 3/4	1 1/2	..	1.688	1.969	100
5	8.30	11 3/4	36.60	12 1/2	2	2	2.219	2.469	50
6	9.20	13 1/4	44.50	14 3/4	2 1/2	..	2.688	3.00	50

### Minerallac Porcelain Bushings

#### For Cable Hangers

Used on cable hangers when working with voltages of 550 volts and above.

Provides the requisite dielectric and structural strength.



No.	Per Std. Pkg.	FOR CABLE O.D. INCHES		Std. Pkg.	Wt. Lb. Std. Pkg.
		Min.	Max.		
1	\$8.40	5/16	1/2	100	8
2	9.05	3/8	7/16	100	9 1/2
3	12.90	7/8	1 1/16	100	15
4	14.50	1 1/8	1 3/16	100	22
5	18.05	1 1/2	1 5/8	100	49
5	19.70	1 3/4	2 1/8	100	60



**T&B Adjustable Conduit Hangers**

Approved by Underwriters' Laboratories

Will fit any flange from 2¾ to 12 inches. Universal in the range of beam flanges to be fit, the number of pipes to be accommodated, and the various angles at which the pipe may be run. Adjustable for varying plaster lines; will support any number of conduits from one to eight. Clamps made of stamped steel.

**No. 700 Type A Clamps**

Fits flanges from 2¾ to 7⅞ inches, including bolts.

Packed 100 in a standard package; weight, 33 pounds.

No. 700.....per 100 \$60.00  
No. 703, Special Bolts, Wt. per 100, 6 Lb.....per 100 \$10.00

Conduit Size Inches	No.	Complete With Supports per 100	No. of Conduits	Std. Pkg.	Wt. Lb. per 100
1/2	710	\$60.00	1	100	45
3/4	711	70.00	1	100	46
1	712	80.00	1	50	48
1 1/4	713	90.00	1	50	51
1 1/2	714	100.00	1	25	52
2	715	110.00	1	25	56
2 1/2	716	125.00	1	25	59
3	717	140.00	1	25	63
1/2	718	65.00	2	100	58
3/4	719	75.00	2	100	65
1/2	720	80.00	4	50	72
3/4	721	90.00	4	50	80
1/2	722	100.00	6	25	97
3/4	723	120.00	6	25	112
1/2	724	120.00	8	25	111
3/4	725	140.00	8	25	127
1/2 and 3/4	726	85.00	2 and 2	25	90
1/2 and 3/4	727	100.00	2 and 4	25	105
1/2 and 3/4	728	100.00	4 and 2	25	104
1/2 and 3/4	729	110.00	4 and 4	25	119
1	730	75.00	2	25	73
1 1/4	731	90.00	2	25	85
1 1/2	732	100.00	2	25	95

**T&B Malleable Iron Supports**

Conduit Size Inches	No.	Per 100	No. of Conduits	Std. Pkg.	Wt. Lb. per 100
1/2	741	\$25.00	2	100	25
3/4	743	35.00	2	50	32
1	745	45.00	2	25	40
1 1/4	746	50.00	2	25	52
1 1/2	747	55.00	2	25	62
1/2	742	50.00	4	100	39
3/4	744	60.00	4	50	47

**T&B Steel Supports**

Conduit Size Inches	No.	Per 100	No. of Conduits	Std. Pkg.	Wt. Lb. per 100
1/2	733	\$15.00	1	100	12
3/4	734	20.00	1	100	13
1	735	30.00	1	50	15
1 1/4	736	40.00	1	50	18
1 1/2	737	50.00	1	25	19
2	738	60.00	1	25	23
2 1/2	739	70.00	1	25	26
3	740	80.00	1	25	30

**T&B Adjustable Conduit Hangers**

Approved by Underwriters' Laboratories

Will fit any flange from 2¾ to 12 inches. Universal in the range of beam flanges to be fit, the number of pipes to be accommodated, and the various angles at which the pipe may be run. Adjustable for varying plaster lines; will support any number of conduits from one to eight.

Clamps made of stamped steel.

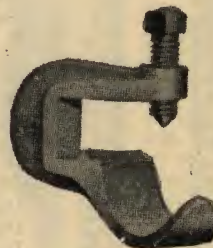
**No. 701 Type B Clamps**

Fits flanges from 7 to 12 inches, including bolts.

Packed 100 to a standard package; weight, 62 pounds.

No. 701.....per 100 \$80.00  
No. 703, Special Bolts, Wt. per 100, 6 Lb.....per 100 10.00

Conduit Size Inches	No.	Complete With Supports per 100	No. of Conduits	Std. Pkg.	Wt. Lb. per 100
1/2	760	\$90.00	1	100	74
3/4	761	100.00	1	100	75
1	762	110.00	1	50	77
1 1/4	763	115.00	1	50	80
1 1/2	764	125.00	1	25	81
2	765	140.00	1	25	85
2 1/2	766	150.00	1	25	88
3	767	175.00	1	25	92
1/2	768	90.00	2	100	87
3/4	769	100.00	2	100	94
1/2	770	100.00	4	50	101
3/4	771	110.00	4	50	109
1/2	772	125.00	6	25	126
3/4	773	150.00	6	25	141
1/2	774	150.00	8	25	140
3/4	775	170.00	8	25	160
1/2 and 3/4	776	125.00	2 and 2	25	119
1/2 and 3/4	777	140.00	2 and 4	25	134
1/2 and 3/4	778	125.00	4 and 2	25	133
1/2 and 3/4	779	140.00	4 and 4	25	148
1	780	100.00	2	25	102
1 1/4	781	110.00	2	25	114
1 1/2	782	120.00	2	25	124

**T&B Conduit Supports**

Will fit any beam flange up to 5/8-inch thick. Can be used on all popular sizes and types of beams. The pointed set-screw bites into the beam, insuring permanent tightness and a good electrical ground.

Size Conduit Inches	No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. per 100
1/2	690	\$50.00	10	100	40
3/4	691	55.00	10	100	43
1	692	60.00	10	50	55
1 1/4	693	70.00	10	50	60

**T&B Box Hangers or Loops**

For supporting heavy fixtures or devices. Slot on inside for nail to prevent loop or nipple turning after fitting is installed.

Malleable iron. For 3/8 or 1/2-inch drop; 1/2 or 3/4-inch run.

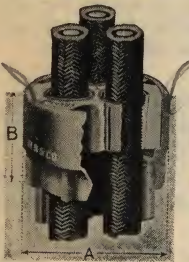
Drop In.	Run In.	No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. per 100
3/8	1/2	791	\$10.00	25	100	9
1/2	1/2	792	15.00	25	100	11
1/2	3/4	793	20.00	25	100	15



### R & S Cable Supports Standard Conduit Type

A compact, strong and easily installed device for supporting cables in conduit risers.

Support consists of a threaded collar, not much larger in diameter than the outlet bushing which it replaces at the end of the conduit inside of the pull box. It has a set of inserts for one or more cables as required and individual tapered cable grips. They are suitable alike for lead, paper or braid-covered cables.



In installing, the collar is screwed on to end of riser, in lieu of a bushing, the cables are then pulled, the inserts dropped into socket of collar and the split, tapered grip bushings placed over the individual cables, which are now allowed to pull the grips into place by their

own weight. A perceptible slack of cable should be provided between supports to allow for expansion and contraction.

Made of galvanized iron, with hard fiber cable grips.

**When ordering,** be sure to state exact outside diameter of cable over insulation. Size of conductor is not sufficient information.

No.	Each	Size Conduit Inches	No. of Cables	DIMENSIONS INCHES		*Max. Cable Inches
				A	B	
1801	\$1.80	1	1	1 11/16	1 5/8	7/8
1802	1.80	1	2	1 11/16	1 5/8	8/8
1803	1.80	1	3	1 11/16	1 5/8	8/8
1804	1.80	1	4	1 11/16	1 5/8	5/16
1811	1.80	1 1/4	1	2 1/4	1 21/32	1
1812	1.80	1 1/4	2	2 1/4	1 21/32	1 13/32
1813	1.80	1 1/4	3	2 1/4	1 21/32	1 13/32
1814	1.80	1 1/4	4	2 1/4	1 21/32	1 13/32
1821	2.20	1 1/2	1	2 9/16	1 15/16	1 1/4
1822	2.20	1 1/2	2	2 9/16	1 15/16	1 1/2
1823	2.20	1 1/2	3	2 9/16	1 15/16	1 1/2
1824	2.20	1 1/2	4	2 9/16	1 15/16	8/8
1831	3.25	2	1	3 9/16	2 7/16	1 3/4
1832	3.25	2	2	3 9/16	2 7/16	2 1/32
1833	3.25	2	3	3 9/16	2 7/16	2 1/32
1834	3.25	2	4	3 9/16	2 7/16	9/16
1841	3.65	2 1/2	1	3 3/4	2 15/16	2
1842	3.65	2 1/2	2	3 3/4	2 15/16	7/8
1843	3.65	2 1/2	3	3 3/4	2 15/16	2 1/32
1844	3.65	2 1/2	4	3 3/4	2 15/16	2 1/32
1851	4.80	3	1	4 9/16	3	2 1/4
1852	4.80	3	2	4 9/16	3	1 1/16
1853	4.80	3	3	4 9/16	3	1
1854	4.80	3	4	4 9/16	3	1 5/16
1862	6.50	3 1/2	2	5 1/16	3 7/32	1 7/32
1863	6.50	3 1/2	3	5 1/16	3 7/32	1 13/16
1864	6.50	3 1/2	4	5 1/16	3 7/32	1 13/16
1872	8.10	4	2	5 5/8	3 5/16	1 1/2
1873	8.10	4	3	5 5/8	3 5/16	1 5/16
1874	8.10	4	4	5 5/8	3 5/16	1 3/16
1887	15.00	5	2	7 1/4	4 1/8	1 7/8
1888	15.00	5	3	7 1/4	4 1/8	1 5/8
1889	15.00	5	4	7 1/4	4 1/8	1 1/2
1897	45.00	6	2	8 1/4	4 1/2	2 1/4
1898	45.00	6	3	8 1/4	4 1/2	2
1899	45.00	6	4	8 1/4	4 1/2	1 13/16

\*Maximum diameter of cable over insulation.

### Special Tile Duct Type

Made on special order only. Used to support risers run through tile duct. Can be furnished in any number of gangs. Prices and full information upon application.

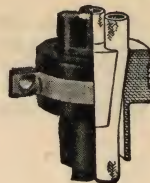
### Split Type

Where installations are already in use, and the necessity of a support for the cables occurs, it is possible to utilize this type of support without the necessity of disconnecting and pulling out the cable risers. This split type can be installed around the cable and the necessary inserts and bushings as used on the conduit type inserted. The range of sizes is the same as on the conduit type.

Prices and full information upon application.

### O.Z. Split Type Cable Supports

#### Two-Piece—For 2 or More Wires



Used where cables are already installed in conduit.

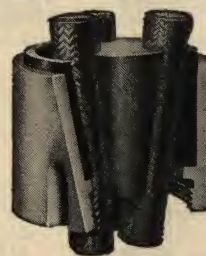
Consists of two parts held together by a cadmium-plated heavy band.

Cable Supports available in lock-type, compound type, and ventilated compound type. Prices on request.

No.	Each	Conduit Size, Inches	Dia. Over Body Inches
S 502	\$1.50	1/2	1 1/4
S 752	1.50	3/4	1 3/4
S1002	1.75	1	2
S1252	1.80	1 1/4	2 3/8
S1502	2.20	1 1/2	2 3/4
S2002	3.25	2	3 1/8
S2502	3.65	2 1/2	3 7/8
S3002	4.80	3	4 1/2
S3502	6.50	3 1/2	5 3/4
S4002	8.10	4	5 3/4
S4502	12.00	4 1/2	6 3/4
S5002	15.00	5	7 3/8
S6002	25.00	6	9

### O.Z. Conduit Type Cable Supports

#### Two-Piece—For 2 or More Wires



Fitting is comprised of two pieces and requires only standard knockout spacing. Body made of cadmium plated malleable iron. Before wires are dropped, body should be installed on the end of the conduit, instead of the conventional iron bushing. After wires are installed, treated maple wood plug is wedged between conductors.

When ordering, specify type of conductor, number of conductors in the conduit and outside diameter of each.

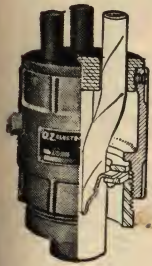
No.	Complete Each	Body Only Each	Plug Only Each	Conduit Size In.	Outside Diam. In.	Height Overall In.	Approx. Wt., Lb. per 100
S 500	\$1.50	\$1.20	\$0.30	1/2	1 1/4	1 5/8	25
S 750	1.50	1.20	.30	3/4	1 1/2	1 5/8	30
S1000	1.75	1.35	.40	1	1 3/4	1 3/4	60
S1250	1.80	1.40	.40	1 1/4	2 1/8	1 3/4	70
S2000	2.20	1.70	.50	1 1/2	2 3/8	2 3/8	90
S2500	3.25	2.70	.55	2	3	2 3/8	140
S3000	3.65	3.05	.60	2 1/2	3 5/8	2 3/8	260
S3500	4.80	4.00	.80	3	4 3/8	2 3/8	365
S4000	6.50	5.50	1.00	3 1/2	5	3 1/4	520
S4500	8.10	6.60	1.50	4	5 1/2	3 1/2	650
S5000	12.00	9.75	2.25	4 1/2	6 1/4	3 3/4	800
S5000	15.00	12.00	3.00	5	6 7/8	4 1/8	900
S6000	25.00	20.00	5.00	6	8 3/8	5 3/8	1400

For hot-dip galvanized body, add 20 per cent to price.

Can be supplied for thin wall conduit (E.M.T.) and fiber conduit on request at additional cost.





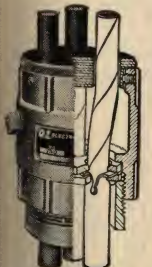
**O.Z. Type CLC Terminators****For Lead Covered Cable****With Top Cover**  
**750 Volts A.C. or D.C.**

Used with a multiple or a single conductor cable up to 750 volts.

Seals the cable and grounds the lead sheath. The body of the fitting screws directly on the conduit, clamping the lead sheath to a bronze bell ring, which has been previously set into the end of the conduit.

Available in type CLH for horizontal installations, and types DSC and DLC for higher voltages. Prices on request.

No.	Each	Conduit Size Inches	Maximum Diameter of Cable Permitted Inches	Diameter Inches	Overall Height Inches	Approximate Compound Required, Pints
CLC 50	\$2.65	1/2	.46	1 1/2	2 5/8	1/20
CLC 75	2.65	3/4	.61	1 1/2	2 5/8	1/20
CLC100	3.05	1	.78	1 7/8	3	1/8
CLC125	3.45	1 1/4	1.02	2 1/4	3 1/8	1/8
CLC150	4.00	1 1/2	1.20	2 5/8	3 1/4	1/8
CLC200	4.80	2	1.53	3	3 3/4	1/4
CLC250	5.80	2 1/2	1.83	3 1/2	4 1/4	1/2
CLC300	6.95	3	2.28	4 1/2	4 3/4	3/4
CLC350	8.40	3 1/2	2.70	4 3/4	5 1/8	1
CLC400	10.30	4	3.00	5 3/8	5 7/8	1 1/2
CLC450	12.40	4 1/2	3.35	5 7/8	6 1/8	2
CLC500	14.80	5	3.75	6 1/2	6 1/2	2 3/4
CLC600	20.00	6	4.50	7 5/8	6 7/8	4

**O.Z. Types CUC and CAC Terminators****For Lead Covered Cable****With Top Cover**  
**750 Volts, A.C. or D.C.**

For two or more single conductor cables. Made of malleable iron, cadmium plated.

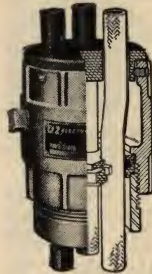
**Type CUC** is used where the wires installed in a conduit are small enough to allow enough space for belling purposes in a pothead the same size as the conduit.

**Type CAC** is used where larger wires are installed in the same size conduit according to standard code requirements. The additional belling area required is provided for by the use of a special adapter and a larger body.

Specially drilled, non-ferrous belling and pressure rings are provided for the individual lead covered cables according to cable requirements.

Available in types CUH and CAH for horizontal installations, and types DUC and DAC for higher voltages. Prices on request.

on request.		MAXIMUM DIAMETER OF WIRE PERMITTED, INCHES				Approx. Compound Required, Pints
No.	Each	Conduit Size Inches	2 Wire	3 Wire	4 Wire	
CUC 75	\$2.75	$\frac{3}{4}$	.24	....	....	$\frac{1}{20}$
CAC 75	3.95	$\frac{3}{4}$	.32	.27	....	$\frac{1}{8}$
CUC100	3.20	1	.32	.27	....	$\frac{1}{8}$
CAC100	4.55	1	.38	.32	.32	$\frac{1}{8}$
CUC125	3.65	$1\frac{1}{4}$	.38	.32	.32	$\frac{1}{8}$
CAC125	5.35	$1\frac{1}{4}$	.58	.38	.35	$\frac{1}{8}$
CUC150	4.25	$1\frac{1}{2}$	.58	.38	.35	$\frac{1}{8}$
CAC150	6.40	$1\frac{1}{2}$	.64	.58	.52	$\frac{1}{4}$
CUC200	5.10	2	.64	.58	.52	$\frac{1}{4}$
CAC200	7.75	2	.78	.73	.64	$\frac{1}{2}$
CUC250	6.15	$2\frac{1}{2}$	.78	.73	.64	$\frac{1}{2}$
CAC250	9.35	$2\frac{1}{2}$	.95	.84	.78	$\frac{3}{4}$
CUC300	7.40	3	1.00	.90	.78	$\frac{3}{4}$
CAC300	11.35	3	1.19	1.10	.95	1
CUC350	8.95	$3\frac{1}{2}$	1.19	1.10	.95	1
CAC350	13.85	$3\frac{1}{2}$	1.33	1.19	1.10	$1\frac{1}{2}$
CUC400	10.95	4	1.35	1.22	1.10	$1\frac{1}{2}$
CAC400	16.60	4	1.53	1.43	1.19	2
CUC450	13.15	$4\frac{1}{2}$	1.55	1.43	1.22	2
CAC450	19.70	$4\frac{1}{2}$	1.68	1.59	1.33	$2\frac{3}{4}$
CUC500	15.65	5	1.68	1.59	1.33	$2\frac{3}{4}$
CAC500	25.75	5	1.91	1.79	1.53	4
CUC600	21.05	6	1.91	1.79	1.53	4

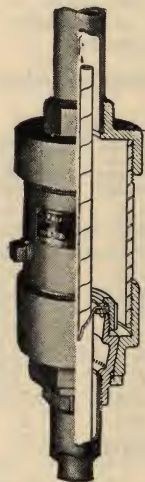
**O.Z. Type CRC Terminators****For Rubber Covered and Other Braided Cable****With Top Cover****750 Volts, A.C. or D.C.**

For one or more cables.

Conductors are sealed by split rubber rings placed around the cable, set into a canvas bakelite seating disc and compressed by a pressure disc.

Available in type CRH for horizontal installations and types DTC and DRC for higher voltages. Prices on request.

		Conduit Size Inches	MAXIMUM DIAMETER OF WIRE PERMITTED, INCHES				Approximate Compound Required Pints
No.	Each		1 Wire	2 Wire	3 Wire	4 Wire	
CRC 50	\$2.95	1/2	.46	....	....	....	1/20
CRC 75	2.95	3/4	.61	.31	.28	.25	1/20
CRC100	3.40	1	.78	.38	.33	.31	1/8
CRC125	3.90	1 1/4	1.02	.51	.51	.42	1/8
CRC150	4.55	1 1/2	1.20	.63	.59	.51	1/8
CRC200	5.50	2	1.53	.78	.78	.63	1/4
CRC250	6.65	2 1/2	1.83	.97	.92	.78	1/2
CRC300	8.00	3	2.28	1.21	1.10	.92	3/4
CRC350	9.65	3 1/2	2.70	1.41	1.32	1.10	1
CRC400	11.75	4	3.00	1.55	1.47	1.24	1 1/2
CRC450	14.05	4 1/2	3.35	1.76	1.64	1.41	2
CRC500	16.65	5	3.75	1.98	1.88	1.47	2 3/4
CRC600	22.15	6	4.50	2.37	1.98	1.88	4

**O.Z. Type J Terminators****For 1 or More Lead or Rubber Covered Cables**

Permits sealing and terminating conduit and cables outside of cabinets without disturbing electrical installations, thus permitting conduit work to be tied into cabinets and other devices, or permitting conduit runs to be tied together, without disturbing the existing equipment.

**When Installing with Cabinets,** the conduit work is terminated at the proper height below the box. The device is dismantled and properly assembled on the end of the conduit, then tied into the box with a chase nipple that is furnished with the fitting. When ready for installation of wiring, disassemble unit on the conduit, seal wires, then reassemble complete, making a mechanical bond between the conduit raceway system and the box. The Oversize sleeve is of sufficient dimensions to provide ample room for pulling-in, belling, splicing, and any other necessary process.

**When Installing Straight Line Conduit**

Runs, the chase nipple at the top is eliminated and conduit work extended from the top adapter. The same procedure follows as above.

Conduit or a Single Lead Size Inches	For a Multiple Covered Cable		For 2 or More Single Conductor Lead Cables		For 1 or More Rubber Covered Cables		Sleeve Maximum Diameter (IPS)	Sleeve Length (IPS)	Size Inches
	No.	Each	No.	Each	No.	Each			
1	JL100	\$8.95	JU100	\$9.00	JR100	\$9.20	3 3/8	6 3/4	2 1/2
1 1/4	JL125	10.90	JU125	11.00	JR125	11.20	4 1/8	6 3/4	3
1 1/2	JL150	13.90	JU150	14.00	JR150	14.30	4 5/8	6 3/4	3 1/2
2	JL200	17.85	JU200	18.00	JR200	18.35	5 1/8	8	4
2 1/2	JL250	23.80	JU250	24.00	JR250	24.40	5 3/4	10 1/4	4 1/2
3	JL300	29.80	JU300	30.00	JR300	30.50	6 3/8	12 1/4	5
3 1/2	JL350	35.80	JU350	36.00	JR350	36.60	7 3/8	14 1/4	6
4	JL400	38.75	JU400	44.00	JR400	44.70	8 1/2	14 1/2	7

**Prices and Ordering**

Prices on **Terminators, Sealing Bushings, and Compound Bushings** apply to malleable iron bodies, cadmium plated. For hot-dip galvanized finish add 20 per cent to prices; for fittings of bronze or aluminum, add 50 per cent to prices; and for filling compound, add 5 per cent to prices.

In ordering specify, (1) size of conduit, (2) diameter over lead, (3) number of conductors, and (4) diameter over insulation of individual conductors.



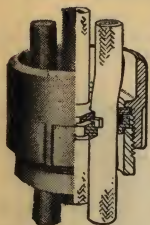
**O.Z. Type FR Compound Bushings**

**For Rubber Covered  
and Braided Cable**

**A.C. or D.C.**

For one or more cables.

Available in types FA, FL, and FU for lead covered cable. Prices on request.



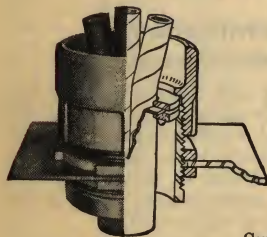
No.	Each	Conduit Size Inches	MAXIMUM DIAMETER OF WIRE PERMITTED, INCHES				Max. O.D. In.	Ht. In.	Approx. Cmpd. Req'd. Pints
			1 Wire	2 Wire	3 Wire	4 Wire			
FR 75	\$1.30	3/4	.61	.31	.28	.25	1 3/8	1 5/8	1/40
FR100	1.55	1	.78	.38	.33	.31	1 3/4	1 5/8	1/20
FR125	1.90	1 1/4	1.02	.51	.51	.42	2 1/8	1 3/4	1/20
FR150	2.35	1 1/2	1.20	.63	.59	.51	2 3/8	1 3/4	1/8
FR200	2.95	2	1.53	.78	.78	.63	3	2	1/6
FR250	3.65	2 1/2	1.83	.97	.92	.78	3 5/8	2 1/2	1/8
FR300	4.50	3	2.28	1.21	1.10	.92	4 1/8	2 5/8	1/2
FR350	5.50	3 1/2	2.70	1.41	1.32	1.10	4 5/8	2 5/8	1/2
FR400	6.65	4	3.00	1.55	1.47	1.24	5 1/8	2 5/8	2/3
FR450	7.95	4 1/2	3.35	1.76	1.64	1.41	5 5/8	2 3/4	1
FR500	9.40	5	3.75	1.98	1.88	1.47	6 3/4	3 1/8	1

**O.Z. Type HLK Compound Bushings**  
**For Lead Covered Cable**  
**in Conduit Entering Cabinets**

For a multiple or a single conductor cable.

Available in type HRK for rubber covered and braided cable. Prices on request.

Furnished complete with locknuts.



No.	Each	Conduit Size Inches	MAXIMUM DIAMETER OF WIRE PERMITTED, INCHES				Max. O.D. In.	Ht. In.	Approx. Cmpd. Req'd. Pints
			1 Wire	2 Wire	3 Wire	4 Wire			
HLK 75	\$1.05	3/4	.61	.31	.28	.25	1 3/8	1 5/8	1/40
HLK100	1.30	1	.78	.38	.33	.31	1 3/4	1 5/8	1/20
HLK125	1.55	1 1/4	1.02	.51	.51	.42	2 1/8	1 3/4	1/20
HLK150	1.95	1 1/2	1.20	.63	.59	.51	2 3/8	1 3/4	1/8
HLK200	2.40	2	1.53	.78	.78	.63	3	2	1/6
HLK250	3.15	2 1/2	1.83	.97	.92	.78	3 5/8	2 1/2	1/8
HLK300	4.00	3	2.28	1.21	1.10	.92	4 1/8	2 5/8	1/2
HLK350	5.10	3 1/2	2.70	1.41	1.32	1.10	4 5/8	2 5/8	1/2
HLK400	6.20	4	3.00	1.55	1.47	1.24	5 1/8	2 5/8	2/3
HLK450	8.30	4 1/2	3.35	1.76	1.64	1.41	5 5/8	2 3/4	1
HLK500	9.55	5	3.75	1.98	1.88	1.47	6 3/4	3 1/8	1

**O.Z. Type HUE Compound Bushings**  
**For Lead Covered Cables**  
**For Exposed Wires Entering Cabinets**

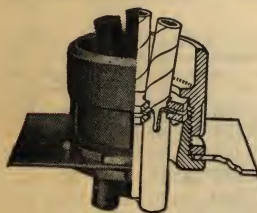
**A.C. or D.C.**

For two or more single conductor cables.

Available in type HRE for rubber covered and braided cable.

Prices on request.

Furnished complete with locknut.



No.	Each	Conduit Size Inches	MAXIMUM DIAMETER OF WIRE PERMITTED, IN.				Max. O.D. In.	Ht. In.	Approx. Cmpd. Req'd. Pints
			1 Wire	2 Wire	3 Wire	4 Wire			
HUE100	\$2.05	1	.32	.27	...	...	1 3/4	2 1/8	1/20
HUE125	2.50	1 1/4	.38	.32	.32	.28	2 1/8	2 1/4	1/20
HUE150	3.10	1 1/2	.58	.38	.35	.28	2 1/4	1 1/8	1/8
HUE200	3.85	2	.64	.58	.52	.31	2 5/8	1 1/6	1/6
HUE250	4.80	2 1/2	.78	.73	.64	.35	3 1/8	1 1/2	1/8
HUE300	5.95	3	1.00	.90	.78	.43	3 3/8	1 1/2	1/2
HUE350	7.30	3 1/2	1.19	1.10	.95	.5	3 3/8	1 1/2	2/3
HUE400	8.85	4	1.35	1.22	1.10	.5 1/2	3 3/8	1	
HUE450	11.00	4 1/2	1.55	1.43	1.22	.6 1/4	3 3/8	1	
HUE500	13.05	5	1.68	1.59	1.33	.6 7/8	4	1	

**O.Z. Type KL Sealing Bushings**

**For Lead Covered Cable**

For a multiple or a single conductor cable.

Available in type KR for rubber covered and braided cable. Prices on request.



No.	Each	Conduit Size Inches	MAXIMUM DIAMETER OF WIRE PERMITTED, INCHES				Max. O.D. In.	Ht. In.	Approx. Cmpd. Req'd. Pints
			1 Wire	2 Wire	3 Wire	4 Wire			
KL 75	\$0.85	3/4	.61	.31	.28	.25	1 3/8	1 5/8	1/40
KL100	1.05	1	.78	.38	.33	.31	1 3/4	1 5/8	1/20
KL125	1.30	1 1/4	1.02	.51	.51	.42	2 1/8	1 3/4	1/20
KL150	1.60	1 1/2	1.20	.63	.59	.51	2 3/8	1 3/4	1/8
KL200	2.00	2	1.53	.78	.78	.63	3	2	1/6
KL250	2.55	2 1/2	1.83	.97	.92	.78	3 5/8	2 1/2	1/8
KL300	3.25	3	2.28	1.21	1.10	.92	4 1/8	2 5/8	1/2
KL350	4.10	3 1/2	2.70	1.41	1.32	1.10	4 5/8	2 5/8	1/2
KL400	5.10	4	3.00	1.55	1.47	1.24	5 1/8	2 5/8	2/3
KL450	6.25	4 1/2	3.35	1.76	1.64	1.41	5 5/8	2 3/4	1
KL500	7.55	5	3.75	1.98	1.88	1.47	6 3/4	3 1/8	1

**O.Z. Type GRK Sealing Bushings**

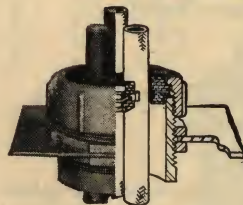
**For Rubber Covered and Braided Cable**  
**in Conduit Entering Cabinets**

**A.C. or D.C.**

For one or more cables.

Available in types GLK, GUK, and GAK for lead covered cable. Prices on request.

Furnished complete with locknuts.



No.	Each	Conduit Size Inches	MAXIMUM DIAMETER OF WIRE PERMITTED, INCHES				Max. O.D. In.	Ht. In.	Approx. Cmpd. Req'd. Pints
			1 Wire	2 Wire	3 Wire	4 Wire			
GRK 75	\$1.10	3/4	.61	.31	.28	.25	1 3/8	1 5/8	1/40
GRK100	1.40	1	.78	.38	.33	.31	1 3/4	1 5/8	1/20
GRK125	1.70	1 1/4	1.02	.51	.51	.42	2 1/8	1 3/4	1/20
GRK150	2.15	1 1/2	1.20	.63	.59	.51	2 3/8	1 3/4	1/8
GRK200	2.65	2	1.53	.78	.78	.63	3	2	1/6
GRK250	3.50	2 1/2	1.83	.97	.92	.78	3 5/8	2 1/2	1/8
GRK300	4.50	3	2.28	1.21	1.10	.92	4 1/8	2 5/8	1/2
GRK350	5.75	3 1/2	2.70	1.41	1.32	1.10	4 5/8	2 5/8	1/2
GRK400	7.05	4	3.00	1.55	1.47	1.24	5 1/8	2 5/8	2/3
GRK450	9.35	4 1/2	3.35	1.76	1.64	1.41	5 5/8	2 3/4	1
GRK500	11.20	5	3.75	1.98	1.88	1.47	6 3/4	3 1/8	1

**O.Z. Type GRE Sealing Bushings**

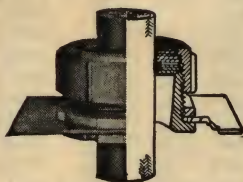
**For Rubber Covered**  
**and Braided Cable**

**With Rubber Ring Seals**

For one or more cables.

Available in types GLE and GUE for lead covered cable.

Furnished complete with locknut.



No.	Each	Conduit Size Inches	MAXIMUM DIAMETER OF WIRE PERMITTED, INCHES				Max. O.D. In.	Ht. In.	Approx. Cmpd. Req'd. Pints
			1 Wire	2 Wire	3 Wire	4 Wire			
GRE100	\$2.00	1	.78	.38	.33	.31	1 3/4	1 1/2	1/20
GRE125	2.45	1 1/4	1.02	.51	.51	.42	2 1/8	1 1/8	1/20
GRE150	3.05	1 1/2	1.20	.63	.59	.51	2 3/8	1 1/8	1/8
GRE200	3.80	2	1.53	.78	.78	.63	3 1/8	1 1/8	1/6
GRE250	4.80	2 1/2	1.83	.97	.92	.78	3 5/8	2	1/8
GRE300	6.00	3	2.28	1.21	1.10	.92	4 1/8	2 1/8	1/2
GRE350	7.40	3 1/2	2.70	1.41	1.32	1.10	5	2 1/4	1/2
GRE400	9.05	4	3.00	1.55	1.47	1.24	5 1/2	2 3/8	2/3
GRE450	11.30	4 1/2	3.35	1.76	1.64	1.41	6 1/4	2 3/8	1
GRE500	13.45	5	3.75	1.98	1.88	1.47	6 7/8	2 3/8	1



## National 90° Angle Box Connectors

### For Armored Cable and Flexible Conduit

Open back is separate from the cable clamp proper.

Rustproofed finish.

Furnished with bondnuts.



No.	Per 100	I.D., In. Open	I.D., In. Closed	Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
2210-EZ	\$18.24	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{15}{32}$	$\frac{1}{2}$	20	100	18
Holds 14-2, 14-3, 12-2, 4-1 armored cable; 6-1 armored lead cable; 14-2, 14-3 plain lamp cord; $\frac{3}{8}$ -inch flexible conduit.								
2210X-EZ	\$18.24	$\frac{11}{16}$	$\frac{35}{64}$	$\frac{17}{32}$	$\frac{1}{2}$	20	100	20
Holds 14-4, 12-3, 10-2, 10-3 armored cable; 14-2, 14-3, 4-1 armored lead cable.								
2213X-EZ	\$25.46	$\frac{7}{8}$	$\frac{11}{16}$	$\frac{39}{64}$	$\frac{1}{2}$	20	100	23
Holds 12-4, 10-4, 8-2 armored cable; 14-4, 12-3, 10-2, 10-3 armored lead cable.								
2211-EZ	\$25.46	$\frac{15}{16}$	$\frac{47}{64}$	$\frac{41}{64}$	$\frac{1}{2}$	20	100	24
Holds 8-3 armored cable; 12-4, 10-3 10-4, 8-2 armored lead cable; $\frac{1}{2}$ -inch flexible conduit.								
2214-EZ	\$43.14	$\frac{11}{8}$	$\frac{7}{8}$	$\frac{27}{32}$	$\frac{3}{4}$	10	50	16
Holds 6-3, 6-4, 4-2, 4-3 armored cable; 8-4, 6-2, 6-3 armored lead cable; $\frac{3}{4}$ -inch flexible conduit.								
2216-EZ	\$65.36	$\frac{117}{32}$	$\frac{11}{4}$	1	1	..	20	12
Holds 2-3 armored cable; 4-4 armored lead cable; 1-inch flexible conduit.								
2218-EZ	\$74.80	$\frac{123}{32}$	$\frac{17}{16}$	$\frac{17}{32}$	$\frac{1}{4}$	..	10	12
Holds $\frac{1}{4}$ -inch flexible conduit.								
2234-EZ	\$108.70	$\frac{27}{64}$	$\frac{13}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	10	10	17
Holds $\frac{1}{2}$ -inch flexible conduit.								
2236-EZ	\$158.96	$\frac{239}{64}$	$\frac{21}{4}$	2	2	5	5	15
Holds 2-inch flexible conduit.								
2238-EZ	\$440.00	$\frac{31}{16}$	$\frac{23}{4}$	$\frac{21}{2}$	$\frac{21}{2}$	5	5	23
Holds $\frac{21}{2}$ -inch flexible conduit.								
2240-EZ	\$585.74	$\frac{39}{16}$	$\frac{31}{4}$	3	3	5	5	34
Holds 3-inch flexible conduit.								

## No. 2208-EZ National 45° Angle Box Connectors

### Open Back Type

An open back connector at 45° angle allowing for easy fishing with separate cable clamps.

Fits 14-2, 14-3, 12-2, and 4-1 armored cable; 6-1 armored lead cable; 14-2 and 14-3 plain lampcord; and  $\frac{3}{8}$ -inch flexible conduit.

With Bondnuts. Hinged strap fitting. Galvanized finish.



Open i.d.,  $\frac{41}{64}$ -inch; closed i.d.,  $\frac{1}{2}$ -inch; wire throat,  $\frac{15}{32}$ -inch; k.o. size,  $\frac{1}{2}$ -inch.

Packed 100 in standard package; 20 in carton.

Weight per standard package, 14 pounds.

No. 2208-EZ.....per 100 \$18.20

## No. 163 National Peepole Box Connectors

### Pitcher Lip Type

Fits 14-2, 14-3, 14-4, 12-2, 12-3, 10-2, and 4-1 armored cable; 6-1 armored lead cable; 14-2 and 14-3 plain lampcord; and  $\frac{3}{8}$ -inch flexible conduit.

With Peepole. No locknut; a simple angle lip inserted in knockout. By tightening screw, strong, firm box connection is formed; perfect ground. Firm holding clamp for cable.



Sherardized finish.

Made from best grade cold rolled open hearth steel.

Open I.D.,  $\frac{43}{64}$  inch; closed I.D.,  $\frac{17}{32}$  inch; wire throat,  $\frac{1}{2}$  inch; K.O. size,  $\frac{1}{2}$  inch.

Weight per standard package, 48 pounds.

No. 163.....per 100 \$3.60

## National Box Connectors EZ Hinged Strap Type



With Bondnut. Galvanized finish.

No. 2163-EZ fits 14-2, 14-3, 14-4, 12-2, 12-3, 10-2, 4-1 armored cable; 14-1, 12-1, 10-1, 8-1 armored lead cable; 14-2, 14-3 plain lampcord;  $\frac{1}{8}$ -inch flexible conduit. Also fits 14-2, 14-3, 12-2, 12-3, and 10-2 loom wire; 14-2 and 12-2 Ovalflex; 6-1 and

4-1 bare armored ground wire.

No. 2164-EZ fits 14-4, 12-3, 10-2, 4-1, 2-1 armored cable; 8-1, 6-1, 4-1 armored lead cable.

No.	Per 100	Open I.D. inches	Closed I.D. inches	Wire Throat inches	K. O. Size inches	Wt. per Std. Pkg. pounds
2163-EZ	\$4.60	$\frac{41}{64}$	$\frac{1}{2}$	$\frac{15}{32}$	$\frac{1}{2}$	80
2164-EZ	4.60	$\frac{11}{64}$	$\frac{35}{64}$	$\frac{17}{32}$	$\frac{1}{2}$	65

## National Box Connectors

### EZ Hinged Strap Type

EZ Strap is wide, strong and clamps cable more securely and strongly without contortion of cable. This point is particularly advantageous in use with flexible steel conduit.



Galvanized finish.

Furnished with bondnuts.

No.	Per 100	Open I.D. In.	Closed I.D. In.	Wire Throat In.	K.O. Size In.	Std. Pkg.	Car-ton	Wt. Lb. Std. Pkg.
2165-EZ	\$10.54	$\frac{3}{4}$	$\frac{37}{64}$	$\frac{17}{32}$	$\frac{1}{2}$	100	50	13

Fits 14-4, 12-3, 12-4, 10-2, 10-3 armored cable; 14-2 14-3, 14-4, 12-3, 12-4, 10-2 armored lead cable.

2166-EZ \$10.54  $\frac{15}{16}$   $\frac{47}{64}$   $\frac{41}{64}$   $\frac{1}{2}$  100 25 15

Armored Lead Cable 12-4, 10-3, 10-4, 8-2; and  $\frac{1}{2}$ -inch flexible conduit.

2166-EZ \$15.22  $\frac{11}{64}$   $\frac{51}{64}$   $\frac{47}{64}$   $\frac{1}{2}$  100 25 19

Fits 10-4, 8-2, 8-3, 8-4, 6-2 armored cable; 10-4, 8-2, and 8-3 armored lead cable.

2167-EZ \$15.22  $\frac{1}{8}$   $\frac{7}{8}$   $\frac{27}{32}$   $\frac{3}{4}$  100 25 20

Fits 14-10, 6-3, 6-4, 4-2, and 4-3 armored cable; 14-4, 12-3, 12-4, 10-2, 10-3, 10-4, 8-2, 8-3 armored lead cable; and  $\frac{3}{4}$ -inch flexible conduit.

2169-EZ \$24.56  $\frac{117}{32}$   $\frac{1}{8}$  1 1 25 5 10

Fits 1-inch flexible conduit.

## No. 2175-EZ National Box Connectors

### Duplex Type

Fits 14-2, 14-3, 12-2, and 4-1 armored cable; and  $\frac{3}{8}$ -inch flexible conduit. For use in taking two armored cables into one  $\frac{1}{2}$ -inch knockout; simply tightening two screws holds the cables firmly and securely in place.

With Bondnut; hinged strap fitting.

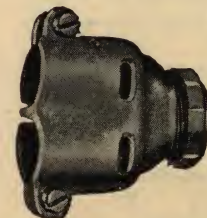
Galvanized finish.

Open i.d.,  $\frac{41}{64}$ -inch; closed i.d.,  $\frac{1}{2}$ -inch; wire throat,  $\frac{9}{32}$ -inch; k.o. size,  $\frac{1}{2}$ -inch.

Packed 100 in a standard package; 20 in carton.

Weight per standard package, 17 pounds.

No. 2175-EZ.....per 100 \$13.00





## Appleton Box Connectors

Schedule BC

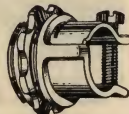
For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation, and 1947 Code Rubber Insulation  
Cadmium Finish



No. 7285-V



No. 7315-V



No. 7265-V



No. 7225-V



No. 7287-V

For use with: **Armored Cable 1947 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4, 10-2, 10-3, 10-4, 8-2, 8-3, 8-4, 6-2. **Armored Cable 1940 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4. **Flexible Steel Conduit:**  $\frac{3}{8}$ -inch.

No.	Size In.	Size K.O. In.	Approx. Opening In.	Approx. Closed In.	Diam. Bushed Hole In.	Car-ton	Std. Pkg.	Wt. Lb. per 1000
7285-V	$\frac{3}{8}$	$\frac{1}{2}$	.625	.250	$\frac{13}{32}$	100	1000	75
7315-V	$\frac{3}{8}$	$\frac{1}{2}$	.531	.250	$\frac{13}{32}$	100	1000	87
7265-V	$\frac{3}{8}$	$\frac{1}{2}$	.531	.373	$\frac{13}{32}$	100	1000	83
7225-V	$\frac{3}{8}$	$\frac{1}{2}$	.375	.375	$\frac{13}{32}$	100	1000	76

For use with: **Armored Cable 1940 Code:** 6-3, 6-4, 8-2L, 8-3L. **Flexible Steel Conduit:**  $\frac{1}{2}$  inch.

For use with: **Armored Cable 1940 Code:** 6-3, 6-4, 8-2L, 8-3L. **Flexible Steel Conduit:** 1 inch.

For use with: **Armored Cable 1940 Code:** 6-3, 6-4, 8-2L, 8-3L. **Flexible Steel Conduit:**  $\frac{1}{2}$  inch.

For use with: **Armored Cable 1940 Code:** 6-3, 6-4, 8-2L, 8-3L. **Flexible Steel Conduit:**  $\frac{3}{4}$  inch.

For use with: **Armored Cable 1940 Code:** 6-3, 6-4, 8-2L, 8-3L. **Flexible Steel Conduit:**  $\frac{3}{4}$  inch.

## No. 7260-V Appleton Box Connectors

Schedule BC

With Reversible Steel Clamp

Malleable Iron—Cadmium Finish



For No. 14-2, 14-3, 12-2 Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing, also No. 14-2 Standard Non-Metallic Sheathed Cable. Will also take rubber jacketed portable cords having an outside diameter of from  $\frac{5}{32}$  to  $\frac{21}{32}$  inch.

Reverse clamp for  $\frac{3}{16}$ -inch diameter ground wire.

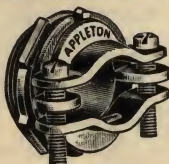
No.	Size Inches	Diam. Opening for Cable Inches	Diam. Bushed Hole Inches	Size K.O. Inches	Car-ton	Std. Pkg.	Wt. Lb. per 1000
7260-V	$\frac{3}{8}$	.500	$\frac{13}{32}$	$\frac{1}{2}$	100	1000	98

## Appleton Box Connectors

Schedule BC

For Larger Sizes of Non-Metallic Sheathed Cable

Cadmium Finish



No. 15233

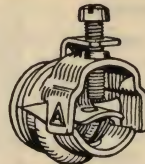
This connector will also take service entrance cable.

No.	Size K.O. In.	Approx. Opening In.	Approx. Closed In.	Wire Throat In.	Car-ton	Std. Pkg.	Wt., Lb. per 1000
15233	$\frac{3}{4}$	.750	.500	$\frac{3}{4}$	25	50	200
15234	1	.937	.750	$\frac{15}{16}$	10	20	300
15235	$1\frac{1}{4}$	1.375	.937	$1\frac{3}{8}$	10	20	270

## Appleton Box Connectors

Schedule BC

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing  
Cadmium Finish



No. 7300 Loxbox Type without Locknut

For use with: **1947 Code Non-Metallic Sheathed Cable:** 14-2, 14-3, 12-3, 12-3, 10-2, 10-3. **Standard Non-Metallic Sheathed Cable:** 14-2, 14-3.

No.	Size In.	Size K.O. In.	Approx. Opening In.	Approx. Closed In.	Wire Throat In.	Car-ton	Std. Pkg.	Wt., Lb. per 1000
7300	$\frac{3}{8}$	$\frac{1}{2}$	.656	.375	$\frac{19}{32}$	100	1000	62
7275	$\frac{3}{8}$	$\frac{1}{2}$	.656	.375	$\frac{19}{32}$	100	1000	73



No. 7275 Regular Type with Locknut

## No. 7286 Appleton Cord and Bare Armored Ground Wire Connectors

Schedule BC

Cadmium Finish



Designed to take rubber jacketed portable cords or any type of cable having an outside diameter of  $\frac{3}{16}$  to  $\frac{1}{2}$  inch. An ideal connector for use with bare armored ground wire. By removing the locknut it can be screwed into any  $\frac{1}{2}$ -inch conduit ground fitting.

No.	Size K.O. Inches	Approx. Opening Inches	Approx. Closed Inches	Car-ton	Std. Pkg.	Wt., Lb. per 1000
7286	$\frac{1}{2}$	.500	.187	50	1000	83

## Appleton 45 and 90-Degree Angle Box Connectors

Schedule BC

For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation and 1947 Code Rubber Insulation

Cadmium Finish



45-Degree Connector



90-Degree Connector



No. 7240-V

For use with: **Armored Cable 1947 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4, 10-2, 10-3, 10-4, 8-2, 8-3, 8-4, 6-2. **Armored Cable 1940 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4. **Flexible Steel Conduit:**  $\frac{3}{8}$  inch.

No.	Size In.	Size K.O. In.	Approx. Opening In.	Approx. Closed In.	Diam. Bushed Hole In.	Car-ton	Std. Pkg.	Wt. Lb. per 1000
7233-V	$\frac{3}{8}$	$\frac{1}{2}$	.625	.375	$\frac{13}{32}$	50	100	10
7234-V	$\frac{1}{2}$	$\frac{1}{2}$	.937	.500	$\frac{13}{32}$	50	100	17

For use with: **Armored Cable 1947 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4, 10-2, 10-3, 10-4, 8-2, 8-3, 8-4, 6-2. **Armored Cable 1940 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4. **Flexible Steel Conduit:**  $\frac{3}{8}$  inch.

For use with: **Armored Cable 1940 Code:** 6-3, 6-4, 8-2L, 8-3L. **Flexible Steel Conduit:**  $\frac{1}{2}$  inch.

For use with: **Armored Cable 1940 Code:** 6-3, 6-4, 8-2L, 8-3L. **Flexible Steel Conduit:**  $\frac{1}{2}$  inch.

For use with: **Armored Cable 1940 Code:** 6-3, 6-4, 8-2L, 8-3L. **Flexible Steel Conduit:**  $\frac{3}{4}$  inch.

For use with: **Armored Cable 1940 Code:** 6-3, 6-4, 8-2L, 8-3L. **Flexible Steel Conduit:**  $\frac{3}{4}$  inch.

For use with: **Armored Cable 1940 Code:** 6-3, 6-4, 8-2L, 8-3L. **Flexible Steel Conduit:**  $\frac{3}{4}$  inch.

## Duplex Connector—With Clamp

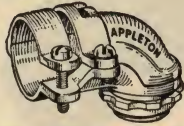
For use with: **Armored Cable 1947 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4, 10-2, 10-3, 10-4, 8-2, 8-3, 8-4, 6-2. **Armored Cable 1940 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4. **Flexible Steel Conduit:**  $\frac{3}{8}$  inch.

For use with: **Armored Cable 1940 Code:** 6-3, 6-4, 8-2L, 8-3L. **Flexible Steel Conduit:**  $\frac{3}{8}$  inch.



**Appleton 90-Degree Angle Box Connectors***Schedule BC*

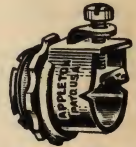
For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation and 1947 Code Rubber Insulation

**Cadmium Finish****No. 7380-V****Nos. 7381-V to 7386**For use with: **Armored Cable 1947 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4, 10-2, 10-3, 10-4, 8-2, 8-3, 8-4, 6-2. **Armored Cable 1940 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4. **Flexible Steel Conduit:** ½ inch.

No.	Size In.	Size K.O. In.	Approx. Opening In.	Approx. Closed In.	Bushed Hole In.	Car-ton	Std. Pkg.	Wt. Lb.
7380-V	¾	½	.656	.400	17/32	50	100	16
For use with: <b>Armored Cable 1940 Code:</b> 6-3, 6-4, 8-2L, 8-3L.								
Flexible Steel Conduit:	½ inch.							
7381-V	½	½	.937	.813	9/16	25	100	26
For use with: <b>Armored Cable 1940 Code:</b> 6-3, 6-4, 6-3L, 6-4L.								
Flexible Steel Conduit:	¾ inch.							
7382-V	¾	¾	1.125	.955	13/16	25	100	26
For use with: <b>Flexible Steel Conduit:</b> 1 inch.								
7383	1	1	1.406	1.250	1	5	25	25
For use with: <b>Flexible Steel Conduit:</b> 1¼ inch.								
7384	1¼	1¼	1.656	1.500	1¼	5	10	11
For use with: <b>Flexible Steel Conduit:</b> 1½ inch.								
7385	1½	1½	1.875	1.688	1½	5	10	17
For use with: <b>Flexible Steel Conduit:</b> 2 inch.								
7386	2	2	2.500	2.313	2	5	5	15

**Appleton Straight Box Connectors with Clamp***Schedule BC*

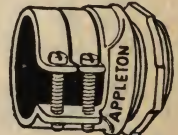
For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation, and 1947 Code Rubber Insulation

**Cadmium Finish****No. 7301 Loxbox Type without Locknut****No. 7230-V Regular Type with Locknut**For use with: **Armored Cable 1947 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4, 10-2, 10-3, 10-4, 8-2, 8-3, 8-4, 6-2. **Armored Cable 1940 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4. **Flexible Steel Conduit:** ½ inch.

No.	Size In.	Size K.O. In.	Approx. Opening In.	Approx. Closed In.	Bushed Hole In.	Car-ton	Std. Pkg.	Wt. Lb.
7301	¾	½	.656	.375	13/32	100	1000	62
7230-V	¾	½	.656	.375	13/32	100	1000	86
For use with: <b>Armored Cable 1940 Code:</b> 6-3, 6-4, 8-2L, 8-3L. <b>Flexible Steel Conduit:</b> ½ inch.								
7231-V	½	½	.938	.687	9/16	20	100	140
For use with: <b>Armored Cable 1940 Code:</b> 6-3, 6-4, 6-3L, 6-4L. <b>Flexible Steel Conduit:</b> ¾ inch.								
7312-V	¾	¾	1.062	.750	1¼	5	25	210
For use with: <b>Flexible Steel Conduit:</b> 1 inch.								
7313-V	1	1	1.312	1.000	1	5	25	320

**Appleton Large Size Squeeze Box Connectors***Schedule BC*

For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation and 1947 Code Rubber Insulation

**Cadmium Finish****Nos. 7480-V to 7484 With One Screw****Nos. 7485 to 7488 With Two Screws**

Made of heavy malleable iron, in sizes from ¾ to 3 inches, to take all sizes of armored cable, flexible metallic conduit and armored service entrance cable. Sizes 1½ to 3 inches are furnished with two screws, providing a double grip on the cable that eliminates any danger of the cable slipping out on short bends. Provided with E-Z-On locknuts.

For use with: **Armored Cable 1947 Code:** Nos. 14-2, 14-3, 14-4, 12-2, 12-3, 12-4, 10-2, 10-3, 10-4, 8-2, 8-3, 8-4, 6-2. **Armored Cable 1940 Code:** Nos. 14-2, 14-3, 14-4, 12-2, 12-3, 12-4. **Flexible Steel Conduit:** ½ inch.

No.	Size In.	Size K.O. In.	Approx. Opening In.	Approx. Closed In.	Bushed Hole In.	Car-ton	Std. Pkg.	Wt. Lb.
*7480-V	¾	½	.656	.563	17/32	20	100	11
For use with: <b>Armored Cable 1940 Code:</b> Nos. 6-3, 6-4, 8-2L, 8-3L. <b>Flexible Steel Conduit:</b> ¾ inch.								
*7481-V	½	½	.938	.813	9/16	25	100	15
For use with: <b>Armored Cable 1940 Code:</b> Nos. 6-3, 6-4, 6-3L, 6-4L. <b>Flexible Steel Conduit:</b> ¾ inch.								
*7482-V	¾	¾	1.125	.995	13/16	21	100	21

For use with: **Flexible Steel Conduit:** 1 inch.

7483 1 1 1.406 1.250 1 5 25 8

For use with: **Flexible Steel Conduit:** 1¼ inch.

7484 1¼ 1¼ 1.656 1.500 1¼ 5 10 5

For use with: **Flexible Steel Conduit:** 1½ inch.

7485 1½ 1½ 1.875 1.688 1½ 5 10 7

For use with: **Flexible Steel Conduit:** 2 inch.

7486 2 2 2.500 2.313 2 5 10 11

For use with: **Flexible Steel Conduit:** 2½ inch.

7487 2½ 2½ 3.000 2.813 2½ 5 5 9

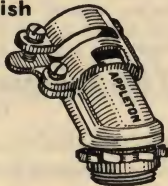
For use with: **Flexible Steel Conduit:** 3 inch.

7488 3 3 3.563 3.313 3 5 5 11

\*With peek-holes for anti-short bushing.

**Appleton 2-Piece 45-Degree Angle Box Connectors***Schedule BC*

For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation and 1947 Code Rubber Insulation

**Cadmium Finish****No. 7245-V****Nos. 7246-V and 7247-V**For use with: **Armored Cable 1947 Code:** 14-2, 14-3, 14-4, 12-2, 12-3, 12-4, 10-2, 10-3, 10-4, 8-2, 8-3, 8-4, 6-2. **Armored Cable 1940 Code:** 14-2, 14-3, 10-4, 12-2, 12-3, 12-4. **Flexible Steel Conduit:** ½ inch.

No.	Size In.	Size K.O. In.	Approx. Opening In.	Approx. Closed In.	Bushed Hole In.	Car-ton	Std. Pkg.	Wt. Lb.
7245-V	¾	½	.656	.400	17/32	50	100	16
For use with: <b>Armored Cable 1940 Code:</b> 6-3, 6-4, 8-2L, 8-3L.								
Flexible Steel Conduit:	½ inch.							
7246-V	½	½	.938	.813	9/16	25	100	24
For use with: <b>Armored Cable 1940 Code:</b> 6-3, 6-4, 6-3L, 6-4L.								
Flexible Steel Conduit:	¾ inch.							
7247-V	¾	¾	1.125	.955	13/16	10	50	22

**Appleton Set Screw Connectors***Schedule BC*

For Flexible Steel Conduit

**Cadmium Finish****No. 7251****No. 7252**

Made in ½ to 2-inch sizes. Set screw holds the flexible steel conduit very securely.

No.	Size In.	Size K.O. In.	Approx. Opening In.	Approx. Closed In.	Bushed Hole In.	Car-ton	Std. Pkg.	Wt. Lb.
7251	½	½	.938	.750	5/8	20	100	27
7252	¾	¾	1.125	1.000	¾	25	100	18
7253	1	1	1.406	1.250	1	5	25	11
7254	1¼	1¼	1.687	1.500	15/16	5	10	6
7255	1½	1½	2.000	1.750	1½	5	10	8
7256	2	2	2.437	2.187	2	5	10	11

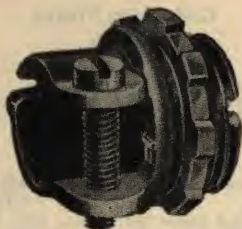


## T &amp; B Squeeze Connectors

Malleable Iron—Galvanized

For Flexible Steel Conduit and Armored Conductors

Approved by Underwriters' Laboratories



Locknuts are furnished with connectors without charge.  
Nos. 250 and 252 have  $\frac{3}{8}$ -inch (pipe size) threaded ends to fit standard sockets.

Nos. 250 and 250A hold 14D solid, 12D solid, 10D solid, 8D solid, 14D solid, 8D solid, 16E and 18E conductors.

No.	Per 100	Size In.	Size K.O. In.	Open I.D. In.	Closed I.D. In.	Throat Bushed Diam., In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
250	\$11.00	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{15}{32}$	$\frac{3}{8}$	$\frac{5}{16}$	100	100	4
*250A	12.50	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{15}{32}$	$\frac{11}{32}$	$\frac{3}{8}$	50	100	6
Nos. 252 and 252A hold $\frac{5}{16}$ -inch flexible conduit.									
252	\$11.00	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{7}{16}$	$\frac{3}{8}$	100	100	4
*252A	12.50	$\frac{5}{16}$	$\frac{1}{2}$	$\frac{17}{32}$	$\frac{7}{16}$	$\frac{3}{8}$	50	100	6
*Have No. 400 adapter to fit standard $\frac{1}{2}$ -inch knockout.									
No. 253 holds 14W2, 12W2, 14W3, 6D solid, 14E, 14W2L, 18EM, 16EM; $\frac{3}{8}$ -inch conduit.									
253	\$7.50	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{19}{32}$	$\frac{1}{2}$	$\frac{7}{16}$	50	1000	8
No. 248V holds 10W2, 12W3, 10W3.									
248V	\$7.50	$\frac{3}{8}$ L	$\frac{1}{2}$	$\frac{21}{32}$	$\frac{9}{16}$	$\frac{1}{2}$	50	1000	8
Nos. 260V holds 8W2, 8W3, 10W2, 10W3.									
260V	\$9.00	$\frac{3}{4}$ A	$\frac{1}{2}$	$\frac{13}{16}$	$\frac{11}{16}$	$\frac{9}{16}$	50	100	12
No. 254V holds 8W3, $\frac{1}{2}$ -inch flexible conduit.									
254V	\$9.00	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{15}{16}$	$\frac{13}{16}$	$\frac{13}{16}$	50	100	13
No. 278V holds armored conductors 6W2, 6W3.									
278V	\$15.00	$\frac{3}{4}$ S	$\frac{3}{4}$	1	$\frac{7}{8}$	$\frac{3}{4}$	25	100	20
No. 255V holds 4W2, 6W3, $\frac{3}{4}$ -inch conduit.									
255V	\$15.00	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{15}{16}$	$\frac{3}{4}$	25	100	21
No. 256V holds 1-inch conduit.									
256V	\$25.00	1	1	$\frac{13}{8}$	$\frac{11}{4}$	1	25	25	25
No. 261V holds 1-inch conduit.									
261V	\$25.00	1	1	$\frac{117}{32}$	$\frac{13}{8}$	1	25	25	30
No. 264V holds 4W3, 2W2, 6W2L, 6W3L, 4W2L, 4W3L.									
264V	\$25.00	1S	1	$\frac{11}{4}$	$\frac{13}{8}$	1	25	25	26
No. 257 holds $\frac{1}{4}$ -inch conduit.									
257	\$35.00	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{12}{32}$	$\frac{11}{2}$	$\frac{15}{16}$	10	10	40
No. 258 holds $\frac{1}{2}$ -inch conduit.									
258	\$50.00	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{17}{8}$	$\frac{11}{4}$	$\frac{11}{2}$	10	10	65
No. 259 holds 2-inch conduit.									
259	\$75.00	2	2	$\frac{21}{2}$	$\frac{25}{16}$	2	10	10	90
No. 249 holds $\frac{2}{2}$ -inch conduit.									
249	\$100.00	$\frac{2}{2}$	$\frac{2}{2}$	3	$\frac{21}{16}$	$\frac{23}{8}$	5	5	148
No. 277 holds 3-inch conduit.									
277	\$125.00	3	3	$\frac{39}{16}$	$\frac{35}{16}$	3	5	5	180

## No. 239 T&amp;B Duplex Connectors

Approved by Underwriters' Laboratories



Designed to accommodate two armored cables in the same knockout to save labor, time, and materials. The fitting has a single opening. Both cables are securely wedged in place by a single screw.

Will hold 14-2, 14-3, 12-2, and  $\frac{3}{8}$ -inch flexible conduit.

Made of malleable iron, Tabolite plated.

Trade Size Inches	No.	Per 100	Approx. Open. Inches	Approx. Closed. Inches	Throat Bushed Diam. Inches	Car-ton	Std. Pkg.	Wt., Lb. per 100
$\frac{3}{8}$	239V	\$10.00	.594	.468	$\frac{19}{32}$	25	100	15

## T &amp; B 45° and 90° Squeeze Connectors

Approved by Underwriters' Laboratories



Malleable Iron—Galvanized For Flexible Steel Conduit and Armored Conductors

Removable cap eliminates fishing wires and enables one to make a quick and sure connection.

Locknuts are furnished.

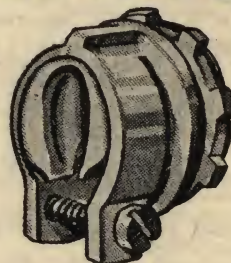
Nos. 265, 4466, and 266 hold 14-2, 14-3, 12-2; lead 14-2;  $\frac{3}{8}$ -inch flexible conduit and others.

No.	Per 100	Trade Size Inches	Size K.O. Inches	Approx. Open. Inches	Approx. Closed. Inches	Throat Bushed Diam. Inches	Car-ton	Std. Pkg.	Wt., Lb. per 100
265	\$16.00	$\frac{3}{8}$ -45°	$\frac{1}{2}$	.625	.500	$\frac{9}{16}$	50	100	14
4466	16.00	$\frac{3}{8}$ -90°	$\frac{1}{2}$	.625	.500	$\frac{9}{16}$	50	100	16
266	16.00	$\frac{3}{8}$ -90°	$\frac{1}{2}$	.625	.500	$\frac{9}{16}$	50	100	16
No. 272V holds 12-4, 10-2, 10-3; lead 12-2, 12-3, 10-2; and others.									
272V	20.00	$\frac{3}{8}$ A-90°	$\frac{1}{2}$	.813	.688	$\frac{9}{16}$	25	100	15
Nos. 267V and 268V hold 10-4, 8-2; lead 10-3; $\frac{1}{2}$ -inch flexible conduit; and others.									
267V	20.00	$\frac{1}{2}$ -45°	$\frac{1}{2}$	.938	.813	$\frac{9}{16}$	25	100	22
268V	20.00	$\frac{1}{2}$ -90°	$\frac{1}{2}$	.938	.813	$\frac{9}{16}$	25	100	22
No. 268V8 holds 8-2, 8-3; lead 10-3; $\frac{1}{2}$ -inch flexible conduit; and others.									
268V8	20.00	$\frac{1}{2}$ -90°	$\frac{1}{2}$	.938	.813	$\frac{21}{32}$	25	100	21
No. 279V holds 8-2, 8-3, 6-2; lead 8-2, 8-3; and others.									
279V	40.00	$\frac{3}{4}$ S-90°	$\frac{3}{4}$	1.000	.875	$\frac{3}{4}$	25	50	25
Nos. 269V and 270V hold 6-2, 6-3, 4-2; lead 6-2, 6-3; $\frac{3}{4}$ -inch flexible conduit; and others.									
269V	40.00	$\frac{3}{4}$ -45°	$\frac{3}{4}$	1.125	1.000	$\frac{25}{32}$	25	50	25
270V	40.00	$\frac{3}{4}$ -90°	$\frac{3}{4}$	1.125	1.000	$\frac{25}{32}$	25	50	25
No. 273V holds 1-inch flexible conduit.									
273V	60.00	1-90°	1	1.406	1.187	1	10	25	50
No. 274 holds $\frac{1}{4}$ -inch flexible conduit.									
274	75.00	$\frac{1}{4}$ -90°	$\frac{1}{4}$	1.656	1.375	$\frac{1}{4}$	5	10	100
No. 275 holds $\frac{1}{2}$ -inch flexible conduit.									
275	100.00	$\frac{1}{2}$ -90°	$\frac{1}{2}$	1.875	1.625	$\frac{1}{2}$	5	10	165
No. 276 holds 2-inch flexible conduit.									
276	150.00	2-90°	2	2.500	2.125	2	2	5	250

## T&amp;B Squeeze Type Non-Watertight Connectors

For Non-Metallic Sheathed Cable and Flexible Tubing

Approved by Underwriters' Laboratories



PATENTED

Has an insert so held in place that it cannot accidentally be displaced but it can readily be removed without taking out the screw. The insert is so designed that the non-metallic flexible cable is held in the center of the connector so that when the strap is tightened down no sharp curve or bend is put in the conductor.

The insert presents a long bearing surface to the conductor. Connectors have threaded ends and are supplied with locknuts.

Connector is made of malleable iron. insert of steel, plated with Tabolite galvanizing.

No.	Per 100	K.O. Inches	—MADE TO HOLD— With Insert	Insert Removed	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
2005	\$8.50	$\frac{1}{2}$	{14W2 12W2}	{14W3 12W3}	100	1000	8
2006	20.00	$\frac{1}{2}$	10W2	10W3	50	100	13
2007	30.00	$\frac{3}{4}$	10W2	10W3	25	50	15
2008	30.00	$\frac{3}{4}$	8W2	8W3	25	50	15
2009	45.00	1	6W2	6W3	10	20	20



**T&B Straight Tite-Bite Connectors**

PATENTED  
For Armored Cable and Flexible Conduit  
Approved by Underwriters' Laboratories



Made of malleable iron, Tabolite plated.

No. 300V holds 14-2, 14-3, 14-4, 12-2, 12-3, 10-2, 4-1, 6-1; lead 14-2, 14-3, 6-1;  $\frac{3}{8}$ -inch flexible conduit; and others.

No.	Per 100	Trade Size Inches	Size K.O. Inches	Approx. Open. Inches	Approx. Closed Inches	Throat Bushed Diam. Inches	Car-ton	Std. Pkg.	Wt. Lb. per 100
300V	\$7.50	$\frac{3}{8}$	$\frac{1}{2}$	.656	.437	$\frac{1}{2}$	100	1000	8
No. 301V holds 14-4, 12-2, 12-3, 10-2, 4-1; and others.									
301V	9.00	$\frac{3}{8}$ A	$\frac{1}{2}$	.781	.625	$\frac{19}{32}$	50	100	15
No. 302V holds 10-4, 8-2; lead 10-3; $\frac{1}{2}$ -inch flexible conduit; and others.									
302V	9.00	$\frac{1}{2}$	$\frac{1}{2}$	.937	.750	$\frac{19}{32}$	50	100	15
No. 302V8 holds 10-4, 8-2, 8-3; lead 10-3; $\frac{1}{2}$ -inch flexible conduit; and others.									
302V8	9.00	$\frac{1}{2}$	$\frac{1}{2}$	.937	.750	$\frac{21}{32}$	50	100	15
No. 303V holds 8-2, 8-3, 6-2; lead 8-2, 8-3; and others.									
303V	15.00	$\frac{3}{4}$ S	$\frac{3}{4}$	1.000	.812	$\frac{49}{64}$	25	100	18
No. 304V holds 6-2, 6-3, 4-2; lead 6-2, 6-3; $\frac{3}{4}$ -inch flexible conduit; and others.									
304V	15.00	$\frac{3}{4}$	$\frac{3}{4}$	1.093	.906	$\frac{49}{64}$	25	100	20
No. 305V holds 6-2, 6-3, 4-2, 4-3; lead 6-2, 6-3, 4-2; and others.									
305V	25.00	1S	1	1.063	.875	$\frac{7}{8}$	5	25	17
No. 306V holds 2-2; lead 4-3; 1-inch flexible conduit; and others.									
306V	25.00	1	1	1.468	1.250	1	5	25	40
No. 308 holds $\frac{1}{4}$ -inch flexible conduit.									
308	35.00	$\frac{1}{4}$	$\frac{1}{4}$	1.750	1.562	$\frac{1}{4}$	5	10	60
No. 310 holds $\frac{1}{2}$ -inch flexible conduit.									
310	50.00	$\frac{1}{2}$	$\frac{1}{2}$	2.031	1.812	$\frac{1}{2}$	5	10	100
No. 312 holds 2-inch flexible conduit.									
312	75.00	2	2	2.500	2.312	2	5	10	130
No. 314 holds 2 $\frac{1}{2}$ -inch flexible conduit.									
314	100.00	2 $\frac{1}{2}$	2 $\frac{1}{2}$	3.000	2.812	2 $\frac{1}{2}$	2	5	220
No. 316 holds 3-inch flexible conduit.									
316	150.00	3	3	3.562	3.312	3	2	5	260

**T&B 90° Angle Tite-Bite Connectors**

PATENTED

For Armored Cable and Flexible Conduit

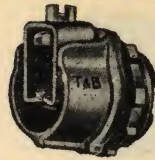
Approved by Underwriters' Laboratories



No.	Per 100	Trade Size Inches	Size K.O. Inches	Approx. Open. Inches	Approx. Closed Inches	Throat Bushed Diam. Inches	Car-ton	Std. Pkg.	Wt. Lb. per 100
No. 321V holds 14-2, 14-3, 14-4, 12-2, 12-3, 10-2, 4-1, 6-1; lead 14-2, 14-3, 6-1; $\frac{3}{8}$ -inch flexible conduit; and others.									
321V	\$16.00	$\frac{3}{8}$	-90° $\frac{1}{2}$	.656	.437	$\frac{1}{2}$	50	100	20
No. 321V holds 14-2, 14-3, 14-4, 12-2, 12-3, 10-2, 4-1, 6-1; lead 14-2, 14-3, 6-1; $\frac{3}{8}$ -inch flexible conduit; and others.									
321V	16.00	$\frac{3}{8}$	-90° $\frac{1}{2}$	.656	.437	$\frac{1}{2}$	50	100	20
No. 322V holds 14-4, 12-2, 12-3, 12-4, 10-2, 10-3; lead 12-2, 12-3, 10-2, 4-1; and others.									
322V	20.00	$\frac{3}{8}$ A	-90° $\frac{1}{2}$	.781	.625	$\frac{17}{32}$	50	100	25
No. 323V holds 10-4, 8-2; lead 10-3; $\frac{1}{2}$ -inch flexible conduit; and others.									
323V	20.00	$\frac{1}{2}$	-90° $\frac{1}{2}$	.937	.750	$\frac{19}{32}$	25	100	27
No. 323V8 holds 10-4, 8-2, 8-3; lead 10-3; $\frac{1}{2}$ -inch flexible conduit; and others.									
323V8	20.00	$\frac{1}{2}$	-90° $\frac{1}{2}$	.937	.750	$\frac{21}{32}$	25	100	26
No. 324V holds 8-2, 8-3, 6-2; lead 8-2, 8-3; and others.									
324V	40.00	$\frac{3}{4}$ S	-90° $\frac{3}{4}$	1.000	.812	$\frac{49}{64}$	25	50	32
No. 325V holds 6-2, 6-3, 4-2; lead 6-2, 6-3; $\frac{3}{4}$ -inch flexible conduit; and others.									
325V	40.00	$\frac{3}{4}$	-90° $\frac{3}{4}$	1.093	.906	$\frac{49}{64}$	25	50	34
No. 326 $\frac{1}{2}$ V holds 6-2, 6-3, 4-2, 4-3; lead 6-2, 6-3, 4-2; and others.									
326 $\frac{1}{2}$ V	40.00	1S	-90° 1	1.063	.875	$\frac{7}{8}$	5	25	60
No. 326V holds 2-2; lead 4-3; 1-inch flexible conduit; and others.									
326V	60.00	1	-90° 1	1.468	1.250	1	5	25	60
No. 327 holds $\frac{1}{4}$ -inch flexible conduit.									
327	75.00	$\frac{1}{4}$	-90° $\frac{1}{4}$	1.750	1.562	$\frac{1}{4}$	5	10	120
No. 328 holds $\frac{1}{2}$ -inch flexible conduit.									
328	100.00	$\frac{1}{2}$	-90° $\frac{1}{2}$	2.031	1.812	$\frac{1}{2}$	5	10	165
No. 329 holds 2-inch flexible conduit.									
329	150.00	2	-90° 2	2.500	2.312	2	2	5	250
No. 330 holds 2 $\frac{1}{2}$ -inch flexible conduit.									
330	225.00	2 $\frac{1}{2}$	-90° 2 $\frac{1}{2}$	3.000	2.812	2 $\frac{1}{2}$	2	5	500
No. 331 holds 3-inch flexible conduit.									
331	300.00	3	-90° 3	3.562	3.312	3	2	5	650

**T&B Tite-Bite Connectors**

PATENTED  
For Armored and Non-Metallic Sheathed Cable  
Approved by Underwriters' Laboratories



Designed to hold non-metallic sheathed cable without cutting the fabric of the cable sheath.

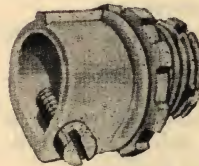
No. 3100 takes non-metallic sheathed cable sizes 14W2, 14W3, 12W2, 12W3, and 10W2.

No. 3101 takes non-metallic sheathed cable sizes 14W2, 14W3, 12W2, 12W3, and 10W2; also all  $\frac{3}{8}$ -inch sizes of armored cable, 14-2, 14-3, 14-4, 12-2, 12-3, 10-2, 8-1, 6-1, 4-1; lead 14-2, 14-3, 6-1;  $\frac{3}{8}$ -inch flexible conduit; and others.

No.	Per 100	Size K.O. Inches	Approx. Open. Inches	Approx. Closed Inches	Throat Bushed Diam. Inches	Car-ton	Std. Pkg.	Wt. Lb. per 100
3100	\$7.50	$\frac{1}{2}$	.656	.300	$\frac{19}{32}$	100 or 500	1000	9
3101	7.50	$\frac{1}{2}$	.656	.188	$\frac{1}{2}$	100 or 500	1000	9

**T&B Inclined Set-Screw Connectors**

Approved by Underwriters' Laboratories



The screw is on the right-hand side making it easy to tighten.

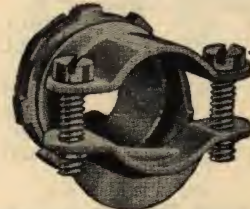
No. 240V is made of steel and holds 14-2, 14-3, 14-4, 12-2, 12-3, 10-2; lead 14-2, 14-3;  $\frac{3}{8}$ -inch flexible conduit; and others.

No. 241V is made of malleable iron and takes 8-2; lead 10-3;  $\frac{1}{2}$ -inch flexible conduit; and others.

No.	Per 100	Trade Size Inches	Size K.O. Inches	Approx. Open. Inches	Approx. Closed Inches	Throat Bushed Diam. Inches	Car-ton	Std. Pkg.	Wt. Lb. per 100
240V	\$7.50	$\frac{3}{8}$	$\frac{1}{2}$	.594	.500	$\frac{7}{16}$	100	1000	6
241V	9.00	$\frac{1}{2}$	$\frac{1}{2}$	.920	.750	$\frac{1}{2}$	50	100	15

**T&B 2-Screw Connectors**

Approved by Underwriters' Laboratories



Precision made. All edges are rounded. No sharp burrs to harm conductors. The screws thread into the saddle, not the body. Made of steel, protected from corrosion with silvery Tabolite galvanizing.

No. 3301V fits any type cable: Armored Cable 14-2, 14-3, 14-4, 12-2, 12-3, 10-2, 8-1, (insul.) 6-1, 4-1; Flexible Conduit  $\frac{3}{8}$ -inch,  $\frac{1}{2}$ -inch; Non-Metallic Cable 14-2, 14-3, 12-2, 12-3, 10-2; Service Entrance Cable 12-2, 12-3, 10-2, 8-2, 4-2; or any cable .310 to .650-inch diameter.

No. 3302 fits non-metallic sheathed cables: Non-Metallic Cable 14-2, 14-3, 12-2, 12-3, 10-2; Service Entrance Cable 12-2, 12-3, 10-2, 8-2, 6-2, 4-2; or any non-metallic cable .310 to .650-inch diameter.

No. 3303 fits non-metallic sheathed cables: Non-Metallic Cable 12-3, 12-3, 10-3, 8-2; Service Entrance Cable 10-3, 8-3, 6-2, 6-3, 4-2, 2-2; or any non-metallic cable .450 to .760-inch diameter.

No. 3304 fits non-metallic sheathed cables: Non-Metallic Cable 6-2, 4-2; Service Entrance Cable 8-3, 6-3, 4-3; or any non-metallic cable .530 to .950-inch diameter.

No.	Per 100	Size In.	INSIDE DIAM. INCHES		Throat Bushed Diam. Inches	K.O. Inches	Std. Pkg.	Wt. Lb. per 100
			Open	Closed				
3301V	\$7.50	$\frac{3}{8}$	.650	.310	.440	$\frac{1}{2}$	1000	6
3302	7.50	$\frac{3}{8}$	.650	.310	.650	$\frac{1}{2}$	1000	6
3303	15.00	$\frac{3}{4}$	.760	.450	.719	$\frac{3}{4}$	100	20
3304	25.00	1	.950	.530	.970	1	25	34



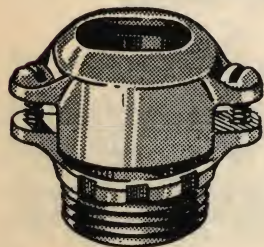
## No. 3300 T&amp;B 2-Screw Connectors



This small, compact connector is suited for use with bare armored ground wire (8-1, 6-1 or 4-1). It will also take rubber jacketed portable cords or any type of cable having an outside diameter of  $\frac{3}{16}$  to  $\frac{1}{2}$  inch.

No.	Per 100	K.O. In.	Approx. Opening Inches	Approx. Closed Inches	Unit Quan.	Std. Pkg.	Wt. Lb. per 100
3300	\$7.50	$\frac{1}{2}$	.500	.188	100	1000	8

## T&amp;B Watertight Box Connectors



## Two-Screw Type

Approved by Underwriters' Laboratories

Easily tightened on the cable by the two screws.

Cap gives maximum protection to the rubber bushing.

Made of malleable iron. Cap is hot dip galvanized finish; body Tabolite finish.

Carton, 10.

Standard package, 100.

CONNECTOR No. 1-Inch Thread	No. 1-Inch Thread
2401A	2402A
2401B	2402B
....	2402C
....	2402D

CABLE SIZE, INCHES	Maximum O.D.	Minimum O.D.
.525	.760	.430

.580	.760	.500	.680
.640	.880	.555	.810
.705	.960	.625	.875

CABLE SIZES	Armored	Unarmored	Drop
2W8, 2W6	2W8, 2W6	2W8 or 2W6	3W8 or 3W6
3W8	3W8	3W8 or 3W6	3W4
3W6	3W6	3W4	...
3W4	3W4	...	...

## Round

Conduit Size Inches

$\frac{3}{4}$

1

$\frac{3}{4}$

1

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## No. 2020 T&amp;B Connectors

PATENT PENDING

Approved by Underwriters' Laboratories



Pinch sides of connector and it will snap into the knockout hole—inside or outside the box. Grooves hold it in place.

To fasten the cable turn down the screw. Clamp forces cable against walls of connector and they expand, tightly gripping knockout so that connector cannot pull out. Screw cannot touch the cable.

No rough edges or projections to cut into fiber armor, and connector protects fiber from the rough edges of the knockout opening. Long, rounded bearing surfaces eliminate possibility of injury to cable. Rounded shoulders are presented to conductors as they are bent up to the outlet.

Made to hold non-metallic cable 14-2, 14-3, 12-2, 12-3, 10-2, 10-3; and others.

No.	Per 100	Size K.O. Inches	Approx. Open Inches	Approx. Closed Inches	Car-ton	Std. Pkg.	Wt. Lb. per 100
2020	\$7.50	$\frac{1}{2}$	.625	.310	100	1000	3

## T&amp;B Watertight Box Connectors

## Hex Gland Type

Approved by Underwriters' Laboratories

For Use with Service Entrance Cable



Malleable iron, Tabolite finish.

## For Round Cable

CABLE SIZE, INCHES	Maximum O.D.	Minimum O.D.	Hub Thread Size Inches	No.	Per 100	Wt. Lb. per 100	Aluminum	Per 100	Wt. Lb. per 100	Car-ton	Std. Pkg.
.315	.270	$\frac{1}{2}$	2100	\$28.00	18	2150	\$75.00	13	10	100	100
		$\frac{3}{4}$	2200	28.00	20	2250	75.00	15	10	100	100
		1	2300	40.00	22	2350	90.00	17	10	100	100
.360	.300	$\frac{1}{2}$	2101	28.00	18	2151	75.00	13	10	100	100
		$\frac{3}{4}$	2201	28.00	20	2251	75.00	15	10	100	100
		1	2301	40.00	22	2351	90.00	17	10	100	100
.405	.355	$\frac{1}{2}$	2102	28.00	18	2152	75.00	13	10	100	100
		$\frac{3}{4}$	2202	28.00	20	2252	75.00	15	10	100	100
		1	2302	40.00	22	2352	90.00	17	10	100	100
.455	.400	$\frac{1}{2}$	2103	28.00	18	2153	75.00	13	10	100	100
		$\frac{3}{4}$	2203	28.00	20	2253	75.00	15	10	100	100
		1	2303	40.00	22	2353	90.00	17	10	100	100
.505	.450	$\frac{1}{2}$	2104	28.00	18	2154	75.00	13	10	100	100
		$\frac{3}{4}$	2204	28.00	20	2254	75.00	15	10	100	100
		1	2304	40.00	22	2354	90.00	17	10	100	100
.560	.500	$\frac{1}{2}$	2105	28.00	18	2155	75.00	13	10	100	100
		$\frac{3}{4}$	2205	28.00	20	2255	75.00	15	10	100	100
		1	2305	40.00	22	2355	90.00	17	10	100	100
.625	.555	$\frac{3}{4}$	2206	28.00	20	2256	75.00	15	10	100	100
		1	2306	40.00	22	2356	90.00	17	10	100	100
.685	.620	$\frac{3}{4}$	2207	28.00	20	2257	75.00	15	10	100	100
		1	2307	40.00	22	2357	90.00	17	10	100	100
.750	.680	$\frac{3}{4}$	2208	28.00	20	2258	75.00	15	10	100	100
		1	2308	40.00	22	2358	90.00	17	10	100	100
.820	.745	1	2320	40.00	22	2370	90.00	17	10	100	100
.885	.815	1	2321	40.00	22	2371	90.00	17	10	100	100
.940	.870	1	2322	40.00	22	2372	90.00	17	10	100	100
.960	.880	$1\frac{1}{4}$	2346	110.00	27	2396	130.00	22	5	50	50
.980	.910	1	2323	40.00	22	2373	90.00	17	10	100	100
1.055	.955	$1\frac{1}{4}$	2340	110.00	27	2390	130.00	22	5	50	50
1.125	1.050	$1\frac{1}{4}$	2347	110.00	27	2397	130.00	22	5	50	50
1.170	1.120	$1\frac{1}{4}$	2341	110.00	27	2391	130.00	22	5	50	50
1.200	1.150	$1\frac{1}{4}$	2348	110.00	27	2398	130.00	22	5	50	50

## For Oval Cable

CABLE SIZE, INCHES	Maximum O.D.	Minimum O.D.	Hub Thread Size Inches	No.	Per 100	Wt. Lb. per 100	Aluminum	Per 100	Wt. Lb. per 100	Car-ton	Std. Pkg.
.250x.440	.210x.400	$\frac{1}{2}$	2116	\$28.00	18	2166	\$75.00	13	10	100	100
		$\frac{3}{4}$	2216	28.00	20	2266	75.00	15	10	100	100
		1	2316	40.00	22	2366	90.00	17	10	100	100
.420x.560	.380x.520	$\frac{1}{2}$	2111	28.00	18	2161	75.00	13	10	100	100
		$\frac{3}{4}$	2211	28.00	20	2261	75.00	15	10	100	100
		1	2311	40.00	22	2361	90.00	17	10	100	100
.470x.620	.420x.560	$\frac{3}{4}$	2212	28.00	20	2262	75.00	15	10	100	100
		1	2312	40.00	22	2362	90.00	17	10	100	100
.470x.680	.420x.620	$\frac{3}{4}$	2213	28.00	20	2263	75.00	15	10	100	100
		1	2313	40.00	22	2363	90.00	17	10	100	100
.530x.730	.470x.680	$\frac{3}{4}$	2214	28.00	20	2264	75.00	15	10	100	100
		1	2314	40.00	22	2364	90.00	17	10	100	100
.580x.800	.530x.730	$\frac{3}{4}$	2215	28.00	20	2265	75.00	15	10	100	100
		1	2315	40.00	22	2365	90.00	17	10	100	100
.580x.860	.530x.800	1	2325	40.00	22	2375	90.00	17	10	100	100
.630x.910	.570x.850	1	2326	40.00	22	2376	90.00	17	10	100	100
.670x.970	.620x.900	1	2327	40.00	22	2372	90.00	17	10	100	100
.700x1.090	.660x.960	$1\frac{1}{4}$	2342	110.00	27	2392	130.00	22	5	50	50
.750x1.150	.690x1.060	$1\frac{1}{4}$	2343	110.00	27	2393	130.00	22	5	50	50



## Appleton Watertight Connectors

Schedule OF

## Two-Screw Type

## Nut Types



Round



Oval



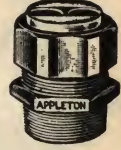
2-Hole



Round



Oval



2-Hole

The 2-screw type connectors are made from non-ferrous metal; will not rust.  
The nut type connectors are of malleable iron, cadmium finish.

2-Screw Type			Nut Type			SIZE OF CABLE		Underwriters' Cable Type	Carton	Standard Package
No.	Wt., Lb. Std. Pkg.	No.	Wt., Lb. Std. Pkg.	Size Inches	Size of Opening for Cable	Insulated Con.	Bare Neutral			
25501	26	25278	..	3/4	Round 3/8"	1-14	1-14	SD	50	100
25502	26	25279	..	1	Round 3/8"	1-12	1-12	SD	50	100
						1-10	1-10	SD		
						1-12	1-12	SE		
25506	27	25280	18	3/4	Round 7/16"	1-10	1-10	SE	50	100
25507	27	25223	30	1	Round 7/16"	1-8	1-10	SD	50	100
						1-8	1-8	SD		
						1-8	1-10	SE		
25511	27	25281	16	3/4	Round 15/32"	1-8	1-8	SE	50	100
25512	27	25255	30	1	Round 15/32"	1-6	1-8	SD	50	100
						1-6	1-6	SD		
25516	27	25215	16	3/4	Round 9/16"	1-6	1-8	SE	50	100
25517	27	25402	31	1	Round 9/16"	1-6	1-6	SD	50	100
						1-4	1-6	SD		
						1-4	1-6	SE		
25521	25	25419	30	3/4	Round 21/32"	1-4	1-4	SE	50	100
25522	25	25217	..	1	Round 21/32"	1-2	1-4	SD	50	100
						1-2	1-2	SD		
						1-2	1-4	SE		
						1-2	1-2	SE		
25526	25	25284	16	3/4	Round 3/4"	1-1	1-1	SE	50	100
25527	26	25225	30	1	Round 3/4"	2-12	1-12	ASE	50	100
						2-14	....	USE		
						3-14	....	USE		
25555	30	25227	47	1 1/4	Round 1 1/32"	2-8	1-8	ASE	5	50
25556	30	25228	47	1 1/4	Round 1 1/32"	2-6	1-8	ASE	5	50
						2-6	1-6	ASE		
25557	23	25429	27	1 1/4	Round 1 1/32"	2-4	1-6	ASE	5	50
						2-4	1-4	ASE		
25558	23	25401	27	1 1/4	Round 1 11/32"	2-2	1-4	ASE	5	50
						2-2	1-2	ASE		
25531	26	25285	16	3/4	Oval 7/16x9/16"	2-12	1-12	SE & SD	50	100
25532	26	25224	30	1	Oval 7/16x9/16"	2-10	1-12	SE & SD	50	100
						2-10	1-10	SD		
25536	26	25413	27	3/4	Oval 17/32x25/32"	2-10	1-10	SE	50	100
25537	26	25412	27	1	Oval 17/32x25/32"	2-8	1-10	SE & SD	50	100
						2-8	1-8	SD		
						2-8	1-8	SE		
25542	26	25211	27	1	Oval 5/8x7/8"	2-6	1-8	SE & SD	50	100
						2-6	1-6	SE & SD		
25547	25	25212	27	1	Oval 11/16x63/64"	2-4	1-6	SE & SD	50	100
						2-4	1-4	SE & SD		
25552	..	25270	27	1	Two 7/16" Round Holes	1-12	1-12	SE	50	100
						1-10	1-10	SE		
						1-8	1-10	SD		
						1-8	1-8	SD		
25560	26	25423	25	1 1/4	Oval 13/16x1 1/8"	2-2	1-4	SE & SD	5	50
						2-2	1-2	SE & SD		
25561	26	25424	25	1 1/4	Oval 13/16x1 3/32"	2-1	1-3	SE & SD	5	50
						2-1	1-1	SE & SD		
25562	26	25425	25	1 1/4	Two 15/32" Round Holes	1-10	1-10	SE & SD	5	50
						1-8	1-10	SE & SD		
						1-8	1-8	SE & SD		

For Nos. 10 and 8, 5-Conductor, 4 Insulated and 1 Bare, Entrance Cable

No.	BUSHINGS, INCHES		Size Inches	Carton	Std. Pkg.
	Maximum	Minimum			
25226	61/64	59/64	1	10	100
For No. 6, 5-Conductor, 4 Insulated and 1 Bare, Entrance Cable					
25229	63/64	57/64	1	10	100
With 2-Hole Bushing for Round Cable					
25271	1 1/32	7/16	1	10	100

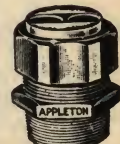
For Round Armored Service Entrance Cable

Used where it is necessary to ground the armored sheathing of the cable.

No.	Fits Cables	Size Inches	Carton	Std. Pkg.
15258	2 or 3 Cond. No. 8	3/4	10	100
15221	2 or 3 Cond. No. 6	1	5	50
15222	2 or 3 Cond. No. 4	1	5	50



No. 25226



No. 25271



## Ideal Fish Tape, Reels and Pullers



Three tools in one: a reel, a puller and a tape. Tape is pulled through the conduit and reeled in one operation; reel automatically locks tape in place. By keeping the tape reeled up, it is prevented from spreading all over the job, avoiding breakage and possibility of tape contacting live parts.

No.	Each	Tape Length Feet	Tape Size Inches
31-007	\$1.91	50	$\frac{1}{8}$ x.045 ( $\frac{3}{64}$ )
31-008	3.18	50	$\frac{1}{8}$ x.060 ( $\frac{1}{16}$ )
31-009	6.22	100	$\frac{1}{8}$ x.060 ( $\frac{1}{16}$ )
31-010	6.85	100	$\frac{3}{16}$ x.060 ( $\frac{1}{16}$ )
31-011	7.49	100	$\frac{1}{4}$ x.060 ( $\frac{1}{16}$ )
31-012	6.22	100	$\frac{1}{8}$ x.030 ( $\frac{1}{32}$ )
31-013	6.22	100	$\frac{3}{16}$ x.030 ( $\frac{1}{32}$ )
31-014	6.22	100	$\frac{1}{4}$ x.030 ( $\frac{1}{32}$ )
31-016	9.18	200	$\frac{1}{8}$ x.060 ( $\frac{1}{16}$ )

## Ideal Fish Tapes

Ideal Fish Tape is made of the highest grade of tempered spring steel wire—no curling. Tape is flexible and easy to use on long runs of conduit having several bends.

All sizes are available in any length, multiples of 50 feet.

Packed in individual cartons.



No.	Per 100 Ft.	Tape Size Inches
31-057	\$1.60	$\frac{1}{8}$ x.030 ( $\frac{1}{32}$ )
31-064	2.19	$\frac{3}{16}$ x.030 ( $\frac{1}{32}$ )
31-071	2.39	$\frac{1}{4}$ x.030 ( $\frac{1}{32}$ )
31-036	2.19	$\frac{1}{8}$ x.060 ( $\frac{1}{16}$ )
31-043	2.88	$\frac{3}{16}$ x.060 ( $\frac{1}{16}$ )
31-050	3.53	$\frac{1}{4}$ x.060 ( $\frac{1}{16}$ )

## Steel City Superior Fish Wire

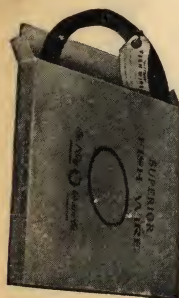
Flat shape of this wire makes it flexible, suitable for long runs of conduit having several bends. Tempering prevents the wire from curling after constant use.

**Heavy.**—For hand fishing.

**Light.**—For conduit fishing machines. Can also be used by hand for short runs of conduit where a stiff wire is not essential.

**Extra Heavy.**—Adapted for fishing heavy wire and cable. Used by plumbers for soil pipe cleaning and where a strong wire is necessary.

Furnished in an assortment of cut lengths in coils of 100 feet or more, or in reels holding from 2000 to 4000 feet according to size of wire. Heavy type is packed in individual cartons.



No.	Per 100 Feet	Size Inches	Approx. Weight Lb. per 1000 Ft.
1000	\$4.86	$\frac{1}{8}$ x.060	24
1001	6.00	$\frac{3}{16}$ x.060	35
1002	7.50	$\frac{1}{4}$ x.060	46
1009	13.00	$\frac{3}{8}$ x.060	55
<b>Light</b>			
1003	\$3.36	$\frac{1}{8}$ x.030	13
1004	4.86	$\frac{3}{16}$ x.030	19
1005	5.06	$\frac{1}{4}$ x.030	25
<b>Extra Heavy</b>			
1006	\$15.00	$\frac{1}{2}$ x.090	65
1007	20.80	$\frac{5}{8}$ x.090	75
1008	27.00	$\frac{3}{4}$ x.090	85

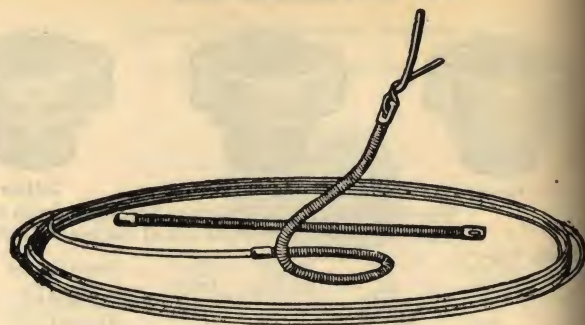
Appleton Fish Tape  
Schedule CF

Furnished in stock lengths of 100, 150, 200, 250 and 300 ft. Longer lengths are available if desired. Unless otherwise specified, 100-ft. lengths furnished.

No.	Size, In.	No.	Size, In.
7130	$\frac{1}{8}$ x.030	7133	$\frac{1}{8}$ x.060
7131	$\frac{3}{16}$ x.030	7134	$\frac{3}{16}$ x.060
7132	$\frac{1}{4}$ x.030	7135	$\frac{1}{4}$ x.060

## No. 101 N-E-Bend Snake Leaders

For .060x $\frac{1}{8}$ -Inch Fish Tape



Designed to permanently attach to the electrician's fish tape. A flexible end to aid in leading the fish tape around difficult bends in both rigid and flexible conduit.

Pulling test over 750 pounds.

Inner assembly consists of the nose end and tail cap attached by a strong aircraft cable, assuring strength required to pull the wire through the conduit.

The coiled music wire spring gives flexibility and long life. Plated to avoid rusting.

Packed 10 in a box.

No. 101.....each \$2.75

## No. 1629 Klein Pullers



A lightweight strong puller which can be carried in the vest pocket.

Weight each, 3 $\frac{1}{2}$  ounces.

For Fish Tape

No. 1629.....each \$3.00

No. 12 Iron Wire

No. 1629A.....each 3.00

## T&amp;B Fish Wire



Furnished with patented ball-points which enables the wire to run sharpest bends with ease. Tempered steel wire, with rounded edges. Strong and flexible.

Furnished in 50, 100, 150, or 200-foot coils.

Packed 1000 feet in a standard package.

No.	Per 100 Ft.	Wire Size In.	—APPROX. WT., LB. PER 1000 FT.—			
			50-Ft. Coils	100-Ft. Coils	150-Ft. Coils	200-Ft. Coils
3599	\$2.25	$\frac{3}{16}$ x.030	30	24	22	21
3600	1.75	$\frac{1}{8}$ x.030	25	20	18	17
3601	2.00	$\frac{1}{8}$ x.060	46	35	31	30
*3602	3.00	$\frac{3}{16}$ x.060	58	47	42	41
*3603	4.00	$\frac{1}{4}$ x.060	72	62	58	56
*3604	2.50	$\frac{1}{4}$ x.030	48	37	34	32

Size listed above furnished without balls when specified.

## Separate Fish Tape Balls



Fit any standard make of fish wire. To assemble, put end of fish wire in a vise. Tap lightly with hammer until flattened. Then slip end of fish wire into slot in threaded insert and screw ball on to insert.

Packed 10 in a unit quantity, 100 in a standard package.

No.	Per 100	For Wire Size, In.	Wt., Lb. Per 100
3615	\$48.00	$\frac{1}{8}$ x.060	2 $\frac{1}{2}$
3616	54.00	$\frac{3}{16}$ x.060	9
3617	54.00	$\frac{1}{4}$ x.060	9
3618	54.00	$\frac{1}{4}$ x.030	9

\*Cannot be fished through  $\frac{1}{2}$ -inch conduit.





### E.M.T. Hickeys For Thin Wall Conduit



An excellent tool for stubbing-up in concrete work and for making short or close bends.

Makes bends of any desired radius. To insure against kinking, the tube should be inched through, not more than 10 degrees being pulled at a time.

Standard package, 1.

No.	2195	2196	2197	2198	2199	2200
Each.....	\$2.11	2.64	5.27	7.03	8.43	10.54
Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2
Size Pipe Handle to Use.....inches	3/4	1	1	1 1/4	1 1/4	1 1/2
Weight Each.....pounds	1 3/4	2 3/4	4	10	12 1/2	15

### Electrunite Benders

For Use with Inch Marked Electrunite Steel Tubes



A one-piece malleable iron casting.

Instructions and markings for making stubs, back-to-back bends, and offsets are built into side of bender.

No.	1472	1473	1474
Each.....	\$3.23	4.78	7.25
Size.....inches	1 1/2	3/4	1
Pipe Handle Size.....inches	3/4	3/4	1
Standard Package.....	10	10	2
Weight per 100.....pounds	250	420	800

### Mandrel Springs

Used in Electrunite E.M.T. for making short radius bends with Hickey type bender in one full sweep. Spring acts as mandrel, supports wall, eliminates kinking. Easily removed by backing up slightly on bend or twisting the spring.

No.	50	75
Each.....	\$3.35	.50
Size.....inches	1 1/2	3/4
Weight.....pounds	1 1/2	1

### End Caps

For Use With Electrunite E.M.T.

Used for protecting stubs against possibility of getting concrete or other foreign matter in the ends of Electrunite E.M.T.

No.	500	750	1000
Per 1000.....	\$5.00	7.80	11.25
Size.....inches	1 1/2	3/4	1
Weight per 1000.....pounds	12 1/2	20	30

### Appleton Bending Hickeys

Schedule TW

For Electrical Metallic Tubing

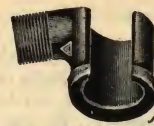


This hickey is of special design for making short bends, tight corners and for stubbing up in concrete work.

Cat. No.	Size Inches	Size Pipe Handle, Inches	Std. Pkg.	Wt., Lb. Std. Pkg.
12195	1/2	3/4	1	1 3/4
12196	3/4	1	1	2 3/4
12197	1	1	1	4
12198	1 1/4	1 1/4	1	10
12199	1 1/2	1 1/4	1	12 1/2
12200	2	1 1/2	1	15

### Appleton Tiger-Grip Hickeys and Couplings

Schedule CF  
Cadmium Finish



No. 7290 Hickey



No. 7295 Coupling



No. 7291 Hickey

The jaws grip with a set of sharp steel teeth in the lower jaw and do not slip. The coupling attachment strengthens the hold on the handle and prevents breakage. One tool takes care of all sizes of conduit up to and including 3/4-inch, and for the 1-inch conduit the hickey and sleeve coupling have been combined in one casting.

#### No. 7290 Hickeys

No.	For Conduit Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
7290	1/2 and 3/4	1	10	19
7291	1	1	10	55
7295	1/2 and 3/4	1	10	16

#### No. 7291 Hickeys with Couplings

#### No. 7295 Sleeve Couplings

No. 7296 jaws are available for Tiger-Grip Hickeys.

### T&B Lakin Conduit Hickeys



Shank has a bushed hole into which end of conduit enters when a short bend is made at its end or a bend is to be worked down. Bushed opening in shank fits snugly over end of conduit and protects threads.

Will not slip on conduit while a bend is being made.

It enables a workman to make bends having different curvatures. It will not kink pipe when making shortest practical bends. Made of malleable iron. Galvanized finish.

No.	Each	Size In.	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
335	\$1.75	1/2	1	10	190
*336	2.25	3/4	1	10	220
337	3.25	1	1	2	520

\*Can be used to bend 1/2-inch pipe.

### T&B Reinforced Lakin Hickeys

For Standard Rigid Conduit

Has a solid steel bar running through the shank and into the pipe handle, which strengthens the threaded section.

No.	Per 100	Size In.	Unit Quan.	Std. Pkg.	Wt., Lb. per 100
360	\$2.50	1/2	1	10	250
*361	3.50	3/4	1	10	300
362	6.00	1	1	2	600

\*Can be used to bend 1/2-inch pipe.

### T&B Hickey Type Benders

For Thinwall Conduit (E.M.T.)

Makes bends of any desired radius. To insure against kinking tubing, not more than 10° should be pulled at a time.



No.	Each	Size In.	Std. Pkg.	Wt., Lb. per 100
4185	\$2.50	1/2	1	2
4186	3.90	3/4	1	3.5
4187	5.00	1	1	5

### Appleton Bending Tools

Schedule TW

Especially designed for bending electrical metallic tubing. Makes bends in exactly the right place and with very little effort.

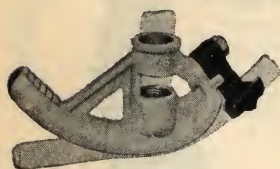
No.	14195	14196	14197
Size.....inches	1/2	3/4	1
Standard Package..	1	1	1
Wt. Std. Pkg.....lb.	2 1/2	4 1/8	7





### T & B Benders For Thinwall Conduit

PATENTED



No. 4165

Makes all bends either by a sweep of the handle or with bender reversed, no hickkeying necessary. Forms a perfectly smooth, round raceway, in any type of curve.

No.	*4165	4195	4196	4197
Each.....	\$2.50	2.50	3.90	5.95
Size.....inches	1/2, 3/8	1/2, 3/8	3/4	1
Standard Package.....	1	1	1	1
Weight, Each.....pounds	1 1/2	2 1/2	4	7

\*Blue Mark Bender.

### Steel City-Allen Heavy Wall Conduit Benders



This bender is made of high test steel. Has tempered case hardened teeth which grip in all positions.

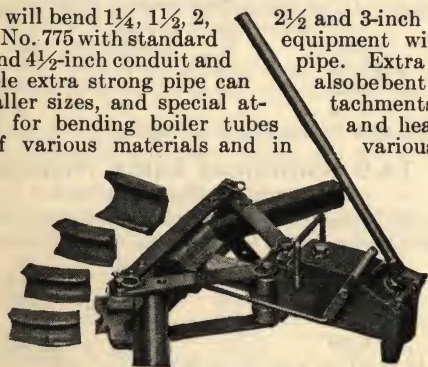
Solid jaws, no adjustments; 2-in-1 design with V receiving groove to prevent any contact on inner part of curve, thus preventing mashing, crushing or deforming the pipe.

No.	Per 100	Description	Size Conduit Inches	Approx. Std. Weight Pkg. Pounds
1	\$7.90	End Tapped 1" Female	1/4-3/4	10 2 1/2
6	9.90	End Tapped 1 1/4" Female	1/4-3/4	10 2 1/2
2	11.10	End Threaded 1 1/2" Male	3/4-1 1/4	5 3 3/4
7	14.10	End Tapped 1 1/2" Female	3/4-1 1/4	5 3 3/4

### Greenlee Hydraulic Benders

#### For Rigid Conduit, Pipe and Thin-Wall Steel Tubing

No. 770 will bend 1 1/4, 1 1/2, 2, and pipe. No. 775 with standard 3, 3 1/2, 4 and 4 1/2-inch conduit and double extra strong pipe can what smaller sizes, and special at-furnished for bending boiler tubes tubing of various materials and in 2 1/2 and 3-inch conduit equipment will bend pipe. Extra strong also bent in some attachments can be and heavy-wall various sizes.



Maximum piston pressure of No. 770 is 50,000 pounds and of No. 775, 80,000 pounds. Each bender has a safety valve to blow out at pressures exceeding capacity of power unit. All sizes of conduit within range of each machine can be bent cold, without use of heat or filler. Machine operates horizontally on the floor.

No. 770-T bends thin-wall electric metallic tubing quickly and without crushing. It is so designed that a full 90° bend can be made with one complete forward movement of the ram.

No. 770 Rigid Conduit Bender for 1 1/4 to 3-Inch, Shipping Weight, 198 Pounds.....each	\$170.00
No. 775 Rigid Conduit Bender for 3 to 4 1/2-Inch, Shipping Weight, 370 Pounds.....each	235.00
No. 775, Conduit Bender with Attachment for 1 1/4 to 4 1/2-Inch, Shipping Weight, 420 Pounds....each	272.00
No. 770-T Thin-Wall Conduit Bender for 1 1/4 to 2-Inch, Shipping Weight, 266 Pounds.....each	230.00
Set of Standard Attachments for Thin Wall Conduit, Shipping Weight, 190 Pounds.....each	120.00

### No. 763 Greenlee Steel Tubing Benders



Developed to bend steel tubing without kinking and flattening the tube. Will make smooth, even bends to a center-line radius of two and one-half times the outside diameters.

The follow bar, connecting bars, roller, clamp, shafts and eccentric lever are of high-grade steel, heat treated. Head or bending die milled to correct radius with accurately shaped groove for bending up to and including 180°.

O.D. Tubing Inches	Each	Radius Inches	Wt. Lb.	O.D. Tubing Inches	Each	Radius Inches	Wt. Lb.
1/4	\$10.00	5/8	3 1/4	5/8	\$14.00	1 1/16	6 1/2
5/16	10.00	25/32	4	3/4	17.50	1 1/8	10 1/2
3/8	11.00	15/16	4 1/2	7/8	21.50	2 3/16	22
1/2	12.00	1 1/4	5 1/4	1	25.00	2 1/2	26

### Greenlee Knockout Punches

For cutting holes in metal having a thickness up to 1/8 inch or 10 gage. Ordinary wrench will drive all units.



No. 735 consists of 4 punches for cutting 1/8, 1 1/2, 1 1/4 and 1 1/8-inch holes for 1/2, 3/4, 1, and 1 1/4-inch conduit.

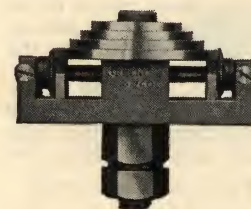
No. 737 consists of 2 punches for cutting 1 1/8 and 2 3/8-inch holes to take 1 1/2 and 2-inch conduit.

No. 738 cuts a 2 3/8-inch hole for 2 1/2-inch conduit. Drive is by a double diameter screw and nut.

No. 739 cuts a 3 1/2-inch hole for 3-inch conduit. Drive is by a double diameter screw and nut.

No.	735	737	738	739
Each.....	\$10.00	10.00	14.00	19.00
Weight.....pounds	2 3/4	4 1/4	5 3/4	7 1/4

### No. 740 Greenlee Knockout Cutters



Will handle the enlargement of knockouts to accommodate 1 1/2, 2, 2 1/2, and 3-inch conduit. It will cut material up to 1/8-inch or 10-gage thickness, and the operation can be performed in about 1 1/2 minutes.

Tool is hand driven; any ordinary wrench can be used.

The cutting is done by the drive action of two wheel cutters, mounted on a horizontal shaft in the body.

The center shaft of the tool is 3/4-inch diameter for passing through standard knockouts.

Packed in leather case.

Weight, 4 1/2 pounds.

No. 740.....each \$15.00

### Nye Spiral Fluted Bit Brace Reamers

#### Taper Shank



Made of high grade tool steel, drop forged.

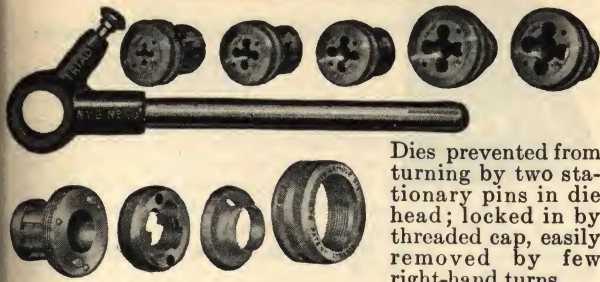
This reamer is made with a tapered shank to fit any standard bit brace. Spiral flutes give a shearing action, assuring operator of a clean and satisfactory job.

No.	42	42 1/2	44
Each.....	\$1.35	1.65	3.25
Capacity.....inches	1/8 to 1	1/8 to 1 1/4	1/4 to 2
Shipping Weight.....pounds	3/4	3/4	1 1/4



**Nye Triad Ratchet Die Stocks**

No. 50 Capacity,  $\frac{1}{8}$  to  $\frac{3}{4}$ -Inch Pipe  
No. 60 Capacity,  $\frac{1}{8}$  to  $1\frac{1}{4}$ -Inch Pipe  
With Reversible Die Feature

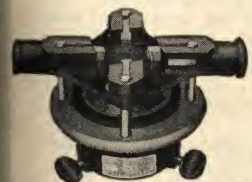


Dies prevented from turning by two stationary pins in die head; locked in by threaded cap, easily removed by few right-hand turns.

Description	No. 50		No. 60	
	Size Inches	Approx. Each Wt. Lb.	Size Inches	Approx. Each Wt. Lb.
Stock With Dies.....	$\frac{1}{8}$ to $\frac{3}{4}$	\$17.50 9½	$\frac{1}{8}$ to $1\frac{1}{4}$	\$26.60 21½
	$\frac{1}{4}$ to $\frac{3}{4}$	14.50 8½	$\frac{1}{4}$ to $1\frac{1}{4}$	23.35 19¾
	$\frac{3}{8}$ to $\frac{3}{4}$	11.50 7¼	$\frac{3}{8}$ to $1\frac{1}{4}$	20.10 17¾
			$\frac{1}{2}$ to $1\frac{1}{4}$	16.85 15¾
			$\frac{3}{8}$ to 1	16.60 14¾
			$\frac{1}{2}$ to 1	13.35 12½
Stock with Dies (without Ceiling Bushings).....	$\frac{1}{2}$ , $\frac{3}{4}$	8.50 6		
Ratchet with Handle.....		2.50 2¾		3.35 4¼
Die Head Complete.....	$\frac{1}{8}$ to $\frac{3}{4}$	3.00 1¼	$\frac{1}{8}$ to $\frac{3}{4}$	3.25 2½
			1 to $1\frac{1}{4}$	3.50 2½
Dies Only.....	$\frac{1}{8}$ , $\frac{3}{4}$ , $\frac{3}{8}$	1.95 ¼	$\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{3}{8}$	1.95 ¼
Dies Only, Each (Pipe or Conduit).....	$\frac{1}{2}$ , $\frac{3}{4}$	2.30 ½	$\frac{1}{2}$ , $\frac{3}{4}$	2.30 ½
			1, $1\frac{1}{4}$	2.45 ½
Extra Ceiling Bushings.....	$\frac{1}{8}$ to $\frac{3}{4}$	.20 ¼	$\frac{1}{8}$ to 1	.20 ¼
			$1\frac{1}{4}$	.30 ¼
Handy Carrying Rack.....		.65 2		1.15 4
Pawl and Spring.....		.75 ¼		.75 ¼
$\frac{1}{8}$ -1-Inch Ceiling Bushings; Wt., $\frac{1}{4}$ Lb., Extra.....				each \$2.20
$1\frac{1}{4}$ -Inch Ceiling Bushings; Wt., $\frac{1}{4}$ Lb., Extra.....				each .30

**Nye Receding Die Stocks**

Capacity, 1 to 2-Inch Pipe



Constructed on the receding die principle, therefore threads pipe very easily.

Set consists of stock handles, guides and set of 1 to 2-inch dies. Stock of malleable iron; dies of finest grade tool steel.

Furnished in Briggs (American) and Whitworth (English)

standards, right hand. American Standard furnished unless otherwise specified.

**No. 1**

No. 1, Stock Complete with Bushings, Handles and 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ , and 2-Inch Dies, Approximate Shipping Weight 21 Pounds.....each \$17.50

No. 1, Stock Only, With Bushings, Without Dies and Handles, Approximate Shipping Weight,  $14\frac{3}{4}$  Pounds.....each 11.70

**No. 1A**

Same basic construction as No. 1, but equipped with a ratchet. Can be used as an ordinary stock with two handles when desired.

Ratchet feature makes tool desirable for threading pipe where space is limited.

No. 1-A, Ratchet Stock Complete with Bushings, Handles and 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$  and 2-Inch Dies, Approximate Shipping Weight,  $25\frac{3}{4}$  Pounds.....each \$21.00

No. 1-A, Ratchet Stock Only, With Bushings, Without Dies and Handles, Approximate Shipping Weight,  $18\frac{3}{4}$  Pounds.....each 14.60

Bushings (Guides), Sizes, 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$  or 2 Inches, Approximate Shipping Weight,  $\frac{3}{4}$  Pound.....each .30

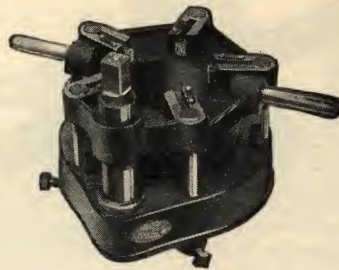
Thumb Screws, Approx. Ship. Weight,  $\frac{1}{8}$  Pound each .15

Nail, Spring and Pin, Approximate Shipping Weight per Set,  $\frac{1}{4}$  Pound.....per set .15

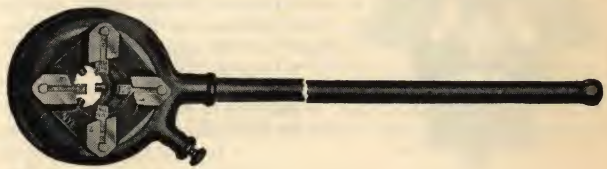
**No. 2 Nye Receding Stocks**

With Separate Guides

Capacity,  $2\frac{1}{2}$  to 4-Inch Pipe Inclusive



Fits Federal Specification GGG-T-581, Fig. 12, Type I. No. 2, Complete with Ratchet Handle. Guides and Dies,  $2\frac{1}{2}$ , 3,  $3\frac{1}{2}$ , and 4 Inches. Weight 100 pounds.....each \$75.00  
No. 2, Stock Only without Ratchet Handle, Hub, Guides and Dies. Weight,  $67\frac{1}{2}$  Pounds.....each 52.00  
Bushings (Guides)  $2\frac{1}{2}$ , 3,  $3\frac{1}{2}$  and 4 Inches. Weight,  $2\frac{3}{4}$  Pounds.....each size 1.65  
Set-Screw, Weight,  $\frac{1}{4}$  Pound.....each .20

**No. 1R Nye Ratchet Receding Die Stocks**

A light, one-man stock.

Furnished with bushings and 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$  and 2-inch dies.

Shipping weight, 23 pounds.

No. 1R, Complete.....each \$19.50

1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ -Inch Chasers, 4 Segments to

a Set of Each Size.....per set 2.00

2-Inch Chasers, 4 Segments to a Set.....per set 2.50

**Nye Thread Chasers****For Receding Die Stocks**

Made from either high grade alloy or high speed steel, hardened and tempered in oil.

Cutting teeth milled, not tapped.

Set consists of one size only.

**Sets for Nos. 1, 1-A, 1-R, 101 and 101-A Stocks**

Consists of regular alloy steel segments, 4 of each of the following sizes: 1,  $1\frac{1}{4}$  and  $1\frac{1}{2}$  inches. Approximate shipping weight, 1 pound.....per set \$2.00

Consists of high speed steel segments, 4 of the 2-inch size. Approximate shipping weight,  $\frac{3}{4}$  pound.....per set 2.50

Consists of high speed steel segments, 4 of each of the following sizes: 1,  $1\frac{1}{4}$  and  $1\frac{1}{2}$  inches. Approximate shipping weight, 1 pound.....per set 2.50

**Sets for No. 2 Stocks**

Consists of regular alloy steel segments, 5 of each of the following sizes:  $2\frac{1}{2}$ , 3,  $3\frac{1}{2}$  and 4 inches. Approximate shipping weight, 2 pounds.....per set \$5.00



### Nye Triad 3-Way Stocks With Reversible Die



Dies may be reversed in holder to thread close nipples.  
 Stock Complete with  $\frac{3}{8}$ ,  $\frac{1}{2}$ , and  $\frac{3}{4}$ -Inch Dies. Weight,  $7\frac{1}{2}$  Pounds.....each **\$9.65**  
 Stock Complete with  $\frac{1}{2}$ ,  $\frac{3}{4}$ , and 1-Inch Dies. Weight,  $11\frac{1}{4}$  Pounds.....each **10.30**  
 Triad Dies Only,  $\frac{3}{8}$  Inch. Weight,  $\frac{1}{4}$  Lb.....each **1.95**  
 Triad Dies Only,  $\frac{1}{2}$  and  $\frac{3}{4}$  Inch. Weight,  $\frac{1}{2}$  Pound, (Pipe or Conduit).....each **2.30**  
 Triad Dies Only, 1 Inch. Weight,  $\frac{1}{2}$  Pound, (Pipe or Conduit).....each **2.45**  
 Ceiling Bushings (Extra),  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1 Inch, Weight,  $\frac{1}{4}$  Pound.....each **.20**

### Nye Triplex Solid Die Stocks



A lightweight, sturdy one-piece combination 3-way stock, made of malleable iron. Has large openings in body, which allows amply for oiling and for chip clearance.

Supplied in two combinations:  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ -inch; and  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1-inch.

Description	Per Set	Ship- Wt. Lb.
Stock and Skip-Tooth Dies, $\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ -Inch, or $\frac{1}{2}$ , $\frac{3}{4}$ , 1-Inch.....	<b>\$12.30</b>	<b>11<math>\frac{1}{4}</math></b>
Stock Complete with Handles, but without Dies.....	<b>6.00</b>	<b>8<math>\frac{1}{4}</math></b>
Extra Dies.....each	<b>2.45</b>	<b>1</b>

### Nye Conduit Solid Dies



Square

Skip-tooth dies made especially for threading conduit pipe.

Produces the proper thread adopted and standardized by the Conduit Manufacturers Association.



Round

#### Square Dies

Die block, $2\frac{1}{2} \times 2\frac{1}{2}$ inches.	
$\frac{1}{8}$ , $\frac{1}{4}$ and $\frac{3}{8}$ Inch Size.....each	<b>\$1.95</b>
$\frac{1}{2}$ , $\frac{3}{4}$ and 1-Inch Size.....each	<b>2.45</b>

#### Round Dies

For Triad stocks.	
$\frac{1}{2}$ and $\frac{3}{4}$ -Inch Size.....each	<b>\$2.30</b>
1 and $1\frac{1}{4}$ -Inch Size.....each	<b>2.45</b>

### Nye Pipe Threading Oil



Has a sulphur base. Furnished in regular dark, unless otherwise specified. Clear is available if relatively transparent oil is preferred.

	Dark	Clear	Wt., Lb.
1-Gal. Cans.....per gal.	<b>\$1.00</b>	<b>\$1.20</b>	<b>11</b>
5-Gal. Cans.....per gal.	<b>.90</b>	<b>1.10</b>	<b>45</b>
55-Gal. Drums...per gal.	<b>.75</b>	<b>.90</b>	<b>470</b>



### Nye Standard Self-Locking Pipe Vises

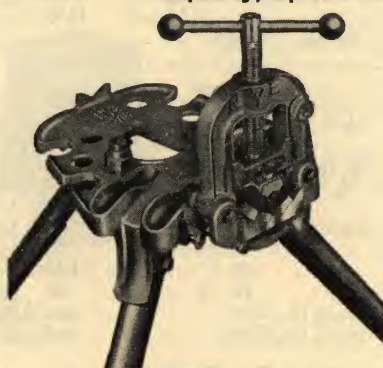
Capacity,  $\frac{1}{8}$  to  $\frac{1}{2}$  Inches

Large thread screw, either side opens, hardened tool steel jaws.

No.....	<b>700</b>	<b>70</b>	<b>71</b>	<b>72</b>	<b>73</b>
Complete.....each	<b>\$4.60</b>	<b>\$5.40</b>	<b>\$6.35</b>	<b>\$9.55</b>	<b>\$13.35</b>
Extra Jaws, Set of 2.....each	<b>1.65</b>	<b>1.95</b>	<b>1.95</b>	<b>2.75</b>	<b>3.75</b>
Takes Pipe.....inches	$\frac{1}{8}$ - $1\frac{1}{2}$	$\frac{1}{8}$ -2	$\frac{1}{8}$ - $2\frac{1}{2}$	$\frac{1}{2}$ - $3\frac{1}{2}$	$\frac{1}{2}$ -4
Weight.....pounds	<b>6</b>	<b>8<math>\frac{3}{4}</math></b>	<b>12</b>	<b>21<math>\frac{1}{2}</math></b>	<b>27<math>\frac{1}{2}</math></b>

### No. 88 Nye Convertible Combination Vises and Stands

Capacity, Up to 4 Inch Pipe



No. 88-A With Yoke Vise

Made of malleable iron.

Base designed so yoke vise parts,  $\frac{1}{2}$  to  $2\frac{1}{2}$  inches can be replaced by chain vise parts, 1 to 4 inches, or vice versa.

Base has lip and slots for hanging tools, pipe rest and provision for oil can in handy position.

Hole in rear of base tapped for standard 1-inch pipe threads, to

accommodate extension pipe rest arrangement.  
 Can also be used for bending  $\frac{1}{2}$  and  $\frac{3}{4}$ -inch pipe.  
 Locking arrangement for each leg for both open and closed positions, no chain required.  
 No. 88-A, With Yoke Vise,  $\frac{1}{8}$  to  $2\frac{1}{2}$  Inches, Approx. Shipping Weight, 45 Pounds.....each **\$17.70**  
 Extension Pipe Rest Yoke, Approximate Shipping Weight,  $1\frac{1}{2}$  Pounds.....each **.95**  
 Parts Necessary to Convert No. 88-A to No. 88-B (Jaws, Chain, Handle, Screws, Extension Pipe Rest Yoke), Approx. Shipping Weight,  $2\frac{1}{2}$  Lb.....each **5.00**  
 No. 88-B, With Chain Vise, 1 to 4 Inches, Plus Extension Pipe Rest Yoke, Approx. Shipping Weight, 43 Pounds.....each **19.25**  
 Parts Necessary to Convert No. 88-B to No. 88-A (Yoke Assembly, Lower Jaws and Screws), Approx. Shipping Weight,  $4\frac{1}{2}$  Pounds.....each **3.45**  
 No. 88-C, Stand With All Parts for No. 88-A and B, Approximate Shipping Weight, 47 Pounds...each **22.70**

### Nye Tube Cutters with Rollers



No. 20

Used by plumbers, electricians, refrigerator repair men, and automobile mechanics for cutting copper, brass and lead tubing.

Roller reduces friction to the extent that tubing is not marred or torn during cutting operation. Wheel with finely

ground edge leaves a slight burr, easily removed by reamer.

No.....	<b>10</b>	<b>20</b>	<b>30</b>
Each.....	<b>\$1.75</b>	<b>\$2.45</b>	<b>\$3.25</b>
*Wheel or Roller Pins.....each	<b>.10</b>	<b>.10</b>	<b>.10</b>
Cutter Rollers.....each	<b>.10</b>	<b>.10</b>	<b>.15</b>
O.D.....inches	$\frac{1}{16}$ - $\frac{3}{4}$	$\frac{1}{2}$ - $1\frac{3}{8}$	$1$ - $2\frac{1}{2}$
Extra Wheels, All Cutters.....each	<b>\$ .30</b>		

\*Specify when ordering.



## Nye Drop-Forged Steel Pipe Cutters

### Trimo Type



Can be used as a one or three-wheel pipe cutter. Furnished with two rollers and one Nye Thin Blade Smooth Cutter Wheel. No thread in frame to wear out.

Adjustment of the handle screw is made through a case-hardened nut which can easily be replaced when worn.

Size No.	1T	2T	3T
Each	\$4.70	6.30	10.50
Pipe Capacity	$\frac{1}{8}$ - $1\frac{1}{4}$ inches	$\frac{1}{8}$ -2	$\frac{3}{8}$ -3
Shipping Weight	5 $\frac{3}{4}$ pounds	6 $\frac{1}{4}$	10 $\frac{1}{2}$

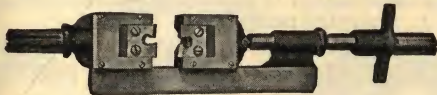
### Parts

Description	No. 1T		No. 2T		No. 3T	
	Each	Ship.	Each	Ship.	Each	Ship.
Knife-Edge Wheels	\$1.50	$\frac{3}{4}$	\$1.50	$\frac{3}{4}$	\$1.50	$\frac{1}{4}$
Knurled-Edge Wheels	.50	$\frac{3}{4}$	.50	$\frac{3}{4}$	.75	$\frac{1}{4}$
Rollers	.20		.20		.40	
Pins	.10		.10		.10	

## Beaver Square-End Knife Pipe Cutters

No. 1,  $\frac{1}{8}$  to 1 Inch

No. 5,  $\frac{1}{2}$  to 2 Inch



For cutting, grooving or beveling pipe.

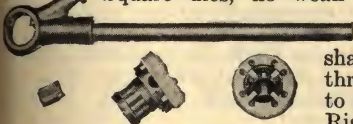
This pipe cutter cuts like a lathe tool, each turn removing a thin shaving until the pipe is severed. Leaves no burr to be reamed or filed, or to reduce the capacity of the pipe, and threading dies start easily and with less wear.

No.	1	5
Complete	each \$16.50	\$17.50
Extra Cutting Knives	per set 1.00	1.50
Grooving Knives	per set	2.50
Beveling Knives	per set	3.50
Shipping Weight	pounds 8	14
Cuts Pipe	inches $\frac{1}{8}$ -1	$\frac{1}{2}$ -2

## No. 2 Beaver Open Ratchet Die Stocks

For  $\frac{1}{8}$  to  $\frac{3}{4}$ -Inch Pipe— $\frac{1}{4}$  to 1-Inch Bolts

Openings between dies for easy oiling and chip clearance. Square dies, no weak offset to break. Die segments interchangeable, easily re-sharpened, reversible for threading pipe too short to pass through die head.



Right or left hand.

### No. 2 Complete, for Pipe Only

Size	$\frac{1}{2}$ - $\frac{3}{4}$ inches	$\frac{3}{8}$ - $\frac{3}{4}$	$\frac{1}{4}$ - $\frac{3}{4}$	$\frac{1}{8}$ - $\frac{3}{4}$
Each	\$8.50	11.50	14.50	17.50
Shipping Weight	pounds 7	8	9	10

### Pipe Die Heads with Dies

Size	$\frac{1}{8}$ inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Each	\$3.00	3.00	3.00	3.00	3.00
Shipping Weight	lb. 1	1	1	1	1
$\frac{3}{4}$ -In. 20-Thrd. Brass Die Head with Dies	ea.	\$3.50			
$\frac{5}{8}$ or $\frac{3}{4}$ -In. 27-Thrd. Die Head with Dies	ea.	3.50			

## Beaver Threading Oil

### For Hand Tools and Threading Machines

A sulphur-base threading oil (high in heat-absorbing properties) that both cools and lubricates. Improper oil causes overheating, chipped dies and bad threads.

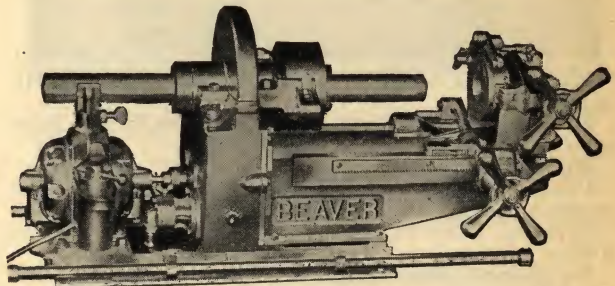
Size Can.	gal.	1	5	15	30	55
Each		\$1.50	7.50	19.50	37.50	66.00
Ship. Wt.	lb.	8	44	125	250	500



## Beaver Pipe and Bolt Machines

Capacity:  $\frac{1}{8}$  to 2-Inch Pipe;  $\frac{1}{4}$  to 2-Inch Bolts

$2\frac{1}{2}$  to 12-Inch Pipe with Shaft and Geared Tools



### Model A

A heavy duty, portable machine for right hand operation. Has 12-inch free working space and a 3-jaw universal chuck which is used with an automatic chuck wrench ejector. Dieheads are of the solid ring type.

### Model B

A light, compact unit for field use by plumbing, heating electrical, and sprinkler contractors.

For right hand operation.

Has 13-inch open working space and a full-range universal chuck with automatic safety chuck wrench ejector.

Furnished with ring type dieheads.

Both Models are furnished complete with 110 or 220-volt universal reversible motor for light line service, a.c. or d.c., 25 to 60 cycles; reversing switch; reversible oil pump;  $\frac{1}{8}$  to 2-inch hinged cone-type reamer; ball bearing self-centering wheel and roller cutoff suitable for pipe or bolts; and one gallon of threading oil.

Prices upon application.

## Model C Beaver Power Unit

Capacity:  $\frac{1}{8}$  to 2-Inch Pipe;  $\frac{1}{4}$  to  $1\frac{1}{2}$ -Inch Bolts;  $2\frac{1}{2}$  to 8-Inch Pipe with Drive Shaft and Geared Tools



Model C-1

Model C-2 with Vise

A sturdy power unit for bench use; makes machines of hand tools. Model C-2 is recommended if a pipe vise is required. Where a pipe vise is unnecessary, Model C-1 is more convenient to use.

Cushman all-steel universal geared chuck. Machine is equipped with an automatic safety chuck wrench ejector,

chuck wrench holder, and a safety latch. Gears are fully enclosed; the main driving gear revolves through an oil bath. Chuck is opened and closed by turning a chuck wrench, and chuck remains stationary.

Black & Decker universal motor,  $\frac{1}{2}$  hp. nominal rating (actual developed power, 1.59 hp.). Motor will operate on either a.c. or d.c., 25 to 60 cycles. Choice of 110 or 220-volt motor; specify when ordering.

Base, 18x18 inches; height,  $12\frac{1}{2}$  inches. Base dimensions, mounted on legs, 42x46 inches.

Model C-1, No Provision for Vise; Net Weight 140

Pounds; Shipping Weight, 167 Pounds.....each \$185.00

Model C-2, without Vise; Net Weight, 166 Pounds;

Shipping Weight, 193 Pounds.....each 200.00

Model C-2, with Vise and Pipe Rest; Shipping

Weight, 204 Pounds.....each 210.00

### Accessories

Galvanized Legs, Front Feet, Rear Spikes; Shipping

Weight, 32 Pounds.....per set \$6.60

Pipe Bender,  $\frac{1}{8}$  to  $\frac{3}{4}$ -In.; Ship. Wt., 4 Lb.....each 1.80



**No. 888 National La-In Metal Molding**

Approved by Underwriters' Laboratories, Inc.



For main runs branching into No. 333 molding or No. 111 Xtensionduct.

Made in two pieces, base and capping, so formed as to snap together, capping snapping over base.

Wires are laid-in, not fished.

Designed to hold wires in place and allow capping to be snapped on easily and securely.

Capacity: 10 No. 14, 10 No. 12, 10 No. 10, 7 No. 8 or 3 No. 6 wires.

For 10 wires;  $1\frac{3}{4}$  inches wide,  $\frac{1}{16}$  inches high, and 100 inches long.

Has mounting holes in base for No. 8 screws or toggles on 12-inch centers.

Furnished with 3 wire retaining clips for each length. Neutral gray finish. May be painted to match walls or ceiling, or grained to match woodwork.

Packed 12 lengths (100 feet) in a sealed container.

Carton, 100 feet. Standard package, 1000 feet.

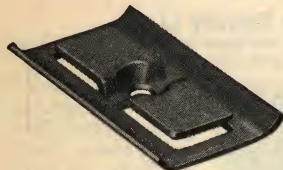
Weight per standard package, 616 pounds.

No. 888.....per 100 feet **\$28.00**

**No. 888 National Metal Molding Fittings****No. 841 Wire Retaining Clips**

Holds wires in place until capping is installed.

Three clips are furnished without charge with each length.

**No. 854 Couplings**

Carton, 10.

Standard package, 100.

Weight per standard package, 5 pounds.

No. 854.....per 100 **\$5.50**

**No. 836 90° Flat Elbows**

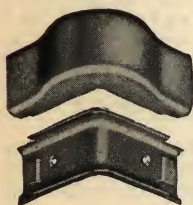
Has push fit base.

Carton, 1.

Standard package, 10.

Weight per standard package, 4 pounds.

No. 836.....per 100 **\$46.50**

**No. 837 90° External Elbows**

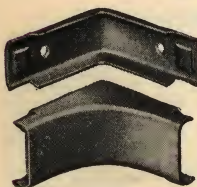
Has push fit base.

Carton, 1.

Standard package, 10.

Weight per standard package, 4 pounds.

No. 837.....per 100 **\$66.00**

**No. 838 90° Internal Elbow**

Has push fit base.

Carton, 1.

Standard package, 10.

Weight per standard package, 4 pounds.

No. 838.....per 100 **\$66.00**

Continued

**No. 888 National La-In Metal Molding Fittings**

Concluded

**No. 876 Combination Fittings**

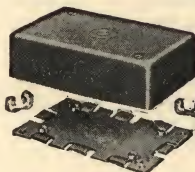
Has double twistouts for Nos. 888 and 333 metal molding at each side and one at each end;  $\frac{1}{2}$ -inch knockout in one arm of base and combination  $\frac{1}{2}$ -inch and 1-inch knockout in other arm.

Carton, 1.

Standard package, 10.

Weight per standard package, 5 pounds.

No. 876.....per 100 **\$36.00**

**No. 839 Utility Boxes**

Dimensions:  $4\frac{1}{8} \times 3\frac{1}{8} \times 1\frac{3}{8}$  inches deep.

Long side; 3 double twistouts; two for Nos. 333 metal molding and 111 xtensionduct, one for Nos. 888 and 333 metal molding.

Short side; one double twistout for Nos. 888 metal molding and 333 xtensionduct.

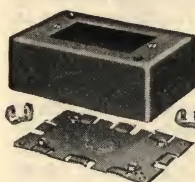
Top has combination  $\frac{1}{2}$ -inch conduit knockout and drop cord eyelet.

Base has combination  $\frac{1}{2}$  and 1-inch conduit knockouts.

Carton, 1. Standard package, 10.

Weight per standard package, 10 pounds.

No. 839.....per 100 **\$84.00**

**No. 839-S Single-Gang Surface Switch and Receptacle Boxes**

Dimensions:  $4\frac{1}{8} \times 3\frac{1}{8} \times 1\frac{3}{4}$  inches.

Has three double twistouts; two for Nos. 333 and 111 metal molding, one for Nos. 888 metal molding and 333 xtensionduct in sides, and one for Nos. 888 metal molding and 333 xtensionduct in ends.

Also has combination  $\frac{1}{2}$  and 1-inch conduit knockouts in base.

Carton, 1. Standard package, 10.

Weight per standard package, 10 pounds.

No. 839-S.....per 100 **\$126.50**

**No. 826  $6\frac{1}{2}$ -Inch Canopy Base Plate and Cover**

Has two pairs 8-32 tapped holes on  $2\frac{3}{4}$ -inch centers and one pair on  $3\frac{1}{2}$ -inch centers.

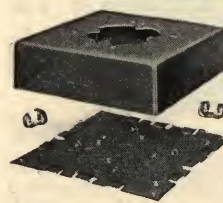
Also has six double twistouts for Nos. 888 and 333 metal molding and  $5\frac{1}{2}$ -inch knockouts in base.

Carton, 1.

Standard package, 10.

Weight per standard package, 25 pounds.

No. 826.....per 100 **\$111.50**

**No. 840 Distribution Boxes**

Dimensions:  $6\frac{3}{8} \times 6\frac{3}{8} \times 1\frac{3}{4}$  inches deep.

All cover sides.

Has three double twistouts; two for Nos. 333 metal molding and 111 xtensionduct, one for Nos. 888 and 333 metal molding.

Cover top has two pairs No. 8-32 tapped holes on  $2\frac{3}{4}$ -inch centers

and one pair on  $3\frac{1}{2}$ -inch centers.

Base has five  $\frac{1}{2}$ -inch knockouts.

Carton, 1. Standard package, 10.

Weight per standard package, 20 pounds.

No. 840.....per 100 **\$136.50**



**No. 333 National La-In Metal Molding**

Listed and Approved by Underwriters' Laboratories, Inc.



Consists of two pieces, base and capping, so formed as to snap together, capping snapping over base. Wires laid-in, not fished. For 2 to 4 wires; 1 inch wide,  $\frac{3}{16}$  inch high,  $8\frac{1}{2}$  feet long. Capacity, 4 No. 12 or No. 14 wires or 3 No. 8 or No. 10 wires.

Neutral gray finish. May be painted to match walls or grained to match woodwork, taking oil or water paints.

Packed 12 lengths,  $8\frac{1}{2}$  ft. long; 100 ft. in corrugated container; 100 ft. in unit package; 1000 ft. in std. pkg.

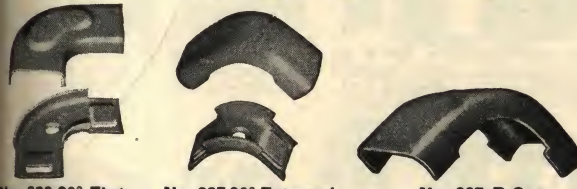
No. 333, Wt., per Std. Pkg., 410 pounds. Per 100 feet \$11.20

**National La-In Metal Molding Fittings**

No. 319 Take-Off Tee

No. 325 Combination Twist Elbow or Tee

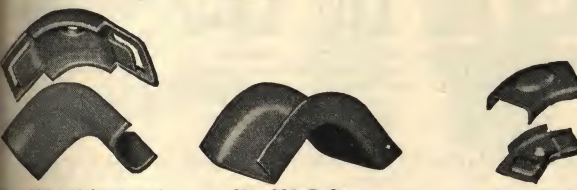
No. 335 90° Flat Tee



No. 336 90° Flat Elbow

No. 337 90° External Elbow

No. 337-B Cap



No. 338 90° Internal Elbow

No. 338-B Cap

No. 437 45° Flat Elbow



No. 315 1/2-inch Conduit to Molding Adapter

No. 316 90° 1/2-inch Conduit Coupling

No. 317 90° 1/2-inch Angle Box Connector

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Std. Pkg.
319	\$30.00	For branch molding runs. Tee base slips under molding base. Capacity, up to 2 No. 10 or No. 14 splices.	5	50	15
325	33.00	To take No. 333 molding from wall to Ceiling for use as left or right tell or tee for through runs. With Push-fit base. Capacity, up to 4 No. 12 splices.	5	20	22
335	30.00	With Push-fit base. Capacity, up to 4 No. 12 splices.	5	50	15
336	21.00	With Push-fit base.	10	100	11
337	22.00	With Push-fit base.	10	100	8
337-B	13.50	For No. 337 external elbow.	30	60	3
338	22.00	With Push-fit base.	10	100	9
338-B	16.50	For No. 338 internal elbow.	30	60	3
437	24.00	With Push-fit base.	5	20	4
315	27.50	For 1/2 in. conduit to molding devices, elbows, tees.	5	50	3
316	40.00	Molding to 1/2 inch conduit.	5	20	5
317	40.00	Molding to 1/2 in. conduit KO or to 1/2 in. conduit coupling.	5	20	4

**No. 111 National La-In Xtensionduct Molding**

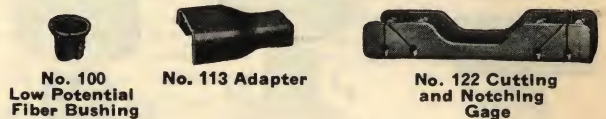
Listed and Approved by Underwriters' Laboratories



For extension wiring from existing convenience outlet. Takes two No. 14 wires. Furnished in 5-foot lengths.

Molding, fittings, plates and bakelite receptacles finished in neutral gray. Wires laid-in, cover snaps on. Packed 100 in unit package; 1000 in standard package.

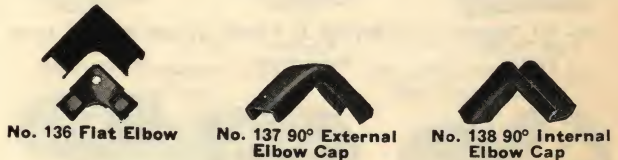
No. 111, Wt. per 100 Ft., 16 Lb. .... per 100 feet \$9.00

**National La-In Xtensionduct Fittings**

No. 100 Low Potential Fiber Bushing

No. 113 Adapter

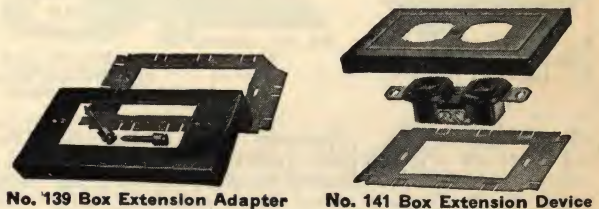
No. 122 Cutting and Notching Gage



No. 136 Flat Elbow

No. 137 90° External Elbow Cap

No. 138 90° Internal Elbow Cap



No. 139 Box Extension Adapter

No. 141 Box Extension Device



No. 144 Coupling



No. 176 Baseboard Offset Elbow

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt. Lb. Std. Pkg.
100	\$3.10	For covering bell wire where Xtensionduct is used without fittings.	10	100	1
113	6.60	Xtensionduct to No. 333 molding fittings.	10	50	3
122	1.00	Miter gage which assures close and neat fitting joints and corners. Xtensionduct only.	1	1	1 1/4
136	15.50	For use at left or right 90° bends. Supplied with base.	5	50	2
137	8.80	For use at outside corners; 90°.	5	50	1 1/2
138	8.80	For use at inside corners; 90°.	5	50	1 1/2
139	52.00	Accommodates extensions from outlets requiring other than standard convenience receptacles. May be used with any standard wiring device including P&S Despard Line.	1	20	5
141	77.00	Accommodates extensions from existing outlets. Includes plate and T-slot receptacle.	1	20	10
144	1.50	For connecting base; capping may overlap joint.	10	50	1
176	16.00	For runs from face to top of baseboard. Supplied with base.	5	20	2



### National La-In Combination Fittings For Xtensionduct and Metal Molding



No.	Per 100	Description	Unit Pkg.	Std. Wt., Lb. Pkg.	Std. Pkg.
348	\$49.50	Push-fit base; 4 dbl twistouts with terminal block.....	5	50	15
348-X	38.50	Push-fit base; 4 dbl twistouts	5	50	19
350	72.00	Consists of parallel slot duplex receptacle and steel housing for surface mounting; 4 twistouts.....	1	20	9
350-T	97.50	Consists of T-slot duplex receptacle and steel housing for surface mounting; 4 twistouts.....	1	20	9
351	105.60	Consists of toggle switch and steel housing for surface mounting; 4 twistouts.....	1	20	8
356-X	66.00	Threaded for Uno shade holder. Push-fit base; 4 double twistouts, 660 watt.....	5	50	22
360	89.50	Push-fit base, 2 double twistouts, 660 watt.....	5	50	18
339-X	13.00	With combination 1/2 inch conduit KO and drop cord eyelet. For use with Nos. 342 or 343 boxes.....	5	50	8
342	45.50	Depth, 1 inch, 1/2 inch conduit KO in bottom. Two No. 6-32x1 1/2 inch screws furnished for mounting sockets, switches, or other devices. 4 double twistouts..	5	50	16
343	44.00	Depth, 5/8 inch, 1/2 inch conduit KO in bottom. Two No. 6-32x1 1/2 inch screws furnished for mounting sockets, switches, or other devices. 4 double twistouts.	5	50	16
352	44.00	With combination 1/2 inch conduit KO and drop cord eyelet; 4 twistouts.....	5	20	7
361	71.50	Combination 1/2 inch conduit KO and drop cord eyelet. Six double twistouts.....	5	20	35

### National La-In Combination Fittings For Xtensionduct and Metal Molding



No.	Per 100	Description	Unit Pkg.	Std. Wt., Lb. Pkg.	Std. Pkg.
362	\$71.50	*Two pairs 8-32 tapped holes.....	5	50	30
365	65.00	*Five 1/2 inch conduit KO's in plate.....	5	50	36
366	80.00	*Five 1/2 inch conduit KO's	5	20	25
367	92.50	*Two pairs 8-32 tapped holes.....	5	20	23
376	50.50	Double twistouts on each side and 1 at each end, KO for 1/2 in. conduit in each arm of base.....	5	20	21
438	115.50	†Has wall case without KO's 1 1/8 inch deep and surface box 3/4 inches deep.....	1	20	9
439	69.50	†Depth 1 3/4 inches.....	1	20	8
439-D	62.50	†Depth 1 3/8 inches.....	1	20	7
439-X	60.50	†Depth 1 inch.....	1	20	7
440	146.00	§Depth 1 3/4 inches.....	1	10	11
440-D	140.25	§Depth 1 3/8 inches.....	1	10	10
440-X	136.00	§Depth 1 inch.....	1	10	9
441	62.50	†Depth 3/4 inches.....	1	20	5
442	158.00	†Depth 3/4 inches.....	1	10	7
365-X	18.50	With combination 1/2 inch conduit KO and drop cord eyelet. For use with Nos. 362, 365, 365-A, 366 and 367.....	5	50	10

\*Two pairs 8-32 tapped holes on 3 1/4 and 4 inch centers. For standard outlet box covers or devices. Six double twistouts.

†For flush switches and receptacles. Size, 4 7/8 x 3 1/8 inches, with 4 double twistouts.

‡Can be furnished up to six-gang.

§For flush switches and receptacles; 4 7/8 x 5 inches with 8 double twistouts.



## National La-In Metal Molding Fittings



No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt. Lb.
355	\$9.50	Ground clamp.....	5	20	4
369-X	39.00	Open work coupling.....	5	20	4
406	24.00	For 1/2 inch conduit KO in end and bottom, furnished with chase nipple and 1/2 inch locknut.....	5	50	11
2180	16.00	Molding to 1/2 in. conduit K.O., or to 1/2 in. conduit cplg.....	10	100	14
352-F	86.50	For branch from top to face of baseboard. Opening for No. 333 and elbow cap...	5	20	9
357	68.00	Slips over molding base, secured by set-screw, bakelite liner for high wattage lamps, 600 watts. Threaded for Uno shade holder..	5	50	19
323	1.50	Joint cap.....	50	200	4
324	8.60	Rawl drive.....	100	100	2
344-X	2.00	Coupling.....	50	200	11
345	1.40	Single strap.....	50	500	7
434	4.40	With base, base plate type..	50	500	11
322	*4.00	For No. 333 molding.....	1	1	12.7
422-X	*15.00	Molding shear.....	1	1	11
423	1.40	No. No. 333 molding. Miter gage which assures close fitting joints and corners..	1	1	2
303	3.70	To take molding into Wire-mold boxes and devices...	10	100	4
412	23.04	For 14/2 or 12/2 Ovalflex Flat Armored Cable to Metal Molding boxes and devices.....	10	100	6

\*Each. †Ounces.

## National 3-Wire Ovalduct



Ovalduct is a flat raceway for extension work on the walls and ceilings of fireproof buildings. It is a rigid tube formed from sheet steel.

Ovalduct is installed without channelling the underlying concrete, tile, or brick. It can be laid in a shallow groove in the plaster, and fastened to the ceiling or wall with straps and wire toggles provided for the purpose, or with short tie wires which are fished through small holes drilled in tile on each side of duct. It is shallow enough that plaster of ordinary thickness will completely cover it.

The Ovalduct line includes elbows, couplings, and boxes to take care of any wiring situation, and connectors which permit this raceway to be installed in conjunction with any other type of raceway or wiring system. All fittings are especially designed for the purpose and are easily installed. Approved by the Underwriters' Laboratories.

Nominal outside over all dimensions are 1 3/32 inch high, 1 1/2 inch wide and 10 feet long.

Standard package, 100 feet.  
Weight per 100 feet, 35 pounds.

Per 1000 Feet..... \$20.00

## Fittings for 3-Wire Ovalduct

### No. 2133 Squeeze Type Couplings



For Ovalduct and elbows.  
Length, 1 1/4 inches.

No.	Per 100	No. in Ctn.	Std. Pkg.	Wt. Lb. Std. Pkg.
2133	\$15.26	50	100	7

### No. 2143 Pitcher Lip Box Connectors



Takes Ovalduct to oval K.O.'s.

No.	Per 100	No. in Ctn.	Std. Pkg.	Wt. Lb. Std. Pkg.
2143	\$6.30	25	100	6

### No. 2662 Outlet Boxes



Outside dimensions, 4x3 1/4 inches; 6 oval K.O.'s in side; five 1/2-inch conduit K.O.'s in bottom.

2662	\$14.00	5	50	25
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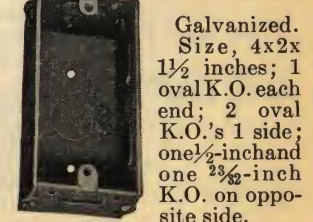
### No. 2159 Wire Toggle Fasteners

2159	\$2.00	25	500	13
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### No. 2161 Strap Fasteners

2161	\$ .80	50	1000	9
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### No. 4170-S1 Sectional Switch Boxes



Galvanized.  
Size, 4x2x 1 1/2 inches; 1 oval K.O. each end; 2 oval K.O.'s 1 side; one 1/2-inch and one 3/8-inch K.O. on opposite side.

4170-S1	\$30.60	1	50	30
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### No. 2137 90° Internal Elbows



Set screw for securing Ovalduct on each end.

Radius, 2 3/8 inch. Offset back to end, 2 1/8 inches.

2137	\$53.50	25	100	17
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### No. 2134 90° Internal Elbows



Fits No. 2133 coupling and Nos. 2156, 401, and 2181 connectors.

Radius, 1 1/4 inches. Offset, back to end, approximately 2 1/2 inches.

2134	\$28.52	25	100	15
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### No. 2180 Box Connectors



With 1/2-inch Bondnut. Will take Ovalduct into conduit or 1/2-inch K.O.'s.

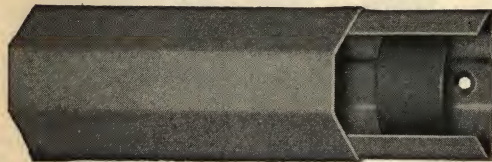
2180	\$16.00	10	100	14
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## National Florduct



No. 711-A



No. 733-A

Florduct makes practical surface floor wiring across aisles and will stand the abuse of hand trucks and general office traffic. Consists of two pieces, base and capping so formed as to snap together, the capping snapping over the base. Capping is a ramp like plate offering the minimum of obstruction.

Neutral gray finish can be painted to match or harmonize with any given surface.

**No. 711A** capacity, 3 No. 12 or 14 wires, 6 No. 16 wires, 8 No. 18 wires. Four twisted pairs inside telephone wires; 20 annunciator wires.

**No. 733-A** capacity, 3 No. 6 wires, 7 No. 8 wires, 10 No. 10, 12 or 14 wires, 20 No. 16 wires, 24 No. 18 wires. Eight twisted pair inside telephone wires. Cable up to 26 pair; 50 annunciator wires.

Unit package, 8 $\frac{1}{4}$  feet. Standard package, 100 feet.  
No. 711-A, Wt. Std. Pkg., 38 Lb. .... per 100 feet **\$24.00**  
No. 733-A, Wt. Std. Pkg., 78 Lb. .... per 100 feet **27.20**

## National Florduct Fittings

No. 738-B Small  
Internal Adapter  
ElbowNo. 352-F Base-  
board Junction BoxNo. 766-BA Out-  
let Extension  
Cap

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt., Lb. Std. Pkg.
738-B	\$13.00	For No. 711-A Florduct only. For making bends from Florduct on floor to open wiring of No. 333 metal molding on baseboard. Furnished with fiber bushing to be used with open wiring.....	5	20	1 $\frac{1}{4}$
352-F	86.50	For No. 711-A Florduct only. For branch from top to face of baseboard. Similar to No. 352 but provided with opening for No. 333 and elbow cap	5	20	9
766-BA	40.00	For No. 711-A or No. 733-A Florduct. Used as junction fitting between Florduct and the outlet from which extension is made. Arranged for mounting on wood floor. May also be used as a flat elbow or junction of Florduct.....	10	20	4

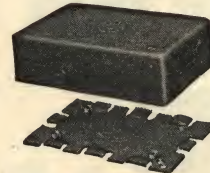
## National Florduct Fittings



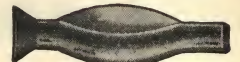
No. 702 Adapter



No. 704 Adapter

No. 765-A Outlet  
Extension CapNo. 740A Large  
Internal Adapter  
ElbowNo. 839 Utility  
BoxNo. 740-AR  
Adapter

No. 715 Strap



No. 324 Rawl Drive

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt., Lb. Std. Pkg.
702	\$13.00	For No. 711-A and No. 733-A Florduct. For connecting and fastening No. 765 extension cap to $\frac{1}{2}$ inch threaded outlet on floor box.....	10	20	1 $\frac{1}{4}$
703	16.00	Same as No. 702 above except for $\frac{3}{4}$ -inch threaded outlet on floor box.....	10	20	1 $\frac{1}{4}$
704	24.00	For No. 711-A or No. 733-A Florduct. Used with No. 703 for 1 inch threaded outlet on floor box.....	10	20	4
765-A	40.00	For No. 711-A Florduct only. Used as junction fitting between Florduct and the outlet from which extension is made. Arranged for mounting on wood floor. May be used as flat elbow or junction of Florduct runs.....	5	20	5 $\frac{1}{2}$
740-A	22.00	For No. 733-A Florduct only. For making bends from Florduct on floor to molding on wall or baseboard, with twistouts in base for $\frac{1}{2}$ and $\frac{3}{4}$ inch quarter round.....	5	20	1 $\frac{1}{2}$
839	84.00	For No. 733-A Florduct only. Combination $\frac{1}{2}$ and 1 inch KO in base. Size 4 $\frac{7}{8}$ x3 $\frac{3}{8}$ inches. Depth, 1 $\frac{3}{8}$ inches..	1	10	10
740-AR	25.00	For No. 733-A Florduct only. No. 888 to 333 metal molding used with No. 740-A.....	10	20	2 $\frac{1}{2}$
352	44.00	For No. 733-A Florduct only. With combination $\frac{1}{2}$ inch conduit and drop cord eyelet. Four twistouts for molding or Xtensionduct.....	5	20	7

## Fastenings

715	5.00	For No. 711-A Florduct Strap.	50	500	7
745-A	5.00	For No. 733-A Florduct only. Strap.....	50	500	7
324	8.60	Rawl drive.....	100	100	2



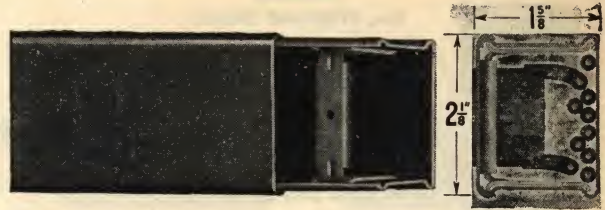
## National Florduct Potential Fittings



No.	Per 100	Description	Unit	Std. Pkg.	Wt. Lb.
739-A	\$16.00	For open wiring to No. 733 Florduct. For telephone cables up to 2-26 pair telephone cable. Furnished with fiber bushing to be used with open wiring. Twistouts for 1/2 and 3/4 inch quarter round.	5	20	1 1/2
751-A	44.00	Will take up to two pair telephone cables.	1	10	4
*750-TA	56.00	†Sheath has opening for up to 26 pair telephone cable.	1	10	4 1/2
*749-A	90.00	†Service fitting.	1	10	4 1/2
*750-A	56.00	†Sheath has .422 opening.	1	10	4 1/2
753-A	10.00	For use with Nos. 749-A, 750-A, 750-BA and 750-TA. To make fitting watertight.	10	50	2 1/4
*750-BA	48.00	Same as No. 750-A without sheath, 1/2 inch opening for 1/2 inch conduit.	1	10	4
764-A	254.00	<b>High Potential Fittings</b> For standard 3/4 inch floor receptacle and fittings. Also used with Nos. 768-A, 769-A and 770-A box assemblies.	1	10	9
761	121.00	<b>Auxiliary Fittings</b> For Nos. 711-A and 733-A Florduct. T-slot.	1	10	7

\*To make this fitting watertight, No. 753-A gasket may be used.  
 †For Nos. 711-A or 733-A. To be used at the new outlet location for protecting wires leaving Florduct and extending to apparatus on desks, etc. Equipped with four triple twistouts used at ends, for through runs or for right angles branches.

## No. 1700 National Surfaceduct



Made in two pieces, base and capping.  
 Capping is secured in place by bridges, 4 of which are furnished with each length.  
 Has 1/2 and 3/4-inch knockouts and mounting holes in base.  
 Neutral gray finish.  
 Packed 5 lengths, 10 feet long (50 feet) in sealed container.

### Capacities

Single Conductor No.	6	8	10	12	14
Without Devices	6	10	10	10	10
Without Devices	4	5	10	10	10
No. 1700, Weight per Std. Pkg., 53 Pounds	.per 100 \$45.00				

## No. 1700 National Surfaceduct Fittings

**No. 1719 Bushings**  
 Used on ends of Surfaceduct in No. 1739 and No. 1740 boxes.  
 Carton, 2.  
 Standard package, 10.  
 No. 1719, Weight per Std. Pkg., 1 Pound. . . . .per 100 \$6.00

**No. 1731 Bridges**  
 For securing capping, mounting devices and as a wire retainer.  
 Furnished with Surfaceduct and all fittings.  
 Extra bridges should be ordered for short lengths of duct.  
 Carton, 10. Standard package, 50.  
 No. 1731, Weight per Std. Pkg., 2 Pounds . . .per 100 \$5.00

**No. 1744 Couplings**  
 Carton, 5.  
 Standard package, 20.  
 Weight per standard package, 1 pound.  
 No. 1744. . . . .per 100 \$7.00

**No. 1790 Hangers**  
 Carton, 2.  
 Standard package, 10.  
 Weight per standard package, 2 pounds.  
 No. 1790. . . . .per 100 \$26.00

**No. 1728 Side Feeds**  
 Can be used with No. 1780 as an end box.  
 Use No. 1744 coupling to connect.  
 Carton, 1.  
 Standard package, 10.  
 Weight per standard package, 3 pounds.  
 No. 1728. . . . .per 100 \$13.60

**No. 1736 90° Flat Elbows**  
 Use No. 1744 coupling to connect.  
 Carton, 1.  
 Standard package, 10.  
 Weight per standard package, 8 pounds.  
 No. 1736. . . . .per 100 \$60.00

**No. 1737 External Elbows**  
 Use No. 1744 coupling to connect.  
 Carton, 1.  
 Standard package, 10.  
 Weight per standard package, 8 pounds.  
 No. 1737. . . . .per 100 \$60.00

**No. 1738 External Elbow**  
 Use No. 1744 coupling to connect.  
 Carton, 1.  
 Standard package, 10.  
 Weight per standard package, 12 pounds.  
 No. 1738. . . . .per 100 \$62.00

Continued



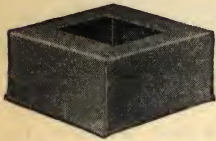
**No. 1700 National Surfaceduct Fittings**

Continued

**No. 1780 End Blank**

Can be used with No. 1728 as an end box.  
Carton, 2.  
Standard package, 10.  
Weight per standard package, 4 pounds.

No. 1780.....per 100 \$36.00

**No. 1700 National Surfaceduct Boxes****No. 1740 Device Boxes**

Dimensions: 6 inches square; 2¾ inches deep.  
Has twistouts for Series 1700 Surfaceduct and Nos. 333 and 888 metal molding.

Has 2-gang opening in cover for 30, 50, and 60-ampere receptacles.

Also used with thinwall, rigid, and flexible conduit.

Carton, 1.

Standard package, 10.

Weight per standard package, 30 pounds.

No. 1740.....per 100 \$460.00

**No. 1739 Junction Boxes**

Dimensions: 6 inches square; 2¾ inches deep.

Has twistouts for Series 1700 Surfaceduct and Nos. 333 and 888 metal molding.

Also used with thinwall, rigid, and flexible conduit.

Carton, 1.

Standard package, 10.

Weight per standard package, 30 pounds.

No. 1739.....per 100 \$426.00

**No. 1735 Combination Tee and Offset Service Fittings**

For use as a tee and as a method of installing devices in an offset position.

Takes all device covers.

Carton, 1.

Standard package, 10.

Weight per standard package, 10 pounds.

No. 1735.....per 100 \$200.00

**No. 1700 National Surfaceduct Adapters****No. 1715 Conduit Adapters**

Has 1½-inch threaded hub. Takes rigid conduit into Nos. 1739 and 1740 Surfaceduct twistouts.

Carton, 1.

Standard package, 10.

Weight per standard package, 10 pounds.

No. 1715.....per 100 \$164.00

**No. 1700 National Surfaceduct Device Covers**

Furnished with two bridges and screws.

**No. 1701 Single Receptacle Covers**

Carton, 1. Standard package, 10.

Weight per standard package, 4 pounds.

No. 1701.....per 100 \$30.00

**No. 1702 Duplex Receptacle Covers**

Carton, 1. Standard package, 10.

Weight per standard package, 4 pounds.

No. 1702.....per 100 \$30.00

**No. 1703 Toggle Switch Covers**

Carton, 1. Standard package, 10.

Weight per standard package, 4 pounds.

No. 1703.....per 100 \$30.00

Continued

**No. 1700 National Surfaceduct Device Covers**

Concluded

Furnished with 2 bridges and screws.

**No. 1704 Surface Device Covers**

Carton, 1. Standard package, 10.

Weight per standard package, 4 pounds.

No. 1704.....per 100 \$30.00

**No. 1705 Screw Type Sign Receptacle Covers**

Carton, 1. Standard package, 10.

Weight per standard package, 4 pounds.

No. 1705.....per 100 \$30.00

**No. 1706 Surface Type Sign Receptacle Covers**

Carton, 1. Standard package, 10.

Weight per standard package, 4 pounds.

No. 1706.....per 100 \$30.00

**No. 1707 Condulet Device Covers**

Will take all Obround condulet devices.

Carton, 1. Standard package, 10.

Weight per standard package, 4 pounds.

No. 1707.....per 100 \$30.00

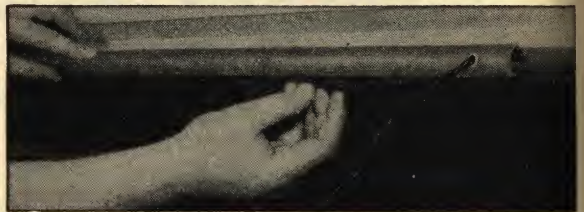
**No. 1708 Fixture and Drop Cord Covers**

Has combination ½-inch knockouts and drop cord eyelet.

Carton, 1. Standard package, 10.

Weight per standard package, 4½ pounds.

No. 1708.....per 100 \$30.00

**No. LT-606 National Lopo-Trim Raceways**

A hollow steel quarter-round raceway used to carry low potential wires such as telephone, inter-communication, and buzzer on top of the baseboard. Also used as a toe-plate where wall or baseboard meet, as a low potential wiring raceway at chair-rail moulding, and as a quarter-round trim above or beneath (or both) installations of Plug-In Strip.

Steel prongs exert a tension that holds the trim snugly in place.

Wiring can be brought out anywhere along the raceway. Merely drill a hole through the rounded surface, insert a standard grommet, and bring the wires out.

Furnished in six-foot sections which match perfectly for continuous installation. Sections are cut to fit and corners are mitered identically like wood quarter-round.

Cross-sectional dimensions: 1¼x¾ inches.

Has neutral satin gray finish, matching Plug-In Strip, and harmonizes with all tones used in interior decoration. Can be repainted to match baseboard, floor, or walls.

Standard package, 17 six-foot lengths. Weight per standard package, 20 pounds.

No. LT-606.....per six-foot length \$1.32



## National Plug-In Strips

6-Foot Length, With Outlet Every 18 Inches  
No. CF2-606-18

3-Foot Length, With Five Outlets on 6-Inch Spacing  
No. CF2-603-6

Available in 6-foot lengths with outlets every 18 inches. Also available in 3-foot lengths with five outlets on 6-inch spacing. May be installed on top of the baseboard or may be mounted directly on the surface. May be cut to fit right on the job and is connected together by means of connection blocks which are furnished with each unit. (Except end blank.)

Listed and approved by the Hydro Power Commission, the Underwriters' Laboratories, Inc., and complies with the regulations of the National Electric Code.

The baked enamel satin gray finish blends with any color of interior decoration. May also be repainted to desired shade or color.

Furnished with 2 No. CF2-607 mounting clips and 3 No. CF2-645 mounting straps.

Carton, 1 length. Standard package, 10 lengths.

No.	CF2-606-18	CF2-603-6
Per Length.....	\$4.44	3.72
Length.....feet	6	3
Plug Insertions per Length.....	4	5
Weight per Standard Package.....pounds	26	15



### No. CF2-2 Connection Blocks

Terminal block for connecting adjoining lengths of Plug-In Strip and fittings. All fittings are furnished. (Except end blanks). Carton, 10. Standard package, 100.

No.	CF2-2
Each.....	\$ .35



### No. CF2-607 Mounting Clips

Clips which fasten to the back of Plug-In Strip on the surface. Mounting straps furnished with every length of Plug-In Strip. Carton, 50. Standard package, 500.

No.	CF2-607
Each.....	\$ .03



### No. CF2-645 Mounting Straps

For use when mounting Plug-In Strip on the surface. Furnished with every length of Plug-In Strip. Carton, 50. Standard package, 500.

No.	CF2-645
Each.....	\$ .02

## National Plug-In Strip Fittings

### No. CF2-618 Center Feed Junction Boxes



Has 1/2-inch conduit knockout in base. Overall length, 11 inches.

Furnished with two connection blocks and two jumpers for connecting to circuit.

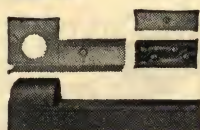
Carton, 5. Standard package, 50.

Weight per standard package, 25 pounds.	
No. CF2-618.....	each \$1.70

### End Feed Junction Boxes



No. CF2-616-L



No. CF2-616-R

For bridging doorways, fireplaces, etc., or used as an end circuit feed. Has 1/2-inch knockout in base.

Overall length, 6 3/8 inches.

Furnished with connection block for connecting to adjoining length of Plug-In Strip.

Carton, 5. Standard package, 50. Weight per standard package, 15 pounds.

No.	CF2-616-L	CF2-616-R
Each.....	\$ .90	.90

Continued

## National Plug-In Strip Fittings

Concluded

### Straight End and 90° Junction Boxes



No. CF2-617-L



No. CF2-617-R

For use as a surface mounted feed particularly for commercial installations.

Overall length, 5 1/2 inches.

Has 1/2-inch conduit knockouts on end and rear for connection of any type wiring.

Furnished with connection block for connecting to adjoining Plug-In Strip.

Carton, 5. Standard package, 50. Weight per standard package, 13 pounds.

No.	CF2-617-L	CF2-617-R
Each.....	\$ .90	.90

### No. CF2-637 Exterior Elbows



Two-piece capping elbow, over base. Each capping leg of elbow acts as a coupling cover to adjoining length of Plug-In Strip.

Furnished with 2 connection blocks. Overall length of elbow legs, 5 inches.

Carton, 5. Standard package, 50. Weight per standard package, 19 pounds.

No. CF2-637.....	each \$1.30
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### No. CF-2-638 Interior Elbows



Two-piece capping elbow, over base. Each capping elbow acts as a coupling cover to adjoining length of Plug-In Strip.

Furnished with 2 connection blocks. Overall length of elbow legs, 5 3/4 inches.

Carton, 5. Standard package, 50. Weight per standard package, 21 pounds.

No. CF2-638.....	each \$1.30
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### No. CF2-644 Couplings



Covers open ends of adjoining lengths of Plug-In Strip.

Furnished with connection block for connecting adjoining sections of Plug-In Strip.

Overall length, 5 inches.

Carton, 10. Standard package, 50. Weight per standard package, 8 pounds.

No. CF2-644.....	each \$ .50
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### No. CF2-680 End Blank and Wire Nuts



Covers cut-back opening at termination of Plug-In Strip runs.

Furnished with two wire nuts for insulating conductor ends.

Overall length, 2 1/2 inches.

Carton, 5. Standard package, 50. Weight per standard package, 4 pounds.

No. CF2-680.....	each \$ .32
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### No. CF2-623 Cutting Gages



For use in cutting back Plug-In Strip and capping to desired measurements.

Carton, 1. Standard package, 1. Weight per standard package, 1 pound.

No. CF2-623.....	each \$3.00
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## Appleton Ovaltube and Fittings

Schedule OT  
Drawn Steel  
Three-Wire



Nominal outside dimensions,  $1\frac{1}{2}$ -inch high by  $3\frac{1}{2}$ -inch wide by 10 feet long. Standard package, 100 feet. Weight per 100 feet, 35 pounds.

## 4-Inch Round Box

Depth,  $\frac{3}{4}$ -inch with ears, and 6 knockouts in side for Ovaltube, Ovalduct, and Ovalflex.

No. 403-A has fixture stud.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
403	50	21
403-A	50	25



## No. 408 4-Inch Round Extension Ring

Depth,  $\frac{3}{4}$ -inch with ears, and 6 knockouts in side for Ovaltube, Ovalduct, and Ovalflex.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
408	100	34



## No. 400 4-Inch Round Raised Open Cover

Without ears, with 6 oval knockouts in side for Ovaltube, Ovalduct, and Ovalflex.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
400	100	27



## No. 405 4-Inch Round Raised Open Cover

With ears. Opening is  $2\frac{7}{8}$  inches in diameter and  $\frac{3}{4}$ -inch deep overall having 6 oval knockouts in side, also  $2\frac{7}{8}$ -inch flat disc fitting flush with rim and held in place by two  $\frac{1}{2}$ -inch flat head screws.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
405	50	28



## No. 404 4-Inch Square Raised Open Cover

Without ears. With 6 oval knockouts in side for Ovaltube, Ovalflex, and Ovalduct.

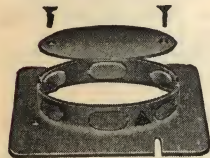
No.	Std. Pkg.	Wt. Lb. Std. Pkg.
404	100	37



## No. 406 4-Inch Square Raised Open Cover

With ears. Opening is  $2\frac{7}{8}$  inches in diameter and  $\frac{3}{4}$ -inch deep overall having 6 oval knockouts in side, also  $2\frac{7}{8}$ -inch flat disc fitting flush with rim and held in place by two  $\frac{1}{2}$ -inch flat head screws.

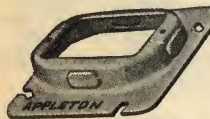
No.	Std. Pkg.	Wt. Lb. Std. Pkg.
406	50	38



## No. 401 4-Inch Square Cover

Furnished in galvanized finish only. Raised  $\frac{3}{4}$ -inch high for one rectangular base switch or receptacle with one oval knockout in each side and one knockout in each end for Ovaltube, Ovalduct, and Ovalflex.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
401	100	39



## No. 402 4-Inch Square Cover

Furnished in galvanized finish only. Raised  $\frac{3}{4}$ -inch high for two rectangular base switches or receptacles and with one oval knockout in each side and one knockout in each end for Ovaltube, Ovalduct, and Ovalflex.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
402	100	33



## Appleton Ovaltube Fittings

Schedule OT  
Three-Wire

## No. 407 Switch Box

Drawn Steel  
Galvanized Finish Only

Has one oval knockout in each end and two in each side for Ovaltube, Ovalduct, and Ovalflex; also  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.

No.	Length	Width	Depth	Std. Pkg.	Wt. Lb. Std. Pkg.
407	$3\frac{3}{4}$	2	$1\frac{1}{2}$	50	30



## No. 101 90-Degree Unitary Elbow

Cast Aluminum

Used with  $\frac{1}{2}$ -inch conduit or junction box. For Ovaltube, Ovalduct, and Ovalflex.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
101	100	13



## No. 102 90-Degree Internal Elbow

Cast Aluminum

Does not require any extra couplings. For Ovaltube, Ovalduct, and Ovalflex.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
102	100	13



## No. 107 90-Degree Flat Elbow

Cast Aluminum

Does not require any extra couplings. For Ovaltube, Ovalduct, and Ovalflex.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
107	100	15



## Twinn 90-Degree Elbow

Cast Aluminum

Has  $\frac{3}{4}$ -inch internal standard pipe thread. For Ovaltube, Ovalduct, and Ovalflex.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
103	100	33
103-A	25	16



## No. 105 90-Degree Adjustable No-Thread Elbow

Cast Aluminum

For  $\frac{3}{4}$ -inch conduit. Has an adjustment of 3 inches up or down allowing to reach ceiling height at time of lathing.

Will take the place of junction box in columns or ceilings.



No.	For Conduit Inches
105	$\frac{3}{4}$

## No. 106 Connector Ovaltube to Oval Knockouts

Drawn Steel

Connector Ovaltube to oval knockouts in Nos. 403, 403-A, 407 boxes; also Nos. 400, 401, 402, 404, 405, 406, and 8459-D covers.

No.	Standard Package	Weight Pounds Standard Package
106	100	5



## No. 104 Squeeze Type Coupling

Drawn Steel

Length,  $1\frac{1}{4}$  inches for Ovaltube, Ovalduct, and Ovalflex.

No.	Standard Package	Weight Pounds Standard Package
104	100	7



## No. 108 Squeeze Type Box Connector

Malleable

Furnished with  $\frac{1}{2}$ -inch locknut. Will take Ovaltube into conduit or  $\frac{1}{2}$ -inch knockouts.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
108	100	10



## No. 109 Coupling

For use with box connector or elbows to  $\frac{1}{2}$ -inch conduit.

No.	Std. Pkg.	Wt. Lb. Std. Pkg.
109	100	5





## Appleton Ovaltube Fittings

Schedule OT

### No. 110 Toggles

With Wire Fastener



Used for holding tile, plasterboard, wire lath, etc., for supporting Ovaltube, Ovalduct, and Ovalflex.

No.	Standard Package	Weight Pounds Standard Package
110	500	12

### No. 115 Strap Fasteners

No.	Standard Package	Weight Pounds Standard Package
115	1000	9

### Fishing Cable

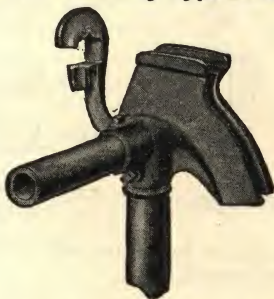


Coil the loop around hand until the bail pulls against spiral housing. Doing this will adjust the rigidity to meet the hardest kind of fishing.

Cable has been tested around five 90-degree elbows and six 45-degree elbows in a run of Ovalduct 20 feet long.

No.	SIZE, INCHES		Length Feet	Std. Pkg. Lengths Feet
	Cable	Spiral Housing		
201	1/16	3/16	25	10
202	1/16	3/16	50	10
203	3/32	3/16	100	5

### No. 215-A Hickey Type Benders



Made to form tubing on the narrow edge to a 90-degree perfect bend. No inching of the tube is required.

The upper portion of the bender is designed for the purpose of offsetting Ovaltube on the flat side without kinking.

It is essential, on Ovaltube installations, that the tube be free from kinks when pulling circuit wires to keep tube in perfect condition.

### Stub Concrete Nails

Used for fastening Ovaltube to concrete or brick walls. Standard package, 6-pound bags.

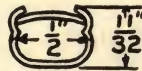
## No. 200 Wiremold Raceways

Made of .025-inch steel.

Standard finish. Wiremold buff.

Furnished in 5-foot lengths.

Packed 100 feet in a carton. Weight per 1000 feet, 180 pounds.



Wire No.	6	8	10	12	14	16	18	19
Single Conductor Capacity:								
Type R, RH				2	2	4	4	
Type T, RU				2	2	6	8	
Twisted Pair Capacity:								
Type R or RH						2	2	2
No. 200	per foot \$.121							

## No. 200 Series Midget Size Wiremold Fittings



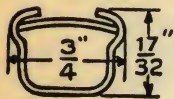
No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
200F	\$178.60	Flexible Section 18 in. Long...	10	3 1/2	1
201	2.30	Coupling	50	1/4	10
202	2.60	Bushing	200	1/2	50
203	2.90	Supporting Clip	50	1/4	10
205	1.90	One Hole Strap	50	1/4	10
206	1.90	Connection Cover	50	1/4	10
211	22.40	90° Flat Elbow	50	2 1/4	5
211LH	47.10	Internal Twisted Elbow for 90° Twist with 90° Turn	20	1 1/2	5
211RH	47.10	Internal Twisted Elbow for 90° Twist with 90° Turn	20	1 1/2	5
214	24.70	Pull Box	20	1 1/2	5
217	27.60	Adjustable Internal Elbow with One Scored Leg	50	5 1/2	5
218	24.00	External Elbow	50	2 1/4	5
228	54.50	Adjustable Junction Box	20	2 1/8	5
240	138.40	Single Pole Switch with Box, 10A, 125V, 5A, 250V	20	5 3/4	1
242	68.30	Utility Box	20	3 1/4	1
243	104.50	Duplex Receptacle, 15A, 125V, 10A, 250V	20	4 1/2	1
251	75.50	Extension Adapter	20	5 1/2	1
289	21.80	Reducing Connector, from No. 500 Twistout to No. 200 Wiremold	20	3/4	5
289A	3.10	Adapter	50	1/2	10
600	*5.80	Bender for Nos. 200, 500, 700	1	2 1/2	..
610	*9.50	Mitre Box	1	3 3/4	..
611	79.90	Mitre Box Guide Fingers	10	1/2	2
WE	118.80	Wiremold Enamel in 1-Pint Cans	5	6 1/4	1

\*Price each.





## No. 500 Wiremold Raceways



Made of .040-inch steel.

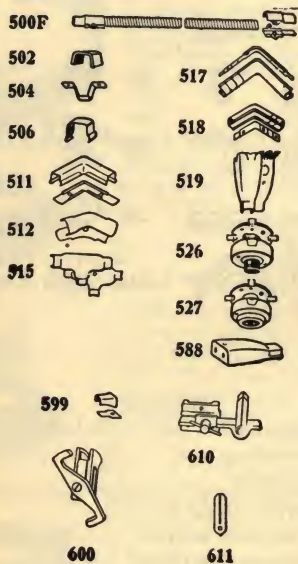
Standard finish, Wiremold buff.

Furnished in 10-foot lengths.

Packed 100 feet in a carton. Weight per 1000 feet, 320 pounds.

Wire No.	6	8	10	12	14	16	18	19
Single Conductor Capacity								
Types R or RH	..	..	2	3	4	6	6	..
Types T or RU	..	2	4	6	6	10	10	..
Twisted Pair Capacity								
Types R or RH	..	..	..	..	..	2	2	3
No. 500	per foot \$.142							

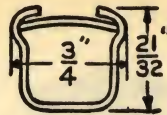
## No. 500 Series Wiremold Fittings



No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
500F	\$182.20	Flexible Section 18 In. Long...	10	5 1/4	1
502	2.90	Bushing	200	1 1/2	50
504	1.80	One or Two Hole Strap	500	8 3/4	50
506	1.80	Connection Cover	200	1 3/4	5
511	23.30	90° Flat Elbow	50	7 1/4	5
512	26.90	45° Flat Elbow	20	1 1/2	5
515	34.80	Tee	50	8 1/4	5
517	26.80	Adjustable Internal Elbow	50	9 1/2	5
518	25.20	Adjustable External Elbow	50	7	5
519	64.70	Corner Box	20	4 1/4	5
526	95.90	Keyless Receptacle, 660W, 250V	50	19 1/2	5
527	130.10	Plug Receptacle, 15A, 125V, 10A, 250V	50	16 3/4	5
588	50.20	Open Work Coupling	20	3 1/4	5
599	5.80	Connector for Metal Moulding Fittings	20	1	5
600	*5.80	Bender for Nos. 200, 500, 700	1	2 1/2	..
610	*9.50	Mitre Box	1	3 3/4	..
611	79.90	Mitre Box Guide Fingers	10	1/2	2
WE	118.80	Wiremold Enamel in 1-Pint Cans	5	6 1/4	1

\*Price each.

## No. 700 Wiremold Raceways



Made of .040-inch steel.

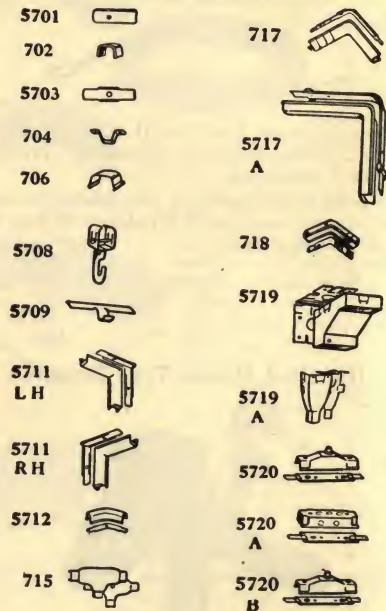
Standard finish, Wiremold buff.

Furnished in 10-foot lengths.

Packed 100 feet in a carton. Weight per 1000 feet, 360 pounds.

Wire No.	8	10	12	14	16	18	19
Single Conductor Capacity							
Types R or RH	..	2	4	4	10	10	..
Types T or RU	..	3	6	8	8	16	18
Twisted Pair Capacity							
Type R or RH	..	..	..	..	4	4	4
No. 700	per foot \$.161						

## Nos. 5700 and 700 Wiremold Fittings



Fittings with numbers beginning with 57 are for use with No. 500 and 700 Wiremold.

No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
5700F	\$188.80	Flexible Section 18 In. Long.	10	5 3/4	1
5701	2.90	Coupling	200	3 3/4	50
702	3.10	Bushing	200	3/4	50
5703	3.10	Supporting Clip	500	12 3/4	50
704	3.10	One or Two Hole Strap	500	15 3/4	50
706	2.20	Connection Cover	200	2	50
5708	29.80	Fixture Hook	20	1 1/2	10
5709	13.90	Ground Clamp	20	3 5/8	5
711	26.20	90° Flat Elbow	50	8 1/8	5
5711LH	47.90	Internal Twisted Elbow for 90° Twist with 90° Turn	20	3 3/4	5
5711RH	47.90	Internal Twisted Elbow for 90° Twist with 90° Turn	20	3 3/4	5
5712	35.60	45° Flat Elbow	20	1 3/4	5
715	39.20	Tee	50	9 1/2	5
717	29.00	Adjustable Internal Elbow with One Scored Leg	50	10 1/2	5
5717A	79.90	Internal Pull Elbow	10	4 1/4	1
718	26.80	Adjustable External Elbow with One Scored Leg	50	8	5
5719	73.40	Corner Box	20	8 1/4	5
5719A	63.80	Streamline Corner Box	20	5 1/2	5
5720	76.25	Narrow Fitting	50	10 1/4	5
5720A	87.80	Narrow Fitting	20	4 3/4	5
5720B	76.20	Narrow Fitting	50	10	5

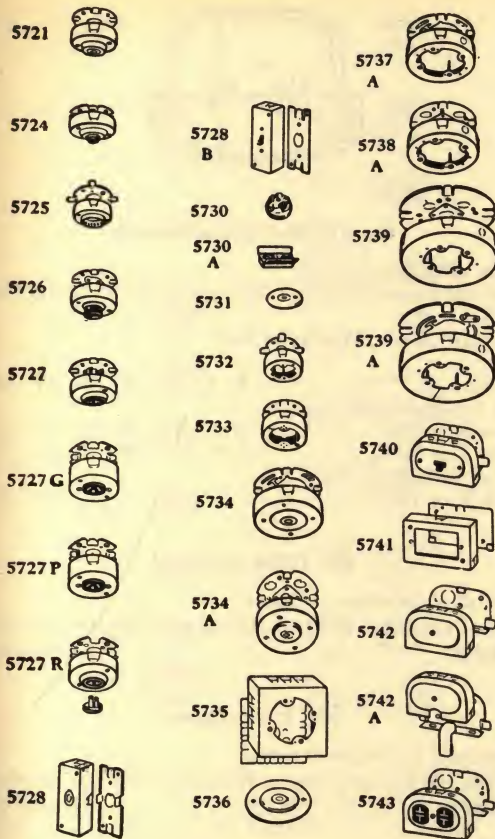
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## Nos. 5700 and 700 Series Wiremold Fittings

## Nos. 5700 and 700 Series Wiremold Fittings

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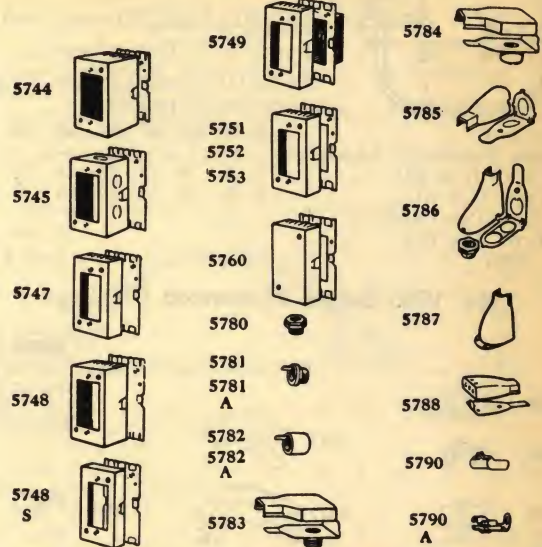


Fittings with numbers beginning with 57 are for use with Nos. 500 and 700 Wiremold.

No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
5721	\$55.80	Utility Box.....	50	16 1/4	5
5725	127.80	Receptacle Base, 660W, 250V.....	50	20 3/4	5
5726	95.80	Keyless Receptacle, 660W, 250V.....	50	20 3/4	5
5727	130.10	Plug Receptacle, 15A, 125V, 10A, 250V.....	50	19 1/2	5
5727G	287.50	Receptacle, 2-Wire, 3-Pole with Ground.....	10	5 1/4	1
5727P	287.50	Receptacle, 3-Wire, 3-Pole without Ground.....	10	5 1/2	1
5727R	233.20	Radio Receptacle, Plug Cap Furnished.....	10	4 1/2	1
5728	63.80	Utility Box.....	50	17 1/2	10
5728B	153.20	Single Pole Switch with Box, 10A, 125V, 5A, 250V.....	10	4 3/4	1
5730	31.80	Connector Block, 660W, 250V.....	20	1 1/8	5
5730A	63.80	Connector Block, 660W, 250V.....	20	1 1/8	5
5731	18.80	Blank Cover.....	50	3 3/4	5
5732	63.80	Outlet Box.....	50	13 1/4	5
5733	66.10	Outlet Box.....	50	14 1/4	5
5734	103.90	Blank Extension Box.....	20	13 1/8	5
5734A	100.20	Utility Box.....	20	13 1/2	5
5735	141.50	Distribution Box.....	20	17 1/2	1
5736	26.90	Blank Cover.....	50	9 3/4	5
5737A	103.90	Extension Box.....	50	38 1/2	5
5738A	94.40	Fixture Box.....	50	41 1/2	5
5739	116.20	Fixture Box.....	20	21 3/4	5
5739A	134.30	Extension Box.....	20	20 3/4	5
5740	164.00	Single Pole Switch and Box, 10A, 125V, 5A, 250V.....	20	10 1/2	1
5741	109.00	Switch and Receptacle Box.....	20	11 3/4	1
5742	90.80	Junction Box.....	20	8	5
5742A	125.50	Adjustable Junction Box.....	20	8 1/4	5
5743	141.50	Duplex Receptacle and Box, 15A, 125V, 10A, 250V.....	20	11	5

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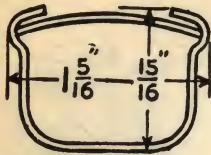
Fittings with numbers beginning with 57 are for use with No. 500 and 700 Wiremold.

No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
5744	\$155.40	Extra Deep Switch and Receptacle Box.....	20	19 1/2	1
5744-2	263.50	Extra Deep Switch and Receptacle Box.....	10	12 1/2	1
5744-3	311.40	Extra Deep Switch and Receptacle Box.....	10	15 3/4	1
5744S	130.70	Switch and Receptacle Box....	20	16	1
5744S2	261.40	Switch and Receptacle Box 2-Gang.....	10	11	1
5744S3	392.00	Switch and Receptacle Box 3-Gang.....	10	12	1
5745	113.30	Combination Switch and Receptacle Box.....	20	13 1/2	1
5747	90.70	Shallow Switch and Receptacle Box.....	20	11 1/2	1
5747-2	203.30	Shallow Switch and Receptacle Box.....	10	8 1/2	1
5747-3	243.10	Shallow Switch and Receptacle Box.....	10	10 1/4	1
5748	101.20	Switch and Receptacle Box....	20	13 1/2	1
5748-2	211.00	Switch and Receptacle Box....	10	10	1
5748-3	263.60	Switch and Receptacle Box....	10	12 1/4	1
5748S	87.80	Shallow Receptacle Box.....	20	9 3/4	1
5749	167.80	Switch and Receptacle Box....	20	12 1/2	1
5751	90.70	Flush Type Extension Adapter	20	8 1/2	1
5752	229.40	Flush Type Extension Adapter	10	6	1
5753	275.00	Flush Type Extension Adapter	10	7 1/2	1
5760	106.70	Blank Extension Box.....	20	9 1/2	1
5780	22.60	Special Nipple.....	50	2 1/8	5
5781	34.80	Box Connector, 1/2 In. Male...	50	2 3/4	5
5781A	51.60	Box Connector, 3/4-In. Male...	20	2 1/8	5
5782	39.80	Pipe Connector, 1/2-In. Female	50	4 1/2	5
5782A	55.90	Pipe Connector, 3/4-In. Female	20	2 3/4	5
5783	58.10	Elbow Box Connector, 1/2 In. Male.....	20	2 1/2	5
5784	58.10	Elbow Pipe Coupling, 1/2 In. Female.....	20	3 1/2	5
5785	34.80	Combination Connector.....	50	7 1/8	5
5786	83.50	Adjustable Offset Connector...	20	5 1/2	5
5787	61.00	Kick Plate.....	10	3 3/4	1
5788	56.60	Open Work Coupling.....	20	4 3/4	5
5790	16.00	Armored Cable Connector.....	50	2	5
5790A	16.00	Armored Cable Connector.....	50	3	5
600	*5.80	Bender for Nos. 200, 500, 700...	1	2 1/2	..
610	*9.50	Mitre Box.....	1	3 1/4	..
611	79.90	Mitre Box Guide Fingers.....	10	1 1/2	2
WE	118.80	Wiremold Enamel in 1-Pint Cans.....	4	6 1/4	1

\*Price each.



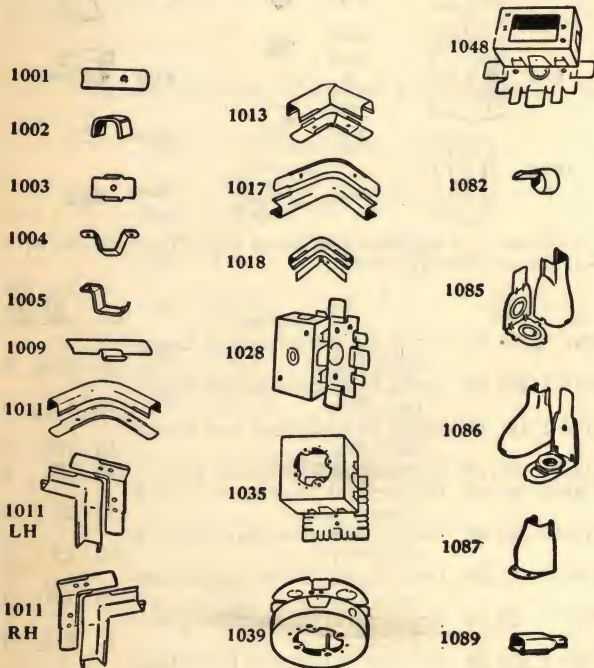
## No. 1000 Wiremold Raceways



Made of .050-inch gage steel.  
Standard finish, Wiremold buff.  
Furnished in 10-foot lengths.  
Packed 100 feet in a carton. Weight per 100 feet, 80 pounds.

Wire No.	6	8	10	12	14	16	18	19
Single Conductor Capacity								
Type R or RH	4	5	6	10	10	24	24	..
Type T or RU	5	8	8	10	10	40	50	..
Twisted Pair Capacity								
Type R or RH						10	10	11
No. 1000	per foot \$.37							

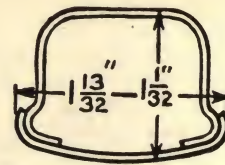
## No. 1000 Series Wiremold Fittings



No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
1000F	\$214.90	Flexible Section 18 In. Long	10	11 1/4	1
1001	8.00	Coupling	100	6 3/4	10
1002	6.60	Bushing	100	1 1/4	10
1003	6.60	Supporting Clip	100	4 1/4	10
1004	12.40	Two Hole Strap	100	5	10
1005	12.40	One Hole Strap	100	3 1/2	10
1009	27.60	Ground Clamp	10	3 1/4	1
1011	67.60	90° Flat Elbow	10	7	1
1011LH	121.30	Internal Twisted Elbow for 90° Twist with 90° Turn.	10	5 1/4	1
1011RH	121.30	Internal Twisted Elbow for 90° Twist with 90° Turn.	10	5 1/4	1
1013	83.40	Adjustable Flat Elbow	10	5 1/4	1
1017	95.90	Internal Elbow	10	8 1/8	1
1018	61.70	External Elbow	10	4	1
1028	121.90	Utility Box	10	9 1/4	1
1035	198.10	Distribution Box	10	19 3/4	1
1039	161.90	Fixture Box	10	11 1/2	1
1048	183.70	Switch and Receptacle Box	10	9	1
1082	99.50	Pipe Connector	10	4	1
1085	51.50	Combination Connector	10	4 1/8	1
1086	125.60	Adjustable Offset Connector	10	6 3/4	1
1087	66.80	Kick Plate	10	5 1/2	1
1089	24.00	Reducing Connector, From No. 1000 Twistout to No. 500 or No. 700 Wiremold.	20	2 3/4	5
610	*9.50	Mitre Box	1	3 3/4	..
611	79.90	Mitre Box Guide Fingers	10	1 1/2	2

\*Price each.

## No. 1100 Wiremold Lighting Strip



## No. 1100B-C Cross Section

Made of .050-inch steel.  
Base has supporting screw knockouts approximately 8-inch centers.

Standard finish, Wiremold buff.

Wire No.	6	8	10	12	14	16	18	19
Single Conductor Capacity								
Type R or RH	3	5	8	10	10	24	24	..
Type T or RU	6	10	10	10	10	40	50	..
Twisted Pair Capacity								
Type R or RH						10	10	11

## No. 1100B Channel

Furnished in 10-foot lengths.

Packed 100 feet in a carton. Weight per 100 feet, 57 pounds.

No. 1100B.....per foot \$.238

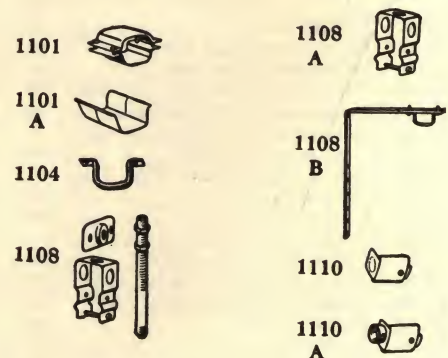
## No. 1100C Cover

Furnished in 10-foot lengths.

Packed 100 feet in a carton. Weight per 100 feet, 26 pounds.

No. 1100C.....per foot \$.119

## No. 1100 Series Wiremold Fittings



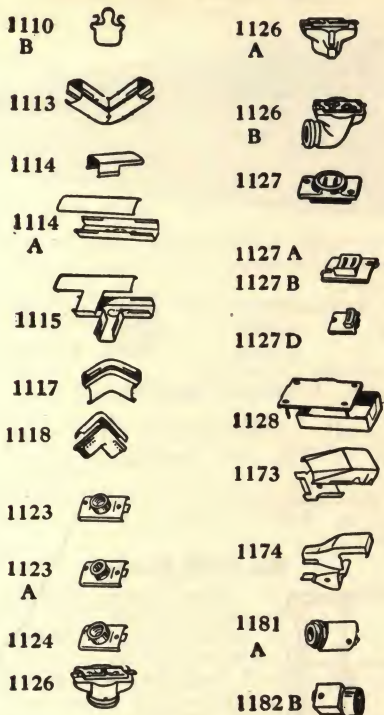
No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
1101	\$37.80	Coupling	20	3 3/4	5
1101A	13.10	Inside Coupling	20	1 3/4	5
1104	12.40	Two Hole Strap	50	2 3/4	10
1108	175.70	Adjustable Hanger Assembly	10	8 1/8	1
1108A	36.40	Hanger Clamp	20	1 1/2	5
1108B	87.80	Bracket Hanger	10	11 3/4	2
1110	30.50	End Fitting	20	1 1/4	5
1110A	53.00	End Connector Fitting	20	2 1/2	5

Continued



## No. 1100 Series Wiremold Fittings

Concluded



No.	Per 100	Description	Qty.	Srd. Pkg. Unit Lb. Pkg. Qty.
1110B	\$18.80	Blank End Fitting.....	20	1/2 5
1113	95.90	Flat Elbow, 56° to 128°.....	10	5 3/4 1
1114	45.00	Turn-Over Connector, No. 1100 to No. 1000.....	20	3 1/8 2
1114A	45.00	Combination Connector, 1/2-Inch Knockout.....	20	6 3/4 5
1115	59.50	Tee, 1/2-Inch Knockout.....	10	5 1
1117	70.40	Internal Elbow.....	10	4 1/4 1
1118	80.30	External Elbow.....	10	2 3/4 1
1123	63.80	Cover Fitting.....	20	2 1/4 5
1123A	63.80	Cover Fitting.....	20	1 3/4 5
1124	66.80	Cover Fitting.....	20	2 3/4 5
1126	86.50	Keyless Socket, 660W, 250V..	20	6 3/4 1
1126A	92.90	Bayonet Reflector Socket, 660W, 250V.....	20	8 1
1126B	159.70	Angle Socket, 660W, 250V....	10	7 1/8 1
1127	61.00	Plug Receptacle, 15A, 125V, 10A, 250V.....	20	2 1
*1127A	79.90	Lumiline Duplex Receptacle, One Terminal.....	20	1 1/4 1
*1127B	92.90	Lumiline Duplex Receptacle, Two Terminals.....	20	1 1/2 1
*1127D	63.80	Lumiline Single Receptacle...	20	3/4 1
1128	143.80	Utility Box.....	10	5 1/4 1
1173	58.10	Adjustable Offset Connector, No. 1100 to No. 1500.....	10	2 1/2 1
1174	50.90	Takeoff Connector, No. 1100 to No. 500 or No. 700.....	10	2 1/8 1
1181A	63.80	Box Connector.....	20	2 1/2 5
1182B	79.90	1-Inch Pipe Connector, Female.....	20	4 5
610	†9.50	Mitre Box.....	1	3 3/4 ..
611	79.90	Mitre Box Guide Fingers.....	10	1/2 2

\*660 W, 250 V. †Each.

## No. 1500 Pancake Wiremold Overfloor Raceways

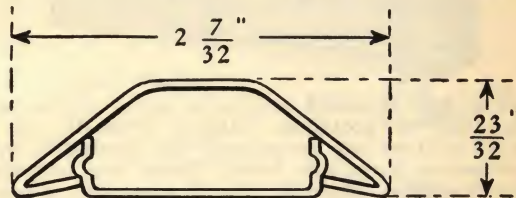


Has supporting screw knockouts approximately 8-inch centers.

Made of .040-inch gage steel. Standard finish, galvanized.

Furnished in 10-foot lengths.

Packed 100 feet in a carton. Weight per 100 feet, 50 pounds.



Wire No.....	8	10	12	14	16	18	22
Single Conductor Capacity:							
Type R or RH.....	..	..	4	4	6	8	..
Type T or RU.....	4	4	6	8	10	14	..
Twisted Pair Capacity:							
Type R or RH.....	..	..	..	..	3	4	5
No. 1500.....	per foot \$3.43						

## No. 1500 Wiremold Fittings



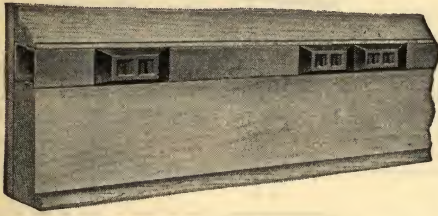
No.	Per 100	Description	Qty.	Srd. Pkg. Unit Lb. Pkg. Qty.
1500WC	\$1.10	Wire Clip.....	200	1/2 20
1502	6.50	Bushing.....	50	1/2 10
1504	11.40	Two Hole Strap.....	100	5 10
1511	31.90	90° Flat Elbow.....	20	4 5
1517	31.90	Internal Elbow.....	20	4 3/4 5
1517A	49.30	Adapter Fitting.....	20	3 3/4 5
1518	38.40	External Elbow.....	20	5 5
1524	143.80	Telephone Outlet.....	10	5 3/4 1
1524A	127.80	Narrow Telephone Outlet...	10	4 1
1542A	54.50	Narrow Junction Box, 1/2-Inch Bushing.....	20	5 5
1542B	405.70	Brass Base for Floor Receptacle Having 3/4-Inch Stem	10	9 1/2 1
1542D	63.80	Junction Box, Deep Type...	20	7 1/2 5
1542E	79.90	Telephone Outlet, Deep Type, 3/8-In. Bushing and 3/8-In. Connector.....	20	7 1/2 5
1542G	90.00	Narrow Telephone Outlet, 1/2-In. Female Bushing and 3/8-In. Connector.....	20	5 5
1543	175.70	Duplex Receptacle, 15A, 125V, 10A, 250V.....	10	7 1
1543A	447.20	Polarized Duplex Receptacle, 3-Wire, 15A, 125V, 10A, 250V.....	10	7 1/2 1
1585	38.50	End Connector.....	20	5 5



### Wiremold Midget Plugmold Raceways

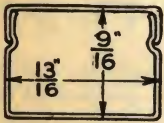
The Wiremold Continuous Outlet System

No. 1900B-C Cross Section



This Midget Plugmold continuous outlet system is for home, office or workshop. Midget Plugmold may be mounted on or set into the surface. The illustration shows it mounted on top of base board. It may also be set into plaster or cement. Made of .025-inch gage steel. Standard finish, Wiremold buff.

Wire No.	12	14	16	18
Single Conductor Cap.: Types R, RH...	2	2	10	10
Types T, RU...	2	2	10	10



No. 1900B Cover

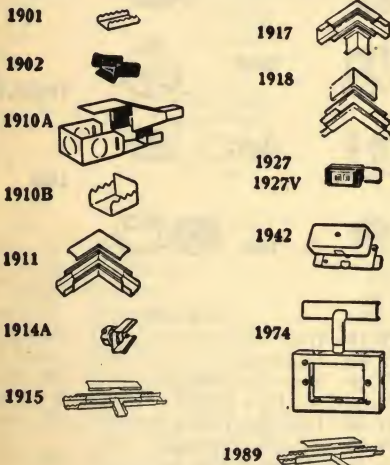
Has supporting screw knockouts approximately 8-inch centers. Furnished in 5-foot lengths.

Packed 100 feet in a carton. Weight per 100 feet, 17 pounds.  
No. 1900B..... per foot \$ .106

No. 1900C Cover

Furnished in 5-foot lengths.  
Packed 100 feet in a carton. Weight per 100 feet, 11 pounds.  
No. 1900C..... per foot \$ .079

### No. 1900 Wiremold Midget Plugmold Fittings



No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
1901	\$5.80	Coupling.....	20	1/4	5
1902	3.10	Fiber Bushing.....	200	1/2	50
1910A	23.30	End Fitting.....	20	3 1/2	5
1910B	11.60	Blank End.....	20	3/4	5
1911	42.70	90° Flat Elbow.....	20	5 3/4	5
1914A	42.70	Connector Fitting.....	20	5 3/4	5
1915	45.00	Tee.....	20	7	5
1917	45.00	Internal Elbow.....	20	5 3/4	5
1918	45.00	External Elbow.....	20	5 3/4	5
1927	49.30	Receptacle, Brown.....	20	1 1/4	5
1927V	66.80	Receptacle, Ivory.....	20	1 1/4	5
1942	55.20	Junction Box.....	20	3 1/4	1
1974	116.20	Takeoff Fitting.....	5	2	1
1989	60.70	Reducing Connector.....	20	6	5
610	*9.50	Mitre Box.....	1	3 3/4	..
611	79.90	Mitre Box Guide Fingers..	10	1/2	2

### Wiremold Plugmold Raceways

The Wiremold Continuous Outlet System

No. 2100B-C Cross Section

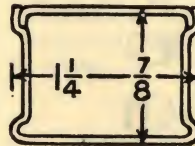


For home, office or work shop. May be mounted on or set into the surface, plaster or cement. Illustrated mounted on base board.

Made of .040-inch gage steel. Standard finish, Wire-mold buff.

Wire No.	6	8	10	12	14	16	18	22
Single Conductor Capacity:								
Types R or RH—with Receptacles.....	6	6	..	..	..	..	..	..
Type T or RU—with Receptacle ..	6	8	10	10	..	..	..	..
Type R or RH—less Receptacles.....	4	6	10	10	24	24	..	..
Twisted Pair Capacity:								
Type R or RH—less Receptacles.....	10	10	11	..	..	..	..	..

No. 2100B Channel



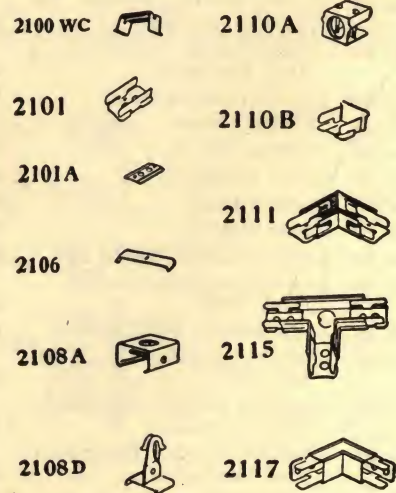
Has 1/2-inch entrance knockouts approximately 8-inch centers. Has supporting screw knockouts approximately 8-inch centers.

In 10-foot lengths, 100 feet in carton, weight, 45 pounds.  
No. 2100B..... per foot \$ .203

No. 2100C Cover

Furnished in 5-foot lengths. Packed 100 feet in a carton.  
No. 2100C Weight per 100 Feet 21 Pounds.... per foot \$ .145

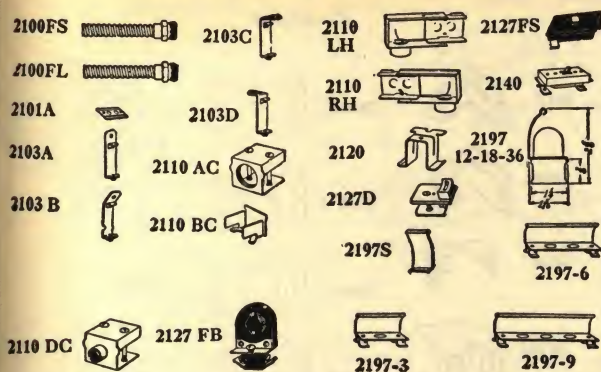
### No. 2100 Wiremold Fittings



No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
2100WC	\$2.90	Wire Clip.....	200	2	20
2101	7.30	Coupling.....	20	2	5
2101A	14.50	Rigid Coupling.....	20	1	5
2106	3.10	Cover Clip.....	200	1 1/2	50
2108A	34.80	Hanger Clamp.....	20	1 1/4	5
2108D	26.20	Fixture Hook.....	20	1 1/2	5
2110A	29.80	End Connector, 1/2-Inch Female Bushing.....	20	3	5
2110B	13.90	Blank End Fitting.....	20	2	5
2111	44.90	90° Flat Elbow.....	20	5	5
2115	111.80	Tee, 1/2-Inch Knockout.....	10	4	1
2117	46.40	Internal Elbow.....	20	5	5



### No. 2100 Wiremold Show Case and Wall Case Lighting Equipment



#### No. 2100-SB Channel

No knockouts. Satin chrome finish.

Furnished in 5-foot lengths.

Packed 50 feet in a carton. Weight per 50 feet, 22 pounds.

No. 2100-SB.....per foot **\$ .464**

#### No. 2100-SC Cover

Not scored. Satin chrome finish.

Furnished in 5-foot lengths.

Packed 100 feet in a carton. Weight per 100 feet, 21 pounds.

No. 2100-SC.....per foot **\$ .304**

#### Fittings

No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
2100FS	\$223.60	Flexible Conduit, 3'.....	5	2 1/2	1
2100FL	\$35.40	Flexible Conduit, 5 1/2'.....	5	4 1/2	1
2101A	14.50	Rigid Coupling.....	20	1	5
2103A	16.00	Clip, Straight.....	50	1 1/2	10
2103B	16.00	Clip, 45° Angle.....	50	1 1/2	10
2103C	16.00	Clip, 90° Angle.....	50	1 1/2	10
2103D	16.00	Clip, U.....	50	1 1/2	10
2110AC	45.00	End Connector.....	20	1 3/4	5
2110BC	29.00	Blank End Fitting.....	20	3/4	5
2110DC	54.50	End Connector.....	20	2 1/4	5
2110LH	79.90	90° Angle Connector.....	10	2 1/2	1
2110RH	79.90	90° Angle Connector.....	10	2 1/2	1
2120	13.10	Receptacle Clamp.....	50	2 1/4	10
2127D	63.80	Lumiline Receptacle.....	20	1	1
2127FB	52.30	Fluorescent Receptacle.....	10	1/2	1
2127FS	63.80	Starter Switch Base for FS-2 or FS-4 Starter.....	10	3/4	1
2140	139.40	S. P. Switch with Box, 10A, 125V, 5A, 250 V.....	20	6	1
2197-12	143.80	*Reflector for 12" Lumiline.....	20	2 1/2	5
2197-18	191.60	*Reflector for 18" Fluorescent or Lumiline.....	20	3 3/4	5
2197-36	351.40	*Reflector for 36" Fluorescent.....	20	7 1/2	5
2197-3	72.60	Reflector Spacer, 3 3/8" L.....	5	1	1
2197-6	101.60	Reflector Spacer, 6" L.....	5	1 1/4	1
2197-9	130.70	Reflector Spacer, 9" L.....	5	1 1/2	1
2197S	16.00	Reflector Stop Gap.....	20	1/4	5
21211	17.40	†Cover for 12" Lumiline....	10	2 1/4	1
21212	27.60	†Cover for 18" Lumiline....	10	3 1/2	1
21213	43.60	†Cover for 18" Fluorescent.	10	3 3/4	1
21214	69.00	†Cover for 36" Fluorescent.	10	7 1/2	1
21221	28.20	†Cover for 12" Lumiline....	10	2 1/4	1
21222	54.50	†Cover for 18" Lumiline....	10	3 1/2	1
21223	70.40	†Cover for 18" Fluorescent.	10	3 3/4	1
21224	121.20	†Cover for 36" Fluorescent.	10	7 1/2	1

\*Concentrating Type, Specular Ox-al-ite.

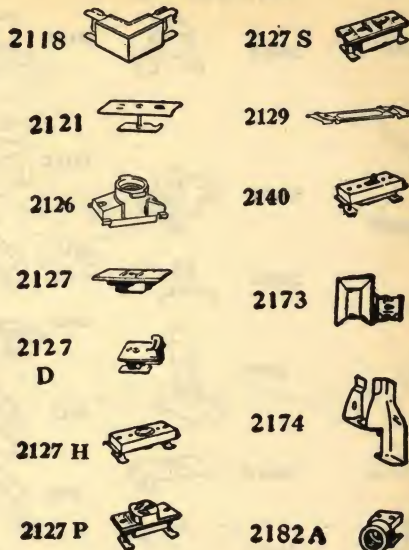
†Wiremold finish.

‡Chromium finish.

Continued

### No. 2100 Wiremold Fittings

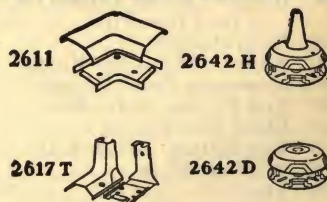
Concluded



No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
2118	\$51.50	External Elbow.....	20	5	5
2121	26.90	Telephone Outlet.....	20	1 1/2	5
2126	86.50	Socket.....	20	2	1
*2127	55.90	Plug Receptacle, Black or Brown, 15A, 125V; 10A, 250V.....	20	2	1
2127	82.80	Plug Receptacle, Ivory, Cream and Wiremold Buff, 15A, 125V; 10A, 250V.....	20	2	1
2127D	63.80	Lumiline Single Receptacle, 660W, 250V.....	20	1	1
2127H	161.00	Midget Twistlock Receptacle.	20	4	5
2127P	114.70	3-Wire Polarized Receptacle (Brown) 15A, 125V; 10A, 250V.....	20	3	1
2127S	67.60	T-Slot Receptacle (Brown) 15A, 125V; 10A, 250V.....	20	2 1/4	1
2129	27.70	Adapter.....	20	1 1/2	5
2140	139.40	S.P. Switch with Box, 10A, 125V; 5A, 250V.....	20	6	1
2173	38.40	Offset Connector for No. 2100 to No. 1500 Wiremold.....	10	1 1/4	1
2174	50.90	Takeoff Connector for No. 2100 to No. 500 or No. 700 Wiremold.....	10	2	1
2182A	79.90	End Fitting, 3/4-inch Female Bushing.....	20	3 1/2	5
2197-3	72.60	Reflector Spacer 3 3/8 Inches Long.....	5	1	1
2197-6	101.60	Reflector Spacer 6 Inches Long	5	1 1/4	1
2197-9	130.70	Reflector Spacer 9 Inches Long	5	1 1/2	1

\*Brown furnished unless otherwise specified.

### No. 2600 Wiremold Pancake Fittings

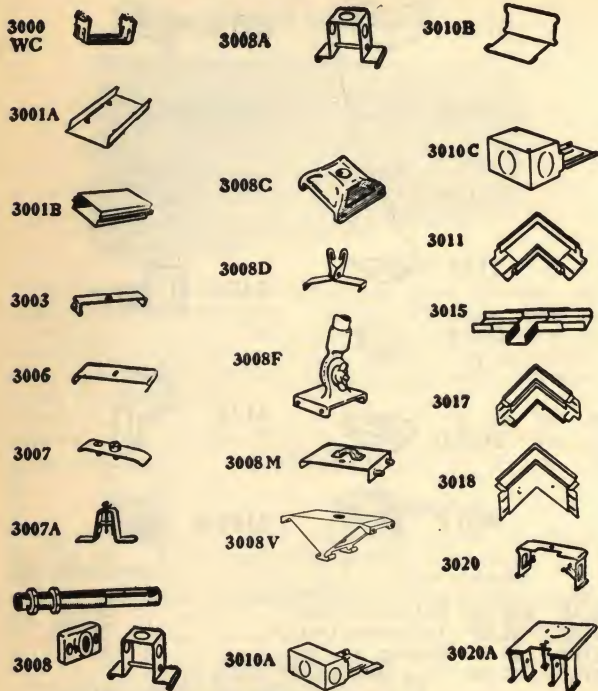


No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
2600	†.502	Pancake Coil.....	50	46	..
2611	\$145.20	Flat Elbow.....	5	1 3/4	1
2617T	120.50	Special Elbow (For Telephone Use)...	5	1 3/4	1
2642D	127.80	Junction Box.....	5	2 3/4	1
2642H	188.80	Junction Box (With Rubber Stem).....	5	3 1/4	1

†Per foot.



### No. 3000 Wiremold Fluorescent Lighting Equipment



#### No. 3000B Channel

In 10-foot lengths. Has  $\frac{1}{2}$  and  $\frac{3}{4}$ -in. entrance knockouts and supporting screw knockouts, approximately 8-inch centers. Packed 100 feet in a carton; weight, 86 pounds.

No. 3000B, Wiremold Finish.....per foot **\$ .396**  
 No. 3000B, White Finish.....per foot **.436**

#### No. 3000C Cover

Furnished in 10-foot lengths. Not scored.

Packed 100 feet in a carton; weight, 42 pounds.

No. 3000C, Wiremold Finish.....per foot **\$ .203**  
 No. 3000C, White Finish.....per foot **.224**

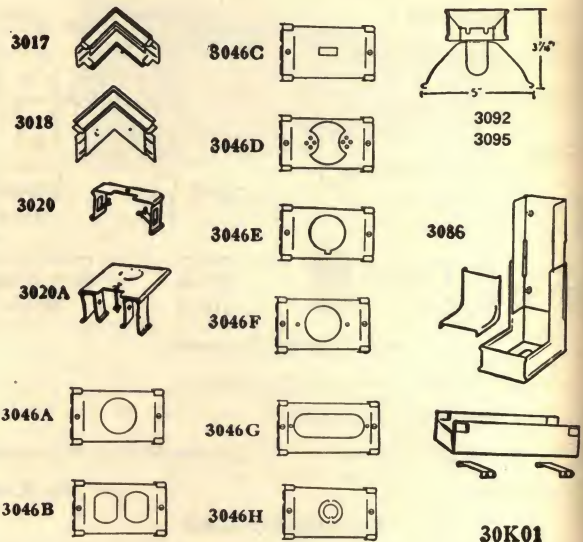
#### Parts Unpainted

No.	Per 100	Description	Std. Pkg. Qty.	Pkg. Wt. Lb.	Unit Pkg. Qty.
3000WC	\$4.30	Wire Clip.....	20	1	1
3001A	17.40	Coupling.....	20	8	5
3007	12.40	Auxiliary Clamp.....	20	1	2
3007A	7.30	Mounting Strap for Wiring Device.....	20	2	2
<b>Wiremold Finish</b>					
3001B	\$72.60	Outside Coupling.....	10	9	1
3003WM	14.50	Supporting Clip.....	50	2 $\frac{1}{2}$	5
3006WM	2.90	Cover Clip.....	50	1 $\frac{3}{4}$	10
3008WM	183.00	Hanger Assembly with $\frac{3}{8}$ -Inch Pipe Nipple.....	10	8	1
3008AWM	37.80	Hanger Clamp.....	10	2	1
3008CWM	130.70	Hanger Casting Tapped for $\frac{1}{2}$ -Inch Iron Pipe.....	1	1 $\frac{1}{2}$	..
3008DWM	26.20	Loop Hanger.....	20	1 $\frac{3}{4}$	2
3008FWM	196.00	Adjustable Ratchet Hanger.....	1	1 $\frac{1}{2}$	..
3008MWM	92.40	Messenger Cable Hanger.....	..	..	..
3010AWM	52.30	End Fitting, $\frac{1}{2}$ -In. K.O.....	5	1	1
3010BWM	19.80	Blank End Fitting.....	5	1 $\frac{1}{2}$	1
3010CWM	78.40	End Fitting, 1-Inch K.O.....	5	2	1
3011WM	87.10	90° Flat Elbow.....	5	4	1
3015WM	145.20	Tee.....	5	10	1
<b>White Finish</b>					
3003	\$16.00	Supporting Clip.....	50	2 $\frac{1}{2}$	5
3006	3.10	Cover Clip.....	50	1 $\frac{3}{4}$	10
3008C	145.20	Hanger Casting.....	1	1 $\frac{1}{2}$	..
3008D	29.00	Loop Hanger.....	20	1 $\frac{3}{4}$	2
3008F	217.80	Adj. Ratchet Hanger.....	1	1 $\frac{1}{4}$	..
3008V	217.80	90° Angle Hanger.....	2	1 $\frac{1}{4}$	1
3010A	58.10	End Fitting, $\frac{1}{2}$ -In. K.O.....	5	1	1
3010B	21.80	Blank End Fitting.....	5	1 $\frac{1}{2}$	1

Continued

### No. 3000 Wiremold Fluorescent Lighting Equipment

#### Concluded



#### Wiremold Finish

No.	Per 100	Description	Std. Pkg. Qty.	Pkg. Wt. Lb.	Unit Pkg. Qty.
3017	\$90.00	Internal Elbow.....	5	4 $\frac{1}{2}$	1
3018	87.10	External Elbow.....	5	3	1
3020WM	31.90	Receptacle Clamp.....	10	1 $\frac{1}{4}$	2
3020AWM	34.80	Receptacle and Starter Base Clamp.....	10	1 $\frac{3}{4}$	2
3046AWM	40.00	Single Receptacle Cover.....	10	2 $\frac{3}{4}$	1
3046BWM	40.00	Duplex Receptacle Cover.....	10	2 $\frac{3}{4}$	1
3046CWM	40.00	Tumbler Switch Cover.....	10	2 $\frac{3}{4}$	1
3046DWM	40.00	Service Device Cover.....	10	2 $\frac{3}{4}$	1
3046EWM	40.00	Screw Type Sign Receptacle Cover.....	10	2 $\frac{3}{4}$	1
3046FWM	40.00	Surface Type Sign Receptacle Cover.....	10	2 $\frac{3}{4}$	1
3046GWM	40.00	Condulet Device Cover.....	10	2 $\frac{3}{4}$	1
3046HWM	40.00	Fixture & Drop Cord Cover.....	10	2 $\frac{3}{4}$	1
3086	158.40	Adjustable Offset Connector.....	5	3 $\frac{1}{2}$	1

#### White Finish

3020	\$35.20	Receptacle Clamp.....	10	1 $\frac{1}{4}$	2
3020A	38.30	Receptacle and Starter Base Clamp.....	10	1 $\frac{3}{4}$	2
3038C	116.20	Outlet Box Adapter.....	5	1 $\frac{1}{2}$	1
30K01	290.40	Ballast Housing Box.....	1	2 $\frac{1}{2}$	..
3095-18	246.80	18-Inch Reflector.....	10	17	1
3095-24	304.90	24-Inch Reflector.....	10	22	1
3095-36	450.10	36-Inch Reflector.....	5	17	1
3095-48	580.80	48-Inch Reflector.....	5	22	1

#### Specular Ox-al-ite Finish

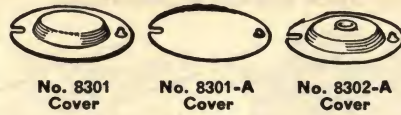
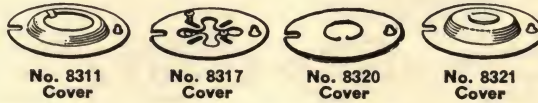
3092-18	\$304.90	18-Inch Reflector.....	10	4 $\frac{1}{2}$	1
3092-24	394.90	24-Inch Reflector.....	10	7	1
3092-36	531.50	36-Inch Reflector.....	5	6	1
3092-48	821.90	48-Inch Reflector.....	5	7	1
3092E	66.80	Reflector End Cap.....	20	1	5
3092S	24.70	Reflector Stop Gap.....	20	3 $\frac{1}{4}$	5



## Appleton 3/4-Inch Octagonal Outlet Boxes and Covers

Schedule OB

Black Enamel or Galvanized

No. 3-0  
BoxNo. 8301  
CoverNo. 8301-A  
CoverNo. 8302-A  
CoverNo. 8311  
CoverNo. 8317  
CoverNo. 8320  
CoverNo. 8321  
CoverNo. 8314-LR  
Cover

## Boxes

No.	Universal No.	Description	Std. Wt., Lb. Pkg. per 100
3-0-1/2	24151-1/2	1 1/2 In. Deep, 4-1/2-Inch K.O. in Sides, 1 in Bottom.....	100 47
3-0-3/4	24151-3/4	1 1/2 In. Deep, 4-3/4-Inch K.O. in Sides, 1 in Bottom.....	100 47
3-0 Special	24151 Special	1 1/2 In. Deep, 2-1/2-Inch and 2-3/4-Inch K.O. in Sides, 1-1/2-Inch in Center of Bottom..	100 47

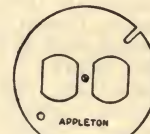
## Covers

No.	Universal No.	Description	Std. Wt., Lb. Pkg. per 100
8301	24C2	Raised, Closed.....	100 23
8301-A	24C1	Flat, Blank.....	100 20
8302-A	24C12	Raised, with 3/8-inch Steel Bushing.....	100 23
8303	.....	Flat, with Cord Grip.....	100 18
8311	24C35, 24C36	Raised, 1 1/2-Inch Hole for Sign Receptacles.....	100 19
8317	24C28	Flat, Spider with Bolts.....	100 18
8320	24C6	Flat, 1/2-Inch K.O. in Center.....	100 21
8321	24C7	Raised, 1/2-Inch K.O. in Center.....	100 23
8314-LR	.....	With Openings, For Duplex Receptacle.....	100 15

## Appleton 4-Inch Octagonal Outlet Boxes and Covers

Schedule OB

Black Enamel or Galvanized

No. 4-0  
BoxNo. 8424  
CoverNo. 8434  
CoverNo. 8441  
CoverNo. 8400  
CoverNo. 8401  
CoverNo. 8409  
CoverNo. 8420-LR  
CoverNo. 4-OD  
Box

## Boxes

No.	Universal No.	Description	Std. Wt., Lb. Pkg. per 100
4-0-1/2	54151-1/2	1 1/2 In. Deep, 4-1/2-Inch K.O. in Sides, 5-1/2-Inch K.O. in Bottom.....	100 65
4-0-3/4	54151-3/4	1 1/2 In. Deep, 4-3/4-Inch K.O. in Each Side, 3-1/2-Inch and 2-3/4-Inch K.O. in Bottom	100 65
4-0 Spec.	54151 Spec.	1 1/2 In. Deep, 2-1/2-Inch and 2-3/4-Inch K.O. in Sides, 3-1/2-Inch and 2-3/4-Inch K.O. in Bottom.....	100 65
4-OD-1/2	54171	2 1/8 In. Deep, Furnished with Knockouts for 1/2, 3/4 or 1-Inch Conduit .....	50 84
4-OD-3/4	54171		
4-OD-1	54171		
4-OD Spec.	54171 Spec.	2 1/8 In. Deep, 2-1/2-Inch and 2-3/4-Inch K.O. in Sides, 3-1/2-Inch and 2-3/4-Inch K.O. in Bottom.....	50 84

## Covers

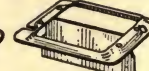
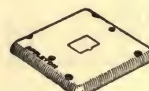
No.	Universal No.	Description	Std. Wt., Lb. Pkg. per 100
8400	54C48	Raised, Open.....	100 24
8401	54C2	Raised, Closed, 5/8 Inch High.....	100 36
8402-A	54C12	Raised with 3/8-Inch Steel Bushing.....	100 37
8403	54C1	Flat, Blank.....	100 28
8404	54C28	Flat, Spider with Bolts.....	100 27
8407	54C31	Raised, with 1 1/4-Inch Hole for Federal Receptacles.....	100 26
8409	54C3	Raised, 5/8-Inch Open with Ears, 2 3/8 Inches Center to Center.....	100 25
8409-D	.....	Raised, 1 1/4 Inches Open with Ears, 2 3/8 Inches Center to Center .....	100 38
8413	54C6	Flat, 1/2-Inch K.O. in Center.....	100 28
8414	54C7	Raised, 1/2-Inch K.O. in Center.....	100 35
8424	54C35, 54C36	Raised, 1 1/2-Inch Hole for Sign Receptacles.....	100 26
8434	54C14	Raised, for Single Flush Device.....	100 27
8439	.....	Raised, for Use with Combination Hickey and Swivel Fixture Joints.....	100 28
8441	.....	Flat, with Cord Grip.....	100 36
8419-LR	.....	With Opening for Single Receptacle.....	100 27
8420-LR	.....	With Openings for Duplex Receptacle.....	100 24



## Appleton 4-Inch Square Outlet Boxes and Covers

Schedule OB

Black Enamel or Galvanized

No. 4-S  
BoxNo. 8460  
CoverNo. 8461  
CoverNo. 8462  
CoverNo. 8463-A  
CoverNo. 8465  
CoverNo. 8466  
CoverNo. 4-S  
Special BoxNo. 8468  
CoverNo. 8468-A  
CoverNo. 8470  
CoverNo. 8475  
CoverNo. 8472  
CoverNo. 8474  
CoverNo. 8506  
PartitionNo. 8507  
PartitionNos. 8360 & 8361  
CoversNos. 8362 & 8363  
CoversNos. 8364 & 8365  
CoversNos. 8370 & 8371  
CoversNos. 8372 & 8373  
CoversNos. 8374 & 8375  
CoversNo. 8376  
CoverNo. 8378  
Cover

## Boxes

No.	Universal Number	Description	Std. Wt., Lb. Pkg. per 100
4-S-1/2	52151-1/2	1 1/2 In. Deep, 10-1/2-Inch K.O. in Sides, 5 in Bottom.	50 92
4-S-3/4	52151-3/4	1 1/2 In. Deep, 2-3/4-Inch K.O. in each side; 3-1/2-Inch and 2-3/4-Inch K.O. in Bottom.	50 92
4-S Spec.	52151 Spec.	1 1/2 In. Deep, 2-1/2 and 1-3/4-Inch K.O. in each side; 3-1/2 and 2-3/4-Inch K.O. in Bottom.	50 92
4-SL-1/2	52141-1/2	1 1/4-In. Deep, 10-1/2-Inch K. O. in sides, 5 in Bottom.	50 80
4-SD-1/2	52171-1/2	1 1/2 In. Deep with 8-1/2-Inch K.O. in Sides, 5 in Bottom.	50 110
4-SD-3/4	52171-3/4	2 1/8 In. Deep with 8-3/4-Inch K.O. in Sides, 5 in Bottom.	50 110
4-SD-1	52171-1	2 1/8 In. Deep with 8-1-In. K.O. in Sides and 3-1/2- and 2-3/4-Inch in Bottom.	50 110

## Covers

No.	Universal Number	Description	Std. Wt., Lb. Pkg. per 100
8460	52C48	Raised, Open.	100 32
8461	52C3	Raised, 5/8 Inch Open, Ears, 2 23/32 Inches Center to Center.	100 32
8461-D	.....	Raised, 1 1/4 Inch Open, Ears 2 23/32 Inches Center to Center.	100 92
8462	52C2	Raised, Closed, 5/8 Inch High.	100 44
8463-A	52C12	Raised, with 3/8 Inch Steel Bushing.	100 47
8465	52C1	Flat, Blank.	100 36
8466	52C16	Raised, 1 1/4 Inch for Single Flush Device.	100 46
8466-A	52C15	Raised, 1 Inch for Single Flush Device.	100 44
8467	52C15-5/8 In.	Raised, 7/8 Inch for Single Flush Device.	100 42
8468	52C14	Raised, 3/4 Inch for Single Flush Device.	100 36
8468-C	52C14-5/8 In.	Raised, 5/8 Inch for Single Flush Device.	100 34
8468-A	52C13	Raised, 1/2 Inch for Single Flush Device.	100 32
8468-B	52C62	Raised, 1/4 Inch for Single Flush Device.	100 28
8468-F	.....	Flat, for One Single Flush Device.	100 24
8469	52C21	Raised, 1 1/4 Inch for Two Flush Devices.	100 45
8469-A	52C19	Raised, 1 inch for Two Flush Devices.	100 41
8470	52C18	Raised, 3/4 Inch for Two Flush Devices.	100 31
8470-C	52C18-5/8 In.	Raised, 5/8 Inch for Two Flush Devices.	100 29
8470-A	52C17	Raised, 1/2 Inch for Two Flush Devices.	100 24
8470-B	52C20	Raised, 1/4 Inch for Two Flush Devices.	100 18
8470-F	.....	Flat, for Two Flush Devices.	100 14
8475	.....	Raised, 1/4 In., Offset for Single Flush Device at One Side, Other Gang Blank.	100 13
8472	52C35, 52C36	Raised, with 1 1/2 Inch Hole for Ring Receptacles.	100 43
8474	52C6	Flat, 1/2 Inch K.O. in Center.	100 37
8474-A	52C7	Raised, 1/2 Inch K.O. in Center.	100 44
8478	52C28	Flat, Spider with Bolts.	100 36

## Partitions

8506	.....	Raised 1/2-Inch, 2-Gang Partition, For Two Flush Devices.	50 42
8507	.....	Raised 3/4-Inch, 2-Gang Partition, For Two Flush Devices.	50 49

## Surface Covers

No.	1/2-Inch Deep Wt., Lb. per 100	No.	1/2-Inch Deep Wt., Lb. per 100	Description	Std. Pkg.
8360	42	8361	44	For One Toggle Switch.	100
8362	42	8363	44	For One Single Flush Receptacle.	100
8364	42	8365	44	For One Duplex Flush Receptacle.	100
8366	42	8367	44	For Two Toggle Switches.	100
8368	42	8369	44	For Two Single Flush Receptacles.	100
8370	42	8371	44	For Two Duplex Flush Receptacles.	100
8372	42	8373	44	For One Toggle Switch and One Single Flush Receptacle.	100
8374	42	8375	44	For One Toggle Switch and One Duplex Flush Receptacle.	100
8376	42	.....	..	With 1-Hole Strap for P&S Despard, Bryant LL or Hubbell LS Wiring Devices.	100
8378	42	.....	..	With 3-Hole Strap for same Wiring Devices as 8376.	100

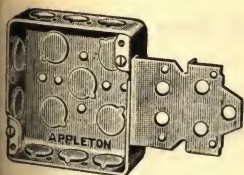


## Appleton 4-Inch Square Boxes

Schedule OB

With Bracket—No Lath Support

Black Enamel or Galvanized



No. 4-SB-1/2 with 3-1/2-inch K.O. in each of 2 opposite sides, 2 in side opposite bracket and 5-1/2-inch K.O. in bottom.

No. 4-SB-Spl. with combination of 2-1/2 and 1-3/4-inch K.O. in each of 3 sides (none in bracket side) and combination of 3-1/2 and 2-3/4-inch K.O. in bottom.

No.	Universal No.	Size Box Square	Depth	Std. Pkg.	Wt. Lb. per 100
4-SB-1/2	52151-B-1/2	4	1 1/2	50	95
4-SB-Spl	52152-B-Spl	4	1 1/2	50	95

## Appleton Swivel Hanger Covers

Schedule OB

For 3 1/4 and 4-Inch Octagonal, 4-Inch Square Outlet Boxes and Concrete Rings



Ball—Without Cushion



Ball—With Cushion

Designed with a free swing of 30 degrees in all directions from plumb.

Cushion type cover is recommended where vibration may take place to increase life of the lamp bulb.

### Without Cushion



No. 8438-R



No. 8458-R



No. 8448-R

No.	Size Hub In.	Style and Size Box	Std. Pkg.	Wt. Lb. per 100
8438-R	1/2	3 1/4 and 4-Inch Octagonal Outlet Boxes	100	58
8436-R	3/4		100	60
8458-R	1 1/2		100	67
8459-R	3/4	4-Inch Square Outlet Boxes	100	69
8448-R	1 1/2	4 1/2-Inch Diameter Concrete Rings	100	61
8449-R	3/4		100	63

### With Cushion



No. 8438-C



No. 8458-C



No. 8450-C

No.	Size Hub In.	Style and Size Box	Std. Pkg.	Wt. Lb. per 100
8438-C	1/2	3 1/4 and 4-Inch Octagonal Outlet Boxes	100	63
8439-C	3/4		100	65
8458-C	1 1/2		100	70
8459-C	3/4	4-Inch Square Outlet Boxes	100	72
8450-C	1 1/2	4 1/2-Inch Diameter Concrete Rings	100	65
8451-C	3/4		100	67
8452-C	1 1/2	3 1/4 and 4-Inch Octagonal Outlet Boxes	100	64
8453-C	3/4		100	66
8454-C	1 1/2	4-Inch Square Outlet Boxes	100	71
8455-C	3/4		100	73
8456-C	1 1/2	4 1/2-Inch Diameter Concrete Rings	100	66
8457-C	3/4		100	68

## Appleton Outlet Boxes and Covers

Schedule OB

Galvanized Finish Only

4 1/16-Inch Square Outlet Boxes



No. 4-SJ-1/2 box, 1 1/2 inches deep. With two 1/2-inch knockouts in two sides, three 1/2-inch knockouts in two opposite sides, and combination of three 1/2-inch and two 3/4-inch knockouts in bottom.

No. 4-SJ-3/4 box, 1 1/2 inches deep. With two 3/4-inch knockouts in two sides, combination of one 3/4-inch and two 1/2-inch knockouts in two opposite sides and combination of two 3/4-inch and three 1/2-inch knockouts in bottom.

No. 4-SJD-1/2 box, 2 1/8 inches deep. With two 1/2-inch knockouts in two sides, combination of two 1/2-inch and one 3/4-inch knockouts in two opposite sides, and combination of three 1/2-inch and two 3/4-inch knockouts in bottom.

No. 4-SJD-3/4 box, 2 1/8 inches deep. With two 3/4-inch knockouts in two sides, combination of one 3/4-inch and two 1/2-inch knockouts in two opposite sides and combination of two 3/4-inch and three 1/2-inch knockouts in bottom.

No. 4-SJD-1 box, 2 1/8 inches deep. With two 1-inch knockouts in each side and combination of two 3/4-inch and three 1/2-inch knockouts in bottom.

No.	Universal Key No.	Standard Package	Wt. Lb. per 100
4-SJ-1/2	72151-1/2	50	110
4-SJ-3/4	72151-3/4	50	110
4-SJD-1/2	72171-1/2	50	130
4-SJD-3/4	72171-3/4	50	130
4-SJD-1	72171-1	50	130

### Covers for 4 1/16-Inch Square Boxes

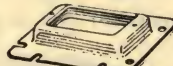
Standard package, 50.

No. 8480



Steel cover, raised. Universal Key No. 72-C-2. Weight per 100, 56 pounds.

No. 8485



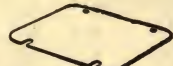
Steel cover, raised, 3/4-inch high, for one rectangular base switch or receptacles. Universal Key No. 72-C-14. Weight per 100, 49 pounds.

No. 8486



Steel cover, raised, 3/4-inch high, for two rectangular base switches or receptacles. Universal Key No. 72-C-18. Weight per 100, 44 pounds.

No. 8487



Steel cover, flat. Universal Key No. 72-C-1. Weight per 100, 51 pounds.

No. 8489



Steel cover, raised, 5/8-inch high, with 1/2-inch knockout. Universal Key No. 72-C-7. Weight per 100, 54 pounds.

No. 8481



Steel cover, raised, open, 5/8-inch high. Universal Key No. 72-C-48. Weight per 100, 44 pounds.

No. 8485-A

Steel cover, raised, 1/2-inch high, for one rectangular base switch or receptacles. Weight per 100, 43 pounds.

No. 8485-B

Steel cover, raised, 1/4-inch high, for one rectangular base switch or receptacle.

No. 8488



Steel cover, raised, open, with ears drilled and tapped 2 3/8 inches center to center. Universal Key No. 72-C-3. Weight per 100, 44 pounds.

No. 8489-A



Steel cover, raised, 3/4-inch high, for Hubbell 4-porcelain flush receptacle Nos. 7294 and 7301 (for exposed work only). Weight per 100, 51 pounds.



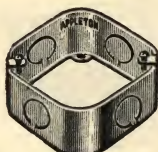
## Appleton Extension Rings

Schedule OB

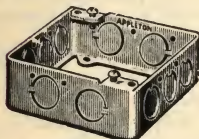
Black Enamel or Galvanized



No. 3-OE



No. 4-OE



No. 4-SE



No. 4-SSLSE

## For Octagonal Boxes

No.	Universal Key No.	Size In.	Depth In.	Size K.O., In.	Std. Pkg.	Wt. Lb. per 100
3-OE	25151	3 1/4	1 1/2	1/2 or 3/4	100	40
4-OE	55151	4	1 1/2	1/2 or 3/4	100	49
4-OES	57111	4	5/8	None	100	20
4-OESpl	.....	4	1 1/2	2 1/2, 2 3/4	100	49
4-OED	55171	4	2 1/8	1/2, 3/4 or 1	100	59

## For Square Boxes

No.	Universal Key No.	Size In.	Depth In.	Size K.O., In.	Std. Pkg.	Wt. Lb. per 100
*4-SJE	73151	4 1/16	1 1/2	1/2 or 3/4	50	84
*4-SJDE	73171	4 1/16	2 1/8	1/2, 3/4 or 1	50	100
4-SE	53151	4	1 1/2	1/2 or 3/4	50	66

## For Handy Boxes and Switch Boxes

*4-SSLSE 1/2	.....	4	1 1/2	8 to 1 1/2	50	40
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\*Standard finish, galvanized only.

## Appleton Octagonal Concrete Rings and Plates

Schedule OB

Concrete Rings without Plates—Galvanized Finish Only



OCR-3 1/2 Ring with OCP Plate



OCR-3 1/2 Ring

Of two-piece design, furnished with two inside lugs at both ends, drilled and tapped to take OCP plates or any standard make of 4-inch round box cover. Outside ears have holes for nailing box to concrete form.

Furnished with combination of four 1/2-inch and four 3/4-inch knockouts, and can be supplied with combination of four 3/4-inch and four 1-inch knockouts.

With 4—1/2" and 4—3/4" Knockouts		With 4—3/4" and 4—1" Knockouts		Size Box Inches		Std. Pkg.	Wt. Lb. per 100
No.	Univ. No.	No.		Diam.	Depth		
OCR-1 1/2	54521	.....		4 3/8	1 1/2	100	52
OCR-2	54531	.....		4 3/8	2	100	71
OCR-2 1/2	54541	.....		4 3/8	2 1/2	50	82
OCR-3	54551	.....		4 3/8	3	50	99
OCR-3 1/2	54561	.....		4 3/8	3 1/2	50	114
OCR-4	54571	.....		4 3/8	4	50	128
OCR-5	54581	.....		4 3/8	5	25	173
OCR-6	54591	.....		4 3/8	6	25	192

## Plates Only

Furnished regularly with combination of three 1/2-inch and two 3/4-inch knockouts.



OCP-3/8



OCP Plate

No.	Diam. In.	Fixture Studs	Std. Pkg.	Wt. Lb. per 100
OCP	4 3/8	No Stud	100	36
OCP-3/8	4 3/8	3/8-In.	100	42
OCP-1/2	4 3/8	1/2-In.	100	42

## Appleton Solid Conduit Gang Switch Boxes

Schedule OB

Galvanized Finish Only

Solid Gang—Deep Type

With 3/4 or 1/4-Inch Deep Covers



GSB-4 Box with GSC-4 Cover



GSC-4 Cover

Made from 14-gage steel. Cover has mounting centers to accommodate all standard push button switches, toggle switches, receptacles, etc.

Switch centers are 3 3/32 inches and center lines are 1 13/16 inches apart.

Outside dimensions of box complete with cover are: with deep cover, 4 1/8 inches wide, 2 3/4 inches deep; with shallow cover, 4 1/8 inches wide, 2 1/4 inches deep. Depth of box only, 2 inches. Has slots to take LVP partitions.

In addition to one knockout for each gang, there are two additional knockouts in each side of the 2 to 8-gang boxes. For example: A 2-gang box will have four knockouts in each side, a 3-gang box will have five knockouts in each side.

Boxes and covers are listed separately.

Galvanized finish only.

*Boxes Only				Covers Only			
No. Gangs	Std. Pkg.	No.	Wt., Lb. Std. Pkg.	3/4" Deep No.	1/4" Deep No.	Std. Pkg.	Wt., Lb. Std. Pkg.
2	5	GSB-2	243	GSC-2	GSCS-2	25	69
3	5	GSB-3	286	GSC-3	GSCS-3	25	80
4	5	GSB-4	323	GSC-4	GSCS-4	25	90
5	5	GSB-5	375	GSC-5	GSCS-5	25	99
6	1	GSB-6	409	GSC-6	GSCS-6	25	109
7	1	GSB-7	457	GSC-7	GSCS-7	20	123
8	1	GSB-8	513	GSC-8	GSCS-8	20	138
9	1	GSB-9	575	GSC-9	GSCS-9	20	150
10	1	GSB-10	615	GSC-10	GSCS-10	20	165

## Solid Gang—Shallow Type

With 1/4-Inch Deep Covers



GB-4 with GC-4 Cover



GC-4 Cover

Similar to boxes above, except that they are very shallow and are designed particularly for use with thin partitions.

Depth of box with cover, 1 3/4 inches; box only, 1 1/2 inches.

*Boxes Only				Covers Only			
No. Gangs	No.	Wt., Lb. per 100		No.	Wt., Lb. per 100	Std. Pkg.	
2	GB-2	213		GC-2	60	25	
3	GB-3	262		GC-3	72	25	
4	GB-4	298		GC-4	83	25	
5	GB-5	352		GC-5	92	25	
6	GB-6	388		GC-6	103	25	

\*Can be furnished with 1/2 or 3/4-inch knockouts. Specify size wanted when ordering. All 2 or 3-gang boxes have five 1/2-inch knockouts in center of bottom; all 4 to 10-gang boxes have two sets of five 1/2-inch knockouts in bottom.

## No. LVP Low Voltage Partitions



To fit deep type solid gang boxes.

When a combination of the gang box and cover is used with a low voltage partition, it is absolutely necessary that a cover and box of same gang be used. For example:

A 2-gang cover on a 2-gang box, a 3-gang cover on a 3-gang box, etc.

Standard package, 10. Weight per 100, 21 pounds.



## Appleton Ceiling Boxes

Schedule OB

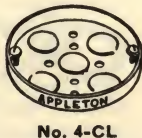
Black Enamel—Galvanized  
4-Inch Ceiling Boxes with Knockouts

For ½-Inch Conduit



No. 4-C

**No. 4-C.** Without ears. Five knockouts in bottom for ½-inch conduit.



No. 4-CL

**No. 4-CL.** With ears. Five knockouts in bottom for ½-inch conduit.

No.	Universal Key No.	Diameter Inches	Depth Inches	Std. Pkg.	Wt., Lb. per 100
4-C	56112	4	1½	100	39
4-CL	56111	4	1½	100	41

## 3½-Inch Combination Boxes

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing



No. 510-L

**No. 510-L.** With ears. Four knockouts in bottom for loom and three knockouts in bottom for ½-inch conduit.



No. 510-LC

**No. 510-LC.** With ears. Four knockouts in bottom for loom and three knockouts in bottom for ½-inch conduit. With two CL-9 clamps.

No.	Universal Key No.	Diameter Inches	Depth Inches	Std. Pkg.	Wt., Lb. per 100
510-L	36115	3½	1½	100	32
510-LC	36115-C	3½	1½	100	36



No. 511-LC

**No. 511-LC.** With ears. Four knockouts in bottom for loom and three knockouts in bottom for ½-inch conduit. With two CL-9 clamps.

No.	Universal Key No.	Diameter Inches	Depth Inches	Std. Pkg.	Wt., Lb. per 100
511-LC	36125-C	3½	¾	100	45



No. 513-L

**No. 513-L.** With ears. Four knockouts in bottom, four in sides for loom; three knockouts in bottom and four in sides for ½-inch conduit.



No. 513-LC

**No. 513-LC.** With ears. Four knockouts in bottom, four in sides for loom, three knockouts in bottom and four in sides for ½-inch conduit. With two CL-9 clamps.

No.	Universal Key No.	Diameter Inches	Depth Inches	Std. Pkg.	Wt., Lb. per 100
513-L	24155	3½	1½	100	55
513-LC	24155-C	3½	1½	100	57



No. 521-L

**No. 521-L.** With ears. Eight knockouts in bottom for loom, one knockout in bottom for ½-inch conduit.

**No. 521-LC.** With ears. Eight knockouts in bottom for loom, one knockout in bottom for ½-inch conduit. With CL-9 clamps.

No.	Universal Key No.	Diameter Inches	Depth Inches	Std. Pkg.	Wt., Lb. per 100
521-L	36113	3½	1½	100	35
521-LC	36113-C	3½	1½	100	36

For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation and Non-Metallic Flexible Tubing



No. 532-L

**No. 532-L.** With two bushed CL-6 clamps in bottom and fixture stud. With ears. Galvanized finish only.

**No. 533-L.** With two bushed CL-6 clamps in bottom. With ears. Galvanized finish only.



No. 533-L

No.	Diameter Inches	Depth Inches	No. Knockouts Loom	No. Knockouts Conduit	Std. Pkg.	Wt., Lb. per 100
532-L	3½	¾	4	..	100	45
533-L	3½	¾	4	3	100	45

## Appleton Combination Boxes

Schedule OB

Black Enamel—Galvanized  
For Flexible Steel Conduit and Armored Cable with  
1940 Code Rubber Insulation, Type T Insulation,  
and 1947 Code Rubber Insulation  
With Two-Way Knockout Closing Clamps  
One Screw May Be Used for Bonding

## Nos. 550-L and 550-LFS



No. 550-L

**No. 550-L.** Ears tapped 3/32-inch on 2 3/4-inch centers. Nail holes and two CL-25 clamps. Without fixture stud.

**No. 550-LFS.** Same as No. 550-L except with 3/8-inch fixture stud.

No.	Diameter Inches	Depth Inches	Knockouts		Std. Pkg.	Wt., Lb. per 100
			Loom	Conduit		
550-L	3½	1½	4	1-½"	100	61
550-LFS	3½	1½	4	.....	100	60



No. 551-L

## Nos. 551-L and 551-LFS

**No. 551-L.** Ears tapped 3/32-inch on 3 1/2-inch centers. Nail holes and two CL-25 clamps. Without fixture stud.

**No. 551-LFS.** Same as No. 551-L except with 3/8-inch fixture stud.

No.	Diameter Inches	Depth Inches	Knockouts		Std. Pkg.	Wt., Lb. per 100
			Loom	Conduit		
551-L	4	1½	4	3-½"	100	77
551-LFS	4	1½	4	2-½"	100	81

For Non-Metallic Sheathed Cable with Type T or  
1947 Code Rubber Insulation and Non-Metallic  
Flexible Tubing

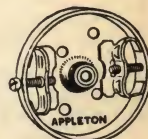
## Nos. 560-L, 561-L and 562-L



No. 560-L



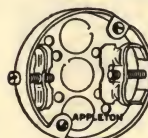
No. 561-L



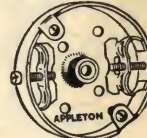
No. 562-L

No.	Diameter Inches	Depth Inches	¾-Inch Stud	Ear	Clamps (2)	Std. Pkg.	Wt., Lb. per 100
560-L	3¼	1½	No	Yes	CL-26	100	65½
561-L	4	1½	No	Yes	CL-26	100	76
562-L	3½	1½	Yes	No	CL-24	100	37

## Nos. 563-L and 564-L



No. 563-L



No. 564-L

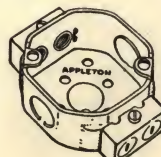
No.	Diameter Inches	Depth Inches	¾-Inch Stud	Ear	Clamps (2)	Std. Pkg.	Wt., Lb. per 100
563-L	3½	¾	No	Yes	CL-24	100	45
564-L	3½	¾	Yes	Yes	CL-24	100	47

## Appleton Combination Boxes

Schedule OB

With Two No. CL-18 Outside Clamps and Ears  
Black Enameled—Galvanized

For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation, and 1947 Code Rubber Insulation



Has two clamps on the outside allowing more room for wiring and for splicing. Clamps are riveted to boxes, which insures a positive ground.

Screws in clamps are staked to prevent removal or falling out in transit.

No.	DIMENSIONS, INCHES		Fix. Stud	Std. Pkg.	Wt., Lb. Std. Pkg.
	Diameter	Depth			
570-L	3¼	1½	No	100	67
570-LFS	3¼	1½	Yes	100	76
571-L	4	1½	No	100	82
571-LFS	4	1½	Yes	100	82



## Appleton Combination Boxes

Schedule OB

## With Side Mounting Ears

These boxes meet the requirements of many territories where the installation of outlet and combination boxes require furring strips at each ceiling outlet to support cut ends of the laths. These furring strips afford an ideal support for outlet boxes; therefore, boxes must have these mounting ears so they may be attached directly to the furring strips and thereby eliminate the additional expense of bar hangers.

Will not tip or rock after installation and eliminate the possible hazard of cracked plaster.

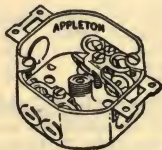
All boxes have ears. No. 550-LFSXE furnished with  $\frac{3}{8}$ -inch fixture stud.

Standard package, 100.

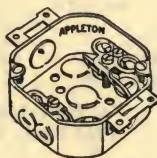
**For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation and 1947 Code Rubber Insulation**



No. 550-LXE



No. 550-LFSXE



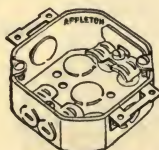
No. 551-LXE

No.	Diameter Inches	Depth Inches	Knockouts $\frac{3}{8}$ "	Conduit	Clamps (2)	Wt., Lb. per 100
550-LXE	$3\frac{1}{2}$	$1\frac{1}{2}$	4	$1\frac{1}{2}$ "	CL-25	61
550-LFSXE	$3\frac{1}{2}$	$1\frac{1}{2}$	4	.....	CL-25	60
551-LXE	4	$1\frac{1}{2}$	4	$3\frac{1}{2}$ "	CL-25	60

**For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing**



No. 560-LXE



No. 561-LXE

No.	Diameter Inches	Depth Inches	Knockouts $\frac{3}{8}$ "	Conduit	Clamps (2)	Wt., Lb. per 100
560-LXE	$3\frac{1}{2}$	$1\frac{1}{2}$	4	$1\frac{1}{2}$ "	CL-26	57
561-LXE	4	$1\frac{1}{2}$	4	$3\frac{1}{2}$ "	CL-26	65

**No. BAR- $\frac{3}{8}$  Appleton Bar Hangers**

Schedule OB

Adjustable



Furnished complete with  $\frac{3}{8}$ -inch adjustable sliding stud and winged locknut.

Allows for an extra sturdy installation with most styles of outlet, ceiling and cable boxes.

Plain finish.

Standard package, 50. Weight per standard package, 45 pounds.

## Appleton Clamps

Schedule OB

## For Outlet Boxes, Ceiling Boxes, Etc.

For Armored Cable, Loom and Non-Metallic Sheathed Cable



CL-6



CL-18



CL-25



CL-9



CL-24



CL-26

Illustrated are the various types of the Appleton cable clamps as used in Appleton outlet boxes, ceiling boxes, etc.

Along with the listing of all boxes having clamps, the number of the clamp furnished is specified. These clamp numbers correspond with those listed below and illustrate more clearly the clamps furnished with each box.

Box No.	Clamp No.	Box No.	Clamp No.	Box No.	Clamp No.
510-LC	CL-9	550-LFSXE	CL-25	561-LXE	CL-26
511-LC	CL-9	550-LXE	CL-25	562-L	CL-24
513-LC	CL-9	551-L	CL-25	563-L	CL-24
521-LC	CL-9	551-LFS	CL-25	564-L	CL-24
532-L	CL-6	551-LXE	CL-25	570-L	CL-18
533-L	CL-6	560-L	CL-26	570-LFS	CL-18
550-L	CL-25	560-LXE	CL-26	571-L	CL-18
550-LFS	CL-25	561-L	CL-26	571-LFS	CL-18



## Appleton Bar Hangers

Schedule OB

With  $\frac{3}{8}$ -Inch Set Screw Stud

Box locked in place with screw-driver. No locknuts to run down.

Compact design provides more wiring space. Easier to install.

Illustration at left shows clamping arrangement.

## Straight Bar Hangers

No.	Length In.	Std. Pkg.	Wt., Lb. Std. Pkg.
S-21	18	100	30
S-22	24	100	70

## Shallow Offset Hangers

No.	Length In.	Std. Pkg.	Wt., Lb. Std. Pkg.
S-23	$19\frac{1}{2}$	100	31
S-25	24	100	37

## Deep Offset Hangers

No.	Length In.	Std. Pkg.	Wt., Lb. Std. Pkg.
S-24	$19\frac{1}{2}$	100	34
S-26	24	100	41

No. BHOW- $\frac{3}{8}$  Old Work Hangers—With Regular Stud

No.	Length In.	Std. Pkg.	Wt., Lb. Std. Pkg.
BHOW- $\frac{3}{8}$	12	100	44

## No. CBH Universal Box Cleat

No.	Length In.	Std. Pkg.	Wt., Lb. Std. Pkg.
CBH	21	100	61

Bar hanger can be furnished in any length longer than the standard length, at an extra charge.



## Appleton Bar Sets

Schedule OB

Black Enamel or Galvanized

For Flexible Steel Conduit and Armored Cable with  
1940 Code Rubber Insulation, Type T Insulation  
and 1947 Code Rubber Insulation



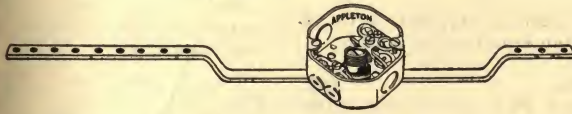
No. BH-532-L

Straight bar, round box with ears; four loom knockouts, with two CL-6 clamps and stud.

Diameter box, 3½ inches; depth, ¾ inch.

Standard package, 50. Weight per 100, 69 pounds.

No. BHS-550-L (No. 13)

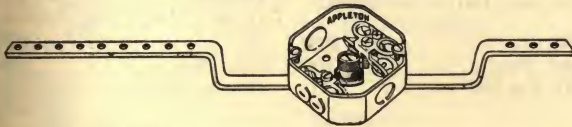


Shallow bar, octagonal box with ears; four loom knockouts, with two CL-25 two-way knockout closing clamps and stud.

Diameter box, 3½ inches; depth, 1½ inches.

Standard package 50. Weight per 100, 133 pounds.

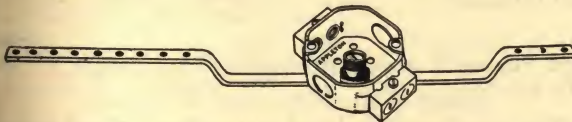
No. BHD-551-L, Deep Bar  
No. BHS-551-L, Shallow Bar



Bar, octagonal box with ears; four loom knockouts. Three ½-inch knockouts, with two CL-25 two-way knockout closing clamps and stud.

Diameter box, 4 inches; depth, 1½ inches.

Standard package, 50. Weight per 100: No. BHD-551-L, 148 pounds; No. BHS-551-L, 130 pounds.



No. BHS-570-L—No. 570-L Octagonal Box Mounted on Shallow Bar Hanger

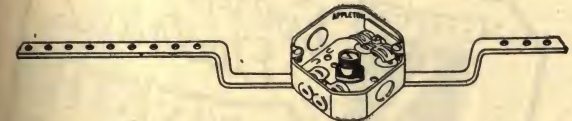
Diameter box, 3½ inches; depth, 1½ inches.

Standard package, 50. Weight per 100, 113 pounds.

No. BHD-571-L—No. 571-L Octagonal Box Mounted on Deep Bar Hanger

Diameter box, 4 inches; depth 1½ inches.

Standard package, 50. Weight per 100, 126 pounds.



No. BHS-560-L—No. 560-L Box Mounted on Shallow Hanger

Diameter box, 3½ inches; depth, 1½ inches.

Standard package, 50. Weight per 100, 133 pounds.

No. BHD-561-L—No. 561-L Box Mounted on Deep Hanger

Diameter box, 4 inches; depth, 1½ inches.

Standard package, 50. Weight per 100, 148 pounds.

## Appleton Universal Conduit Boxes and Covers

Schedule OB

Galvanized Finish Only  
4½-Inch Boxes



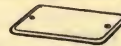
These boxes have three knockouts in each side, one in each end, and one in the bottom for ½-inch conduit. Also two nail holes and two ¼-inch untapped holes for fixture studs.

No.	DIMENSIONS, IN.			Std. Pkg.	Wt., Lb. Std. Pkg.
	Length	Width	Depth		
180	4½	2¾	1½	100	60
181	4½	2¾	1½	100	70
184	4½	2¾	1½	100	56

### Covers for 4½-Inch Universal Conduit Boxes

Standard package, 100.

No. 180-A



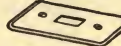
Steel cover, raised, blank. Wt., per 100, 15 pounds.

No. 180-K



Steel cover, flat, with ½-inch knockout in the center. Wt. per 100, 23 pounds.

No. 180-T



Steel cover, raised, for tumbler or toggle switches with square handle. Wt. per 100, 15 pounds.

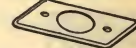
No. 180-W



Steel cover, raised for standard duplex receptacles. Wt. per 100, 10 pounds.

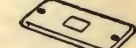
\*No. 180-Z cover has three knockouts so that 1, 2, or 3-devices may be used in a single-gang cover by removing knockouts to be utilized.

No. 180-X



Steel cover, raised, for flush plug receptacles. Weight per 100, 15 pounds.

No. 180-Y



Steel cover, raised, with 1-hole strap for P & S Despard, Bryant IL, or Hubbell LS wiring devices. Standard package, 25. Wt. per 100, 20 pounds.

\*No. 180-Z



Steel cover, raised, with 3-hole strap for P & S Despard, Bryant IL, or Hubbell LW wiring devices. Wt. per 100, 20 pounds.

## Appleton Special Outlet Boxes

Schedule OB

Galvanized Finish Only  
For Power House and Sub-Station Work  
No. 6-SLD Boxes



Knockouts: two 1¼-inch knockouts in each side and bottom; one 1¼-inch knockout in each end.

No.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lb. per 100
	Length	Width	Depth		
6-SLD	5¼	3¼	3	25	98
8594				25	25

Flat Blank Cover

### No. 5-OD Boxes

Depth, 2½ inches.

Knockouts: one 1¼-inch knockout in each side; one ½-inch knockout in bottom.

No.	Diam. In.	Std. Pkg.	Wt. Lb. per 100
5-OD	4½	25	65

### Covers

For No. 5-OD boxes.

No.	Description	Std. Pkg.	Wt. Lb. per 100
8595-A	Raised, ½-In. K.O. Center.....	25	28
8596	Flat Blank.....	25	20
8596-A	Flat, ½-In. K.O. Center.....	25	21



## Appleton Handy Boxes

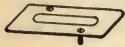
Schedule OB

Galvanized Finish Only  
No. 4-SS, 3/4-Inch Boxes

Furnished with three knockouts in each side, two in bottom and one in each end for 1/2-inch conduit.

No.....	4-SS
Length.....inches	3 3/4
Width.....inches	1 1/2
Depth.....inches	1 1/2
Standard Package.....	
Weight per 100.....pound	50

## No. 2520 Covers for No. 4-SS Boxes



Steel, cover, flat.

No.....	2520
Standard Package.....	20
Weight per 100.....pound	16



## 4-Inch Boxes

Knockouts for 1/2, 3/4 and 1-inch rigid conduit.

## No. 4-CS

## No. 4-CS

Furnished with three knockouts in each side, one in each end and two in bottom for 1/2 or 3/4-inch conduit.

No.....	4-CS-1/2	4-CS-3/4
Length.....inches	4	4
Width.....inches	2 1/8	2 1/8
Depth.....inches	1 7/8	1 7/8
Standard Package.....	100	100
Weight per 100.....pound	64	64

## No. 4-SSL

Furnished with three knockouts in each side, one in each end, and two in bottom for 1/2-inch conduit. For 3/4-inch and 1-inch conduit, two knockouts in each side, one in each end, and one in center of bottom.

No.....	4-SSL-1/2	4-SSL-3/4	4-SSL-1
Length.....inches	4	4	4
Width.....inches	2 1/8	2 1/8	2 1/8
Depth.....inches	2 1/8	2 1/8	2 1/8
Standard Package.....	100	100	100
Weight per 100.....pound	68	68	68

## No. 4-SSLD

Furnished with three knockouts in each side, one in each end, and two in bottom for 1/2-inch conduit. For 3/4-inch conduit, two knockouts, in each side, one in each end and two in bottom. For 1-inch conduit, two knockouts in each side, one in each end, and one in bottom.

No.....	4-SSLD-1/2	4-SSLD-3/4	4-SSLD-1
Length.....inches	4	4	4
Width.....inches	2 1/8	2 1/8	2 1/8
Depth.....inches	2 1/8	2 1/8	2 1/8
Standard Package.....	50	50	50
Weight per 100.....lb.	97	97	97

## No. 4-SSLS

Furnished with three knockouts in each side, one in each end and two in bottom for 1/2-inch conduit only.

No.....	4-SSLS-1/2
Length.....inches	4
Width.....inches	2 1/8
Depth.....inches	1 1/2
Standard Package.....	100
Weight per 100.....pound	66

## No. 4-SSLE Extension Ring



Extension ring furnished with eight 1/2-inch knockouts in sides and ends.

For Appleton Handy Boxes and Switch Boxes.

No.....	4-SSLE-1/2
Length.....inches	4
Width.....inches	2 1/8
Depth.....inches	1 1/2
Standard Package.....	50
Weight per 100.....pound	40

## Appleton Handy Box Covers

Schedule OB

Galvanized Finish Only  
for 4-Inch Boxes and Extension Ring

## No. 2540



Steel cover, flat.

No.....	2540
Std. Pkg.....	100
Wt. per 100.....lb.	15

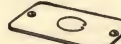
## No. 2510



Steel cover, raised, for standard duplex receptacles.

No.....	2510
Std. Pkg.....	100
Wt. per 100.....lb.	11

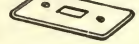
## No. 2555



Steel cover, flat, with 1/2-inch knockout in center.

No.....	2555
Std. Pkg.....	100
Wt. per 100.....lb.	20

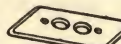
## No. 2594



Steel cover, raised, for square handle, tumbler or toggle switches.

No.....	2594
Std. Pkg.....	100
Wt. per 100.....lb.	14

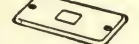
## No. 2537



Steel cover, raised for double push button switches.

No.....	2537
Std. Pkg.....	100
Wt. per 100.....lb.	11

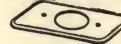
## No. 2598



Steel cover, raised, with one-hole strap for P & S Despard, Bryant IL and Hubbell LS wiring devices.

No.....	2598
Std. Pkg.....	100
Wt. per 100.....lb.	15

## No. 2539



Steel cover, raised, for flush plug receptacles (without lift cover).

No.....	2539
Std. Pkg.....	100
Wt. per 100.....lb.	11

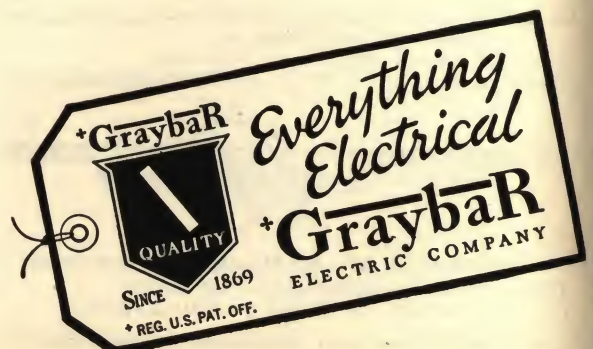
## \*No. 2599



Steel cover, raised, with three-hole strap for P & S Despard, Bryant IL and Hubbell LS wiring devices.

No.....	2599
Std. Pkg.....	100
Wt. per 100.....lb.	15

\*This cover has three knockouts so that 1, 2 or 3 devices may be used in a single gang cover by removing knockouts to be utilized.





## Appleton Guy Wire Conduit Clamps and Box Supports

Schedule OB

Cadmium Finish

For Rigid Conduit (Heavy-Wall) and Electrical Metallic Tubing



Outlet Box with No. 17210 Outlet Box Support and No. 17200 Clamp

Designed for use in industrial plants having irregular or high ceiling construction making it necessary to suspend the conduit system at a practical level. Box supports are equipped with  $\frac{3}{8}$ -inch fixture studs.

### Guy Wire Conduit Clamps

For Rigid Conduit (Heavy-Wall)

No.	Size of Conduit	Standard Package	Weight Pounds per 100
17200	$\frac{1}{2}$	100	17
17201	$\frac{3}{4}$	100	17
17202	1	100	17

For Electric Metallic Tubing

No.	Size of Conduit	Standard Package	Weight Pounds per 100
17T200	$\frac{1}{2}$	100	15
17T201	$\frac{3}{4}$	100	15
17T202	1	100	15



No. 17200

### Guy Wire Box Supports

No. 17210

To be used in bottom knockouts of outlet boxes.

Standard package, 100.

Weight per 100, 22 pounds.



No. 17210

No. 17211

To be used in side knockouts of outlet and handy boxes.

Standard package, 100.

Weight per 100, 18 pounds.



No. 17211

## National Redege Concrete Boxes

4-Inch Octagon—With Back Plates

Sherardized. Depth, 3 inches.



No.	Knockouts	Wt. Lb. Std. Pkg.
3302	No	10 13
3303	Yes	10 13

## No. 800 National Sherarduct Floor Boxes

For telephone, signal and bell systems, light and power; for underfloor conduit system, etc.

Box is levelled in rough and easily raised or lowered to meet floor finish without affecting level adjustment.

Water and moisture-proof.

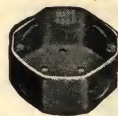
Adjustable box complete without receptacle.



No.	Each	Knockouts	Unit Pkg.	Std. Pkg.	Wt. Lb. Std. Pkg.
800	\$3.50	Bottom Sides	1	25	58

## No. 2900 National Redege Outlet Boxes

$\frac{3}{4}$ -Inch Octagon— $\frac{1}{2}$ -Inch Deep Inside



Galvanized finish.

Universal No. 24151. One  $\frac{1}{2}$ -inch conduit bottom knockout; four  $\frac{1}{2}$ -inch conduit side knockouts.

Packed 50 in standard package.

No. 2900, Weight per Std. Pkg., 25 Pounds.. per 100 \$12.60

## No. 2835 National Redege Shallow Ceiling Boxes

$\frac{3}{2}$ -Inch Round— $\frac{1}{2}$ -Inch Deep



Takes  $\frac{3}{4}$ -inch standard covers.

Galvanized finish.

Universal No. 36113. Diameter and depth inside,  $3\frac{1}{2} \times \frac{1}{2}$  inches. One  $\frac{1}{2}$ -inch conduit. 8-loom knockouts. With cover lugs.

Packed 50 in standard package.

No. 2835, Weight per Std. Pkg., 20 Pounds.. per 100 \$12.50

## National Outlet Box Covers

For  $\frac{3}{4}$ -Inch Diameter Octagon and Round Boxes

Galvanized finish.

Actual outside diameter,  $3\frac{3}{8}$  inches.

Packed 100 in standard package.

No. 28A

No. 28AQ



Raised, closed.  
Depth,  $\frac{3}{8}$  inch.



Flat, with  $\frac{1}{2}$ -inch knock-out in center.

No.	Per 100	Wt. Lb. Std. Pkg.
28A	24C2	\$6.30 22

No.	Per 100	Wt. Lb. Std. Pkg.
28AQ	24C6	\$6.30 20

No. 28L

No. 28AC



Flat, closed.



Raised, with  $\frac{7}{8}$ -inch metal eyelet for drop cord;  $\frac{3}{8}$ -inch deep.

No.	Per 100	Wt. Lb. Std. Pkg.
28AC	24C1	\$5.20 20

No.	Per 100	Wt. Lb. Std. Pkg.
28L	24C12	\$6.30 22

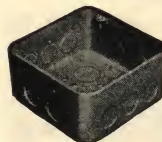
## No. 2590 National Redege Outlet Boxes

$4\frac{1}{16}$ -Inch Square

Galvanized finish only.

Packed 25 in a standard package.

Weight per standard package, 32 pounds.



No.	Per 100	Depth Inside In.	Knockouts
2590	72171	\$94.00 $2\frac{3}{8}$	Bottom Sides

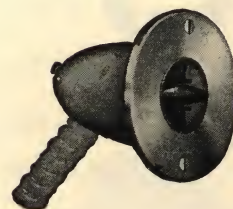
## No. 60 National Electric Spigots

For inside use. Utility outlet for  $14/2$  and  $12/2$  armored cable or loom wire.

Angle box slips into hole; wide flange covers work marks; no sharp bend in cable. Complete assembly; small wiring connection.

Complete with 10-ampere, 250-volt or 15-ampere, 125-volt receptacle and cable clamp

Packed 50 in standard package.

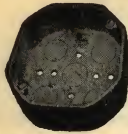


Weight per standard package, 25 pounds.

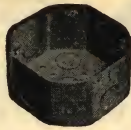
No. 60.....per 100 \$88.00



### National Redege Outlet Boxes 4-Inch Octagon



No. 2700



No. 2714

Galvanized finish.

Packed 50 in a standard package.

No.	Universal	Per 100	Depth Inside Inches	Knockouts	Wt. Lb. Std. Pkg.
National	Universal			Bottom Sides	
2700	54151	\$16.50	1 1/2	5-1/2" 4-1/2"	32
2701	54151	20.50	1 1/2	3-1/2" 4-1/2"	32
2702	54151	20.50	1 1/2	2-3/4" 4-3/4"	32
2714	54171	32.00	2 1/8	3-1/2" 2-1/2"	41
2715	54171	32.00	2 1/8	5-1/2" 4-1/2"	41
				3-1/2" 4-3/4"	41

### No. 2704 National Redege Extension Rings

4-Inch Octagon



Galvanized finish.

Universal No. 55151. Depth inside 1 1/2 inches; four 1/2-inch knockouts.

Packed 50 in a standard package.

Weight per standard package, 22 pounds.

No. 2704.....per 100 \$28.00

### National Outlet Box Covers For 4-Inch Octagon and Round Boxes

Sherardized finish.

Actual outside diameter, 4 1/8 inches.

Packed 50 in a standard package.

No. 26AC



Flat, closed.

No. 26L



Raised 5/8 inch, with 7/8-inch metal eyelet for drop cord.

No.	Universal	Per 100	Wt. Lb. Std. Pkg.	No.	Universal	Per 100	Wt. Lb. Std. Pkg.
National	Universal			National	Universal		
26AC	54C1	\$6.80	30	26L	54C12	\$8.40	30

No. 26AQ



Flat, with 1/2-inch knockout in center.

No. 26Q



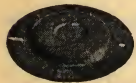
Raised 5/8 inch high, 2 3/4-inch opening.

Lugs tapped 8-32 on 2 3/4-inch centers.

26AQ	54C6	\$7.70	30	26Q	54C3	\$10.00	30
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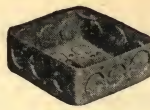
No. 26AR

Raised, with 1/2-inch knockout in center; 5/8-inch deep.



No.	Universal	Per 100	Wt. Lb. Std. Pkg.
National	Universal		
26AR	54C7	\$8.40	35

### National Redege Square Outlet Boxes 4-Inch Square—1 1/2-Inch Deep



No. 2410

Double riveted. Made of No. 14 gage steel. Cover lugs recessed so head of screw is below box top; with 3/8-inch screws.

Underwriters' approval and meets Federal specification.

Galvanized.

No.	Universal	Per 100	Bottom	Knockouts Sides	Std. Pkg.	Wt. Lb. Std. Pkg.
National	Universal					
2400	52151	\$19.50	5-1/2"	10 1/2"	50	42
2401	52151	23.50	1-1/2"	8 3/4"	50	42
2410	52151	23.50	4-3/4"	8 1/2"	50	42
			2-3/4"	4 3/4"		

### No. 2404 National Redege Extension Rings 4-Inch Square—1 1/2-Inch Deep



Two tapped lugs at top and two untapped lugs at bottom.

Galvanized.

2404	53151	\$30.00	....	10 1/2"	50	30
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### National Outlet Box Covers For 4-Inch Square Boxes

Galvanized. Actual dimensions, 4 3/16 inches square.

Packed 100 in standard package.

No. 24AC

Flat closed cover.



No.	Universal	Per 100	Wt. Lb. Std. Pkg.
National	Universal		
24AC	52C1	\$7.70	38

No. 24Q



Raised with 2 3/4-inch opening, 5/8 inch deep.

Lugs tapped 8-32 on 2 3/4-inch centers.

Has extra slots and screw holes to permit either vertical or horizontal mounting.

24Q 52C3 \$10.20 33

### National Flush Device Covers For 4-Inch Square Boxes



No. 24HZ



No. 24HY



No. 24KY



No. 24H



No. 24K

Have extra slots and screw holes to permit either vertical or horizontal mounting on 4-inch square boxes.

Galvanized.

Actual outside dimension, 4 3/16 inches square.

No.	Universal	Per 100	Depth In.	No. of Devices	Wt. Lb. Std. Pkg.	Std. Pkg.
National	Universal					
24HZ	52C62	\$14.00	1/4	1	26	100
24HY	52C13	15.00	1/2	1	16	50
24KY	52C17	19.00	1/2	2	12	50
24H	52C14	17.50	3/4	1	18	50
24K	52C18	20.00	3/4	2	18	50



### National Redege Universal Economy Boxes

3 $\frac{3}{8}$ x3 Inches Obround—1 $\frac{1}{2}$ -Inches Deep



No. 2966



No. 2969

For A.B.C. cable, loom and loom wire.  
Cable knockouts take sizes 14/2, 14/3, 12/2, and 12/3 armored cable or loom wire. Galvanized.

No.	Per 100	Fixture Stud	KNOCKOUTS		Std. Pkg.	Std. Pkg.	Wt. Lb.
			Bottom	Sides			
*2966	\$28.00	Yes	4-Cable	4-Cable	50	35	
2969	22.00	No	1- $\frac{1}{2}$ "	2- $\frac{1}{2}$ "	50	35	

\*Also available mounted on offset bars. †Conduit.

### National Redege Economy Boxes

3 $\frac{3}{4}$  Inches Diameter Round— $\frac{3}{4}$ -Inch Deep



No. 2365



No. 2368

For A.B.C. cable, loom, or loom wire.  
Cable knockouts take 14/2, 14/3, 12/2, and 12/3 armored cable or loom wire. Boxes hold from 1 to 4 cables of 2 or 3 wires each or 4 pieces of loom or combinations of both. Clamps lock cable in double grip. Plates with rimmed hole serve as cable stops and bushings. Bushing shelf is tapped for cover screws.

Galvanized finish only.

No.	Per 100	Clamps Used	Fixture Stud	KNOCKOUTS		Std. Pkg.	Std. Pkg.	Wt. Lb.
				Bottom	Sides			
2365	\$10.50	CL-65	$\frac{3}{8}$ " Male	4- $\frac{21}{32}$ "	.....	50	31	
2368	18.00	CL-65	No	4- $\frac{21}{32}$ "	.....	50	22	

1- $\frac{1}{2}$ "  
KO Conduit

### No. 2365-D National Redege Economy Boxes

3 $\frac{3}{8}$ x3 Inches Obround—1 $\frac{1}{2}$ -Inch Deep



Galvanized.

For A.B.C. cable, loom, or loom wire.  
Cable knockouts take 14/2, 14/3, 12/2, and 12/3 armored cable or loom wire.

Can be mounted on bars.

No.	Per 100	Clamps Used	Fixture Stud	KNOCKOUTS		Std. Pkg.	Std. Pkg.	Wt. Lb.
				Bottom	Sides			
2365-D	\$28.00	2 CL-65	$\frac{3}{8}$ " Male	*	2- $\frac{1}{2}$ "	50	31	

\*4-cable or loom.

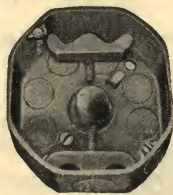
### National Redege Economy Boxes

3 $\frac{3}{4}$ -Inch Diameter Round



No. 2375

Galvanized finish



No. 2910-L2

For Loom and Loom Wire

No.	Per 100	Size Diam. In.	Depth In.	Clamps Used	Fixture Stud	KNOCKOUTS		Std. Pkg.	Std. Pkg.	Wt. Lb.
						Bottom	Sides			
2375	\$19.50	3 $\frac{3}{4}$	$\frac{1}{2}$	2 CL-65	$\frac{3}{8}$ " Male	4-Loom	.....	50	18	
2910-L2	18.50	*3 $\frac{1}{4}$	1 $\frac{1}{2}$	2 CL-65	No	8-Loom	4-Loom	50	26	

\*Octagon. †For conduit.

### National Economy Bar Hangers

#### No. 2263 Straight



For shallow boxes in new work, or for holding boxes to concrete forms. Will fit any box having  $\frac{1}{2}$ -inch knockout.

With  $\frac{1}{2}$ -inch deep boxes where bar is nailed to joints or studding, edge of box will be flush with ordinary plaster.

No.	Per 100	Length Bar, In.	Std. Pkg.	Wt. Lb.
2263	\$14.50	18	50	26

#### No. 2265 Shallow Offset



For  $\frac{1}{2}$ -inch deep boxes without switch covers or plaster rings; offset brings box edge flush with plaster. Will fit any box having  $\frac{1}{2}$ -inch knockout. Offset,  $1\frac{1}{16}$  inches deep.

2265	\$17.00	19 $\frac{1}{2}$	50	32
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#### No. 2266 Deep Offset



For  $\frac{1}{2}$ -inch deep boxes with switch covers or plaster rings; offset brings covers  $\frac{5}{8}$ -inch high, flush with plaster. Will fit any box having  $\frac{1}{2}$ -inch knockout. Offset,  $1\frac{1}{16}$  inches deep.

2266	\$17.00	19 $\frac{1}{2}$	50	33
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#### No. 2268 Box Cleat



For  $\frac{1}{2}$ -inch deep boxes with covers and integral studs, or without studs. Offset has slots for stove bolts to hold box, and is right depth to bring  $\frac{5}{8}$ -inch covers flush with plaster. Offset,  $1\frac{1}{16}$  inches deep.

2268	\$10.50	21	50	27
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### National Redege Economy Boxes

No. 2765 Economy Boxes for armored cable and Nos. 2966 and 2365-D for armored cable, loom or loom wire are furnished mounted on offset bars, 19 $\frac{1}{2}$  inches long with offset of  $\frac{1}{16}$  inches bringing edge of box flush with plaster line for an installation where no box cover is to be used.

The boxes are fastened on offset bars by a diagonal saddle clamp allowing bar to cross bottom of box without obstructing knockouts.

Galvanized finish.

Packed 25 in standard package.

#### No. 3814-FS



Diameter, 3 $\frac{3}{8}$  inches; 1 $\frac{1}{2}$  inches deep; 4-cable knockouts in bottom; 4-cable and two  $\frac{1}{2}$ -inch conduit knockouts in sides; 2 hole, 1 screw clamp. Duplex cable clamps,  $\frac{3}{8}$ -inch fixture stud; with cover lugs.

No.	Per 100	No. Box Used	Wt. Lb. Std. Pkg.
3814-FS	\$40.00	2966	31

#### No. 3812-FS



Round, 3 $\frac{3}{8}$  inches; 1 $\frac{1}{2}$  inches deep inside; 4-cable knockouts in bottom; two  $\frac{1}{2}$ -inch knockouts in sides; 2 CL65 clamps;  $\frac{3}{8}$ -inch male stud; with cover lugs.

3812-FS	\$40.00	2365-D	31
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### National Redege Switch Boxes For Conduit Interchangeable Sectional

May be used for armored cable with standard connectors.  
Square corners.  
Galvanized finish.  
Packed 50 in a standard package.

**No. 8**

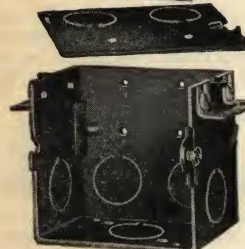
With one 1/2-inch conduit knockout in each end; two 1/2-inch conduit in each side; one 1/2-inch conduit in bottom and fixture stud holes.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
8	\$18.50	2	30

**No. 13**

With one 1/2-inch conduit knockout in each end; two 1/2-inch conduit in each side; one 1/2-inch conduit in bottom and fixture stud holes.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
13	\$19.50	2 1/2	36

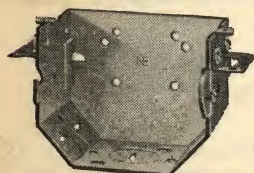
**No. 14**

With one 1/2-inch conduit knockout in each end; two 1/2-inch conduit in each side; one 1/2-inch conduit in bottom and fixture stud holes.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
14	\$20.00	2 3/4	37

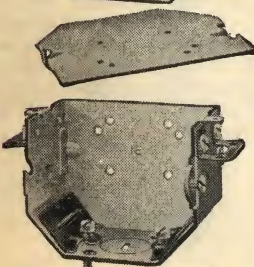
### National Redege Switch Boxes For Non-Metallic Sheathed Cable Interchangeable Sectional

Beveled corners, galvanized finish.  
Packed 50 in standard package.

**No. 3**

With two 5/8-inch loom knockouts in bevels; two 5/8-inch loom in sides; one 1/2-inch conduit knockout in bottom and fixture stud holes. No clamps.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
3	\$18.50	2 1/4	30

**No. 4**

With two 5/8-inch loom knockouts in bevels; two 5/8-inch loom in sides; 1/2-inch conduit knockout in bottom and fixture stud holes; 2-loom.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
4	\$19.50	2 1/4	32

**No. 4-SB**

This is No. 4 with welded-on stud bracket and lath support; 2-loom.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
4-SB	\$28.50	2 1/4	42

### National Redege Switch Boxes Interchangeable Sectional

For A.B.C. armored cable, loom and loom wire.

Cable knockouts take 14/2, 14/3, 12/2, and 12/3 armored cable and loom wire. Two one-piece all-purpose clamps. Square corners.

Galvanized finish.

Packed 50 in a standard package.

**No. 7**

With two 2 3/4-inch cable knockouts in ends, two in sides; 1/2-inch knockout in bottom. Depth, 2 inches.

Weight per standard package, 32 pounds.

No. 7.....per 100 \$21.00

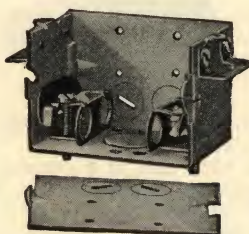
**No. 12**

With two 2 3/4-inch cable knockouts in ends; two in sides; 1/2-inch knockout in bottom; two one-piece all-purpose clamps.

Depth, 2 1/2 inches.

Weight per standard package, 37 pounds.

No. 12.....per 100 \$21.70

**No. 12-SB**

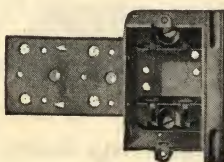
This is No. 12 with weld-on stud bracket and lath support.

With 2 one-piece all-purpose clamps.

Depth, 2 1/2 inches.

Weight per standard package, 46 pounds.

No. 12-SB.....per 100 \$29.50

**No. 12-X**

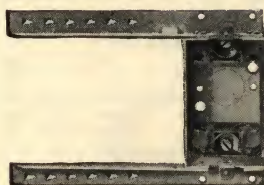
No. 12 with extended ears.

With 2 one-piece all-purpose clamps.

Depth, 2 1/2 inches.

Weight per standard package, 45 pounds.

No. 12-X.....per 100 \$24.50



### No. 4170 National Redege Switch Boxes

#### Sectional

For shallow type switches and devices.  
For rigid conduit and A.B.C. armored cable.

Square corners.

With one 1/2-inch conduit knockout in sides, ends and bottom; one 2 3/4-inch cable knockout in each side. No supporting ears on box. Depth, 1 1/2 inches.

Galvanized finish.

Standard package, 50; weight 28 pounds.

No. 4710.....per 100 \$27.50





## National Redege Gang Boxes



Suitable holes are provided in the bottom for nails.  
Galvanized finish.  
Width,  $4\frac{1}{2}$  inches; depth inside,  $1\frac{1}{16}$  inches.

No.	Per 100	Gangs	Length In.	KNOCKOUTS			Bottom	Wt.	
				Each End	Each Side			Std. Pkg.	Lb. Pkg.
3002	\$113.20	2	$6\frac{7}{8}$	$2\frac{1}{2}$ "	$5\frac{1}{2}$ "		$5\frac{1}{2}$ "	5	8
3003	163.20	3	$8\frac{7}{8}$	$2\frac{1}{2}$ "	$5\frac{1}{2}$ "		$10\frac{1}{2}$ "	5	9
3013	163.20	3	$8\frac{5}{8}$	$2\frac{3}{4}$ "	$6\frac{3}{4}$ "		$\{6\frac{1}{2}$ " $4\frac{3}{4}$ "	5	9

Low voltage sectors furnished installed in boxes if desired. These divided boxes are used for standard plate spacing with high and low voltage signal systems, or radio connections—aerial and ground with high voltage receptacles. Prices upon application.

## National Redege Flush Device Boxes

$4\frac{1}{8}$  Inches Long— $2\frac{1}{8}$  Inches Wide



Lugs are tapped on  $3\frac{3}{32}$  inch centers for all standard makes of push button and rectangular rotary switches and flush convenience outlets.

Two nail holes in bottom, and holes for fixture stud bolts.

National- al	No.	Uni- versal	Per 100	Depth In.	KNOCKOUTS			Std. Pkg.	Lb. Pkg.
					Bottom	Sides	Ends		
	2018	58351	\$18.00	$1\frac{1}{2}$	$3\frac{1}{2}$ "	$3\frac{1}{2}$ "	$1\frac{1}{2}$ "	50	29
	2020	58361	18.00	$1\frac{7}{8}$	$3\frac{1}{2}$ "	$3\frac{1}{2}$ "	$1\frac{1}{2}$ "	50	32
	2022	58371	18.00	$2\frac{1}{8}$	$3\frac{1}{2}$ "	$3\frac{1}{2}$ "	$1\frac{1}{2}$ "	50	32

## National Gang Box Covers



Galvanized finish;

No.	Per 100	Gangs	Designed for Box No.	Extra K.O. Screw Holes Permit Use with Box No.	Wt.	
					Std. Pkg.	Lb. Pkg.
30C2	\$50.00	2	3002, 3012	.....	50	19
30C3	75.30	3	3003, 3013	3002, 3012	25	13

## National Steel Covers for Flush Device Boxes



No. 20A



No. 20C



No. 20E

Will fit other makes of similar type utility boxes. Covers are slightly countersunk or flanged, and rounded on corners.

Galvanized.

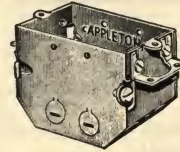
No.	Per 100	Description	Std. Pkg.	Lb. Pkg.
20A	\$7.20	Blank.....	100	14
20C	12.00	For Standard Duplex Receptacle...	100	12
20E	12.00	For Square Handle Toggle Switch..	100	14

## No. 33 Appleton Switch Boxes

Schedule SB

Enameled or Galvanized  
Without Clamps

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing



Ears extend  $\frac{1}{2}$ -inch from body of box.  
Knockouts,  $\frac{1}{2}$ -inch, 2 in each side, 2 in each beveled corner only. Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in center of bottom.

No.	DIMENSIONS, INCHES			Type of Clamp	Std. Pkg.	Wt., Lb. Std. Pkg.
	Length	Width	Depth			
33	3	2	$2\frac{1}{4}$	None	100	60

## No. 44 Appleton Switch Boxes

Schedule SB

Enameled or Galvanized  
With No. CL-5 Clamps

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing



Knockouts,  $\frac{1}{2}$ -inch; two in each side, two in each beveled corner only; also  $\frac{1}{2}$ -inch knockout and fixture stem holes in center of bottom.

No.	DIMENSIONS, INCHES			Type of Clamp	Std. Pkg.	Wt., Lb. Std. Pkg.
	Length	Width	Depth			
44	3	2	$2\frac{1}{4}$	CL-5	100	60

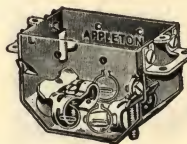
## Appleton Special Switch Boxes

Schedule SB

With CL-16 Clamps

Enameled or Galvanized

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing



Knockouts,  $\frac{1}{2}$ -inch, two in each side, two in each beveled corner only. Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in center of bottom.

No.	DIMENSIONS, INCHES			Type of Clamp	Std. Pkg.	Wt., Lb. per 100
	Length	Width	Depth			
387	3	2	$2\frac{1}{4}$	CL-16	100	68

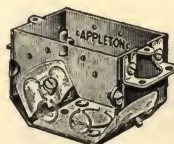
## No. 388 Appleton Switch Boxes

Schedule SB

With No. CL-17 Clamp

Enameled or Galvanized

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing



Knockouts,  $\frac{3}{16}$ -inch; two in each side, two in each beveled corner.

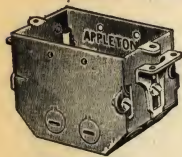
Also one  $\frac{1}{2}$ -inch conduit K.O. and fixture stem holes in center of bottom.

No.	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lb. per 100
	Length	Width	Depth		
388	3	2	$2\frac{1}{4}$	100	64

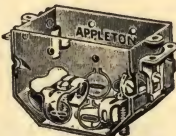


**Appleton Switch Boxes***Schedule SB***With Adjustable Ears****Enameled or Galvanized**

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing

**No. 33-AE**

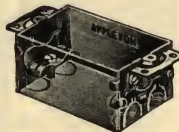
Knockouts,  $2\frac{1}{32}$ -inch: Two in each end, two in opposite sides; also one knockout in bottom for  $\frac{1}{2}$ -inch conduit.

**No. 387-AE**

No.	Type of Box Used	DIMENSIONS, INCHES			Clamps	Std. Pkg.	Wt., Lb. per 100
		Length	Width	Depth			
33-AE	33	3	2	$2\frac{1}{4}$	None	100	68
44-AE	44	3	2	$2\frac{1}{4}$	CL-5	100	72
387-AE	387	3	2	$2\frac{1}{4}$	CL-16	100	72

**No. 95 Appleton Solid Switch Boxes***Schedule SB***With Two No. CL-7 Clamps****Black Enameled or Galvanized**

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing

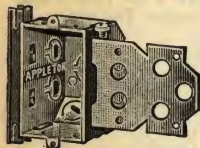


Knockouts, two  $2\frac{1}{32}$ -inch in end corners.

No.	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lb. per 100
	Length	Width	Depth		
95	3	2	$1\frac{1}{2}$	100	55

**Appleton Switch Boxes***Schedule SB***With Lath Support and Mounting Bracket****Black Enameled or Galvanized**

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing

**No. 33-B**

Knockouts,  $2\frac{1}{32}$ -inch; two in each side, two in each beveled corner. Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.

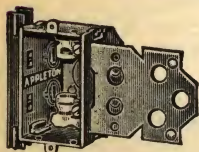
No. 33-B is furnished without clamps.

No. 44-B is furnished with clamps.

No.	DIMENSIONS, INCHES			Clamps (Two)	Std. Pkg.	Wt., Lb. per 100
	Length	Width	Depth			
33-B	$2\frac{1}{4}$	3	2	None	50	78
44-B	$2\frac{1}{4}$	3	2	CL-5	50	82

**No. 387-B Appleton Switch Boxes***Schedule SB***With Mounting Bracket and Lath Support****Black Enameled—Galvanized****With CL-16 Clamps**

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non Metallic Flexible Tubing

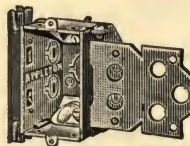


Knockouts,  $2\frac{1}{32}$ -inch, two in each side, two in each beveled corner; four  $2\frac{1}{32}$ -inch and one  $\frac{1}{2}$ -inch in bottom.

No.	DIMENSIONS, INCHES			Clamps (2)	Std. Pkg.	Wt., Lb. per 100
	Length	Width	Depth			
387-B	3	2	$2\frac{1}{4}$	CL-16	100	68

**No. 388-B Appleton Switch Boxes***Schedule SB***With Mounting Bracket and Lath Support****With Two No. CL-17 Clamps****Black Enameled or Galvanized**

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing

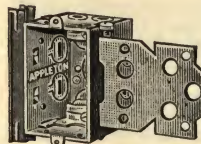


Knockouts, two  $2\frac{1}{32}$ -inch; two in sides; two in each beveled corner. Also one  $\frac{1}{2}$ -inch conduit K.O. and fixture stem holes in bottom.

No.	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lb. per 100
	Length	Width	Depth		
388-B	3	2	$2\frac{3}{4}$	50	82

**Appleton Switch Boxes***Schedule SB***With Mounting Bracket and Lath Support****Black Enameled—Galvanized**

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing

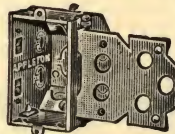
**No. 385-B**

Knockouts,  $2\frac{1}{32}$ -inch, two in each end, two in sides; four  $2\frac{1}{32}$ -inch and one  $\frac{1}{2}$ -inch in bottom. Both boxes are furnished with CL-23 clamps.

No.	DIMENSIONS, INCHES			Clamps (2)	Std. Pkg.	Wt., Lb. per 100
	Length	Width	Depth			
385-B	3	2	2	CL-23	50	86
386-B	3	2	$2\frac{1}{2}$	CL-23	50	93

**Appleton Switch Boxes***Schedule SB***With Mounting Bracket—Without Lath Support****Black Enameled or Galvanized**

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing

**No. 44-NL**

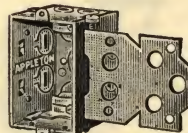
Knockouts,  $2\frac{1}{32}$ -inch; two in each side, two in each beveled corner. Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.

No. 33-NL furnished without clamps.  
No. 44-NL furnished with clamps.

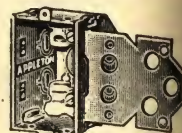
No.	DIMENSIONS, INCHES			Clamps (Two)	Std. Pkg.	Wt., Lb. per 100
	Length	Width	Depth			
33-NL	3	2	$2\frac{1}{4}$	None	50	74
44-NL	3	2	$2\frac{1}{4}$	CL-5	50	82

**Appleton Switch Boxes***Schedule SB***With Mounting Bracket—Less Lath Support****Black Enameled—Galvanized**

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing

**No. 385-NL**

Knockouts,  $3\frac{1}{32}$ -inch, two in each side, two in each end; four  $2\frac{1}{32}$ -inch and one  $\frac{1}{2}$ -inch in bottom.

**No. 387-NL**

No.	DIMENSIONS, INCHES			Clamps (2)	Std. Pkg.	Wt., Lb. per 100
	Length	Width	Depth			
385-NL	3	2	2	CL-23	50	78
386-NL	3	2	$2\frac{1}{2}$	CL-23	50	88
387-NL	3	2	$2\frac{3}{4}$	CL-16	50	84

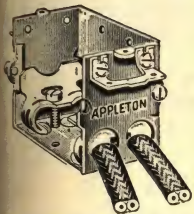


## Appleton Switch Boxes

Schedule SB

With Adjustable Ears—CL-23 Clamps  
Black Enameled—Galvanized

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing



Knockouts, two  $\frac{1}{32}$ -inch in ends, two  $\frac{1}{32}$ -inch in sides; four  $\frac{1}{32}$ -inch and one  $\frac{1}{2}$ -inch in bottom.

Furnished with two CL-23 clamps which securely hold the cable in place without injury to the outer covering. Braze of cable does not have to be removed before inserting it into box.

With Side Removed to Show Clamps Used

No.	DIMENSIONS, INCHES			Clamps (2)	Std. Pkg.	Wt., Lb. per 100
	Length	Width	Depth			
385	3	2	2	CL-23	100	65
386	3	2	2½	CL-23	100	77

## Appleton VB Bracket Switch Boxes

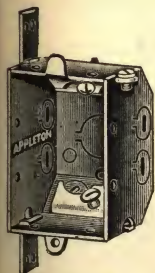
Schedule SB

Without Lath Support

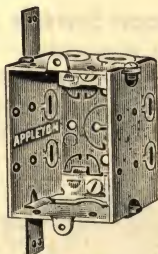
Black Enameled—Galvanized

For Non-Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing

Used in Wall Board, Beaver Board, Veneer Board and Plaster Board Construction



No. 44-VB



No. 385-VB



No. 387-VB

Plastered wall construction has given away, to a large extent, to the popularity of wall board, veneer board and similar type of construction.

In order to simplify the electricians' work in installations using wall board or veneer board, the VB Bracket Switch Box provides a simple solution to what ordinarily is a rather complicated task. The flat type VB bracket spot welded onto the long side of a standard switch box provides an easy means of solidly mounting the switch box to the wide side of a two-by-four, thus eliminating the need for channeling out the wall board or the studding. The VB Bracket Switch Box is easily fixed into place so that the edges of the switch box come perfectly flush with the outer surface of the board.

May also be used under  $\frac{3}{4}$ -inch Celotex or boards having a thickness up to  $\frac{1}{8}$ -inch.

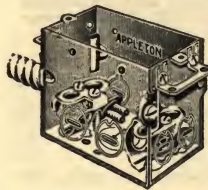
No.	Depth Inches	Box Used	Clamps (Two)	Std. Pkg.	Wt. Lb. per 100
33-VB	2¼	No. 33	None	50	68
44-VB	2¼	No. 44	CL-5	50	72
385-VB	2	No. 385	CL-23	50	77
386-VB	2½	No. 386	CL-23	50	84
387-VB	2¼	No. 387	CL-16	50	72

## No. 83 Appleton Switch Boxes

Schedule SB

With No. CL-25 2-Way Knockout Closing Clamps  
Black Enameled or Galvanized

For Flexible Steel Conduit and Armoured Cable with 1940 Code Rubber Insulation, Type T Insulation, and 1947 Code Rubber Insulation



Knockouts,  $\frac{1}{32}$ -inch; two in each side, two in each end, and four in bottom.

Also one  $\frac{1}{2}$ -inch knockout and fixture stem holes in center of bottom.

Clamp will hold cable with entrance either through end or bottom knockouts.

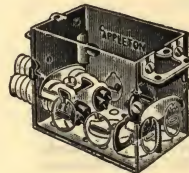
No.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lb. per 100
	Length	Width	Depth		
83	3	2	2½	100	83

## Appleton Switch Boxes

Schedule SB

With No. CL-13 Clamps  
Black Enameled or Galvanized

For Flexible Steel Conduit and Armoured Cable with 1940 Code Rubber Insulation, Type T Insulation, and 1947 Code Rubber Insulation



Knockouts: ends, two  $\frac{1}{32}$ -inch; sides, two  $\frac{1}{32}$ -inch; bottom, four  $\frac{1}{32}$ -inch and one  $\frac{1}{2}$ -inch for conduit.

No.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lb. per 100
	Length	Width	Depth		
171-F	3	2	2	100	65
173-F	3	2	2½	100	77
175-F	3	2	3	100	89

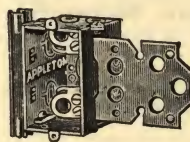
## No. 83-B Appleton Switch Boxes

Schedule SB

With Lath Support and Mounting Bracket  
With No. CL-25 Clamps

Black Enameled or Galvanized

For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation, and 1947 Code Rubber Insulation



Knockouts,  $\frac{1}{32}$ -inch, two in each side, two in each end, and four in bottom.

Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.

Clamp will hold cable with entrance either through end or bottom knockouts.

No.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lb. per 100
	Length	Width	Depth		
83-B	3	2	2½	50	100

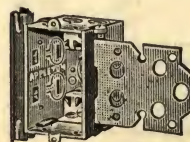
## Appleton Switch Boxes

Schedule SB

With Lath Support and Mounting Bracket  
With Two No. CL-13 Clamps

Black Enameled or Galvanized

For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation, and 1947 Code Rubber Insulation



For armored cable. With special flanged, bushed visible clamps.

Knockouts,  $\frac{1}{32}$ -inch, two in each side, two in each end, and four in bottom.

Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.

No.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lb. per 100
	Length	Width	Depth		
171-FB	3	2	2	50	86
173-FB	3	2	2½	50	93



## Appleton VB Bracket Switch Boxes

Schedule SB

Without Lath Support

Black Enameled—Galvanized

For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation, and 1947 Code Rubber Insulation



Used in wall board, beaver board, veneer board and plaster board construction.

Knockouts, two  $2\frac{1}{2}$ -inch in ends, two  $2\frac{1}{2}$ -inch in sides; four  $2\frac{1}{2}$ -inch and one  $\frac{1}{2}$ -inch in bottom.

Length of box, 3 inches; width, 2 inches.

No.	Type of Box Used	Depth Inches	Clamps (2)	Std. Pkg.	Wt., Lb. per 100
171-FVB	171-F	2	CL-13	100	76
173-FVB	173-F	$2\frac{1}{2}$	CL-13	100	83

## Appleton Switch and Receptacle Boxes

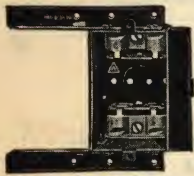
Schedule SB

With Extended Ears and Lath Support

Black Enamel or Galvanized

For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation, and 1947 Code Rubber Insulation

Switch Boxes with Two No. CL-13 Clamps

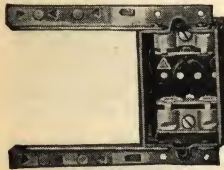


No. 173-FEE

With knockout-closing, bushed, visible clamps. Knockouts,  $2\frac{1}{2}$ -inch, two in each side, two in each end, and four in bottom.

Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.

No.	Length	Width	Depth	Std. Pkg.	Wt. Lb. per 100
173-FEE	3	2	$2\frac{1}{2}$	50	94



No. 173-FEX

With flanged, bushed, visible clamps. Knockouts,  $2\frac{1}{2}$ -inch, two in each side, two in each end, and four in bottom.

Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.

No.	Length	Width	Depth	Std. Pkg.	Wt. Lb. per 100
171-FEX	3	2	2	50	91
173-FEX	3	2	$2\frac{1}{2}$	50	81

## Receptacle Boxes with One No. CL-13 Clamp

For Receptacles Mounted in Plaster

With  $2\frac{1}{2}$ -inch knockouts, two in each side, two in each end and four in bottom. With knockout closing, visible clamp.

Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.



No. 173-FES

No.	Length	Width	Depth	Std. Pkg.	Wt. Lb. per 100
173-FES	3	2	$2\frac{1}{2}$	50	90

For Receptacles Mounted in Wooden Baseboard



173-FESW

No.	Length	Width	Depth	Std. Pkg.	Wt. Lb. per 100
173-FESW	3	2	$2\frac{1}{2}$	50	91

## Appleton Sectional Switch Boxes

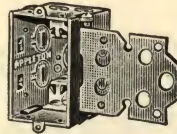
Schedule SB

With Mounting Bracket—Without Lath Support

With Two No. CL-13 Clamps

Black Enameled or Galvanized

For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation, and 1947 Code Rubber Insulation



Knockouts,  $2\frac{1}{2}$ -inch; two in each side, two in each end, and four in bottom.

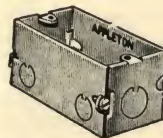
Also one  $\frac{1}{2}$ -inch knockout and fixture stem holes in center of bottom.

No.	Length	Width	Depth	Std. Pkg.	Wt. Lb. per 100
171-FNL	3	2	2	50	78
173-FNL	3	2	$2\frac{1}{2}$	50	88

## No. 444 Appleton Switch Boxes

Schedule SB

Black Enameled or Galvanized

For  $\frac{1}{2}$ -Inch Rigid Conduit (Heavy Wall)

For new work only. Designed as a combination loom and conduit, shallow switch box for use where there are thin partitions and also for outside wall work.

The knockouts in ends, also in bottom, are for  $\frac{1}{2}$ -inch conduit and the two  $2\frac{1}{2}$ -inch knockouts on either side are for loom or  $\frac{3}{8}$ -inch flexible conduit. Also one  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.

All sides are interchangeable. Without supporting ears.

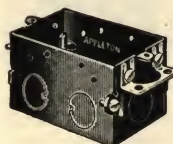
No.	Length	Width	Depth	Std. Pkg.	Wt. Lb. per 100
444	4	2	$1\frac{7}{8}$	50	65

## Appleton Switch Boxes

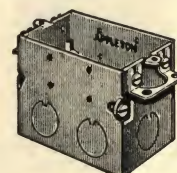
Schedule SB

Without Clamps—With Supporting Ears

Black Enameled or Galvanized

For  $\frac{1}{2}$ -Inch Rigid Conduit (Heavy Wall)

No. 111



No. 222

No. 333  
No. 333-D

Knockouts: ends, one  $\frac{1}{2}$ -inch; sides, two  $\frac{1}{2}$ -inch; bottom, one  $\frac{1}{2}$ -inch.

No.	Length	Width	Depth	Std. Pkg.	Wt. Lb. per 100
111	3	2	2	100	60
222	3	2	$2\frac{1}{2}$	100	70
333	3	2	$2\frac{3}{4}$	100	77
333-D	3	2	$3\frac{1}{2}$	50	91

## No. 1490 Appleton Switch Box Extensions

Schedule SB

Black Enamel or Galvanized



Designed to fit snugly inside the box and allow ample room for switch and wiring. Screws furnished are 1-inch long. Fits all single-gang switch boxes. Depth,  $\frac{7}{8}$ -inch. Standard package, 100. Weight per 100, 15 pounds.



## Appleton Sectional Switch Boxes

Schedule SB

With Lath Support and Mounting Bracket  
Black Enameled or Galvanized

No. 111-B. Knockouts, one in each end and two in each side for  $\frac{1}{2}$ -inch conduit. Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.

Nos. 222-B and 333-B. Knockouts, two in each side, one in each end for  $\frac{1}{2}$ -inch conduit. Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.



No.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lb. per 100
	Length	Width	Depth		
111-B	3	2	2	50	78
222-B	3	2	2 $\frac{1}{2}$	50	88
333-B	3	2	2 $\frac{3}{4}$	50	94

## Appleton Solid Switch Boxes

Schedule BC

With Mounting Bracket—Without Lath Support  
Black Enameled or Galvanized

Without Clamps

For  $\frac{1}{2}$ -Inch Rigid Conduit (Heavy Wall)

No. 111-NL. Has knockouts in each end and two in each side for  $\frac{1}{2}$ -inch conduit. Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in center of bottom.

Nos. 222-NL and 333-NL. Have two knockouts in each side, one in each end for  $\frac{1}{2}$ -inch conduit. Also  $\frac{1}{2}$ -inch knockout and fixture stem holes in bottom.

No.	Type Box	DIMENSIONS, INCHES			Std. Pkg.	Wt. per 100
		Length	Width	Depth		
111-NL	111	3	2	2	50	78
222-NL	222	3	2	2 $\frac{1}{2}$	50	88
333-NL	333	3	2	2 $\frac{3}{4}$	50	94

## Appleton VB Bracket Switch Boxes

Schedule SB

Without Lath Support

Black Enameled—Galvanized

For  $\frac{1}{2}$ -Inch Rigid Conduit (Heavy Wall)

All  $\frac{1}{2}$ -inch knockouts are for  $\frac{1}{2}$ -inch conduit. One  $\frac{1}{2}$ -inch in ends, two  $\frac{1}{2}$ -inch in sides and one  $\frac{1}{2}$ -inch in bottom.

No clamps furnished with these boxes.



No.	Type of Box Used	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lb. per 100
		Length	Width	Depth		
111-VB	111	3	2	2	100	78
222-VB	222	3	2	2 $\frac{1}{2}$	100	88
333-VB	333	3	2	2 $\frac{3}{4}$	100	94

## Appleton Door Switch Boxes

Schedule SB

Black Enameled or Galvanized

For Rigid and Flexible Conduit

Made in accordance with specifications recommended by the Underwriters' Laboratories, Inc.

No. 7010, Without Clamps

For Perkins door switches. Knockouts, one  $\frac{5}{8}$ -inch in one end and bottom for flexible non-metallic sheathed cable with Type T or 1947 Code rubber insulation; one  $\frac{1}{2}$ -inch in opposite end for rigid conduit.

No. 7011, With Clamps

Same as above but with  $\frac{3}{4}$ -inch knockout for flexible steel conduit and furnished with clamp.

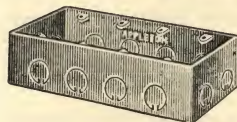
No.	DIMENSIONS, INCHES			Screw Ctr. In.	Std. Pkg.	Wt. Lb. per 100
	Length	Width	Depth			
7010	3 $\frac{3}{8}$	1 $\frac{1}{4}$	2 $\frac{5}{8}$	3 $\frac{3}{4}$	5	79
7011	3 $\frac{3}{8}$	1 $\frac{1}{4}$	2 $\frac{5}{8}$	3 $\frac{3}{4}$	5	79

## Appleton Solid Gang Switch Boxes

Schedule SB

Galvanized Finish Only

With Square Corners—For Rigid Conduit



Solid; boxes ears permit mounting any standard push button or rectangular base switch and also receptacles. Used for concealed work, but can be furnished for open work and flush covers.

K.O. In.	Std. Pkg.	2-Gang		3-Gang		4-Gang		5-Gang		6-Gang	
		Depth, 2 $\frac{1}{4}$ In. No.	Wt., Lb. per 100	Depth, 2 $\frac{1}{2}$ In. No.	Wt., Lb. per 100	Depth, 2 $\frac{1}{2}$ In. No.	Wt., Lb. per 100	Depth, 2 $\frac{1}{2}$ In. No.	Wt., Lb. per 100	Depth, 2 $\frac{1}{2}$ In. No.	Wt., Lb. per 100
$\frac{1}{2}$	20	19010	130	19011	140	19015	175	19016	185	19020	205
$\frac{3}{4}$	20	19025	130	19026	140	19030	175	19031	185	19035	205
$\frac{1}{2}$	10	19015	175	19016	185	19020	205	19021	235	19070	195
$\frac{3}{4}$	10	19030	175	19031	185	19035	205	19036	235	19075	195
$\frac{1}{2}$	5	19020	205	19021	235	19025	235	19080	215	19071	340
$\frac{3}{4}$	5	19035	205	19036	235	19075	195	19085	215	19076	340
$\frac{1}{2}$	1	19070	195	19080	215	19071	340	19081	350		
$\frac{3}{4}$	1	19075	195	19085	215	19076	340	19086	350		

## Appleton Solid Gang Switch Box Covers

Schedule SB

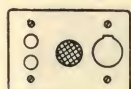
Galvanized Finish Only—2, 3, 4, 5 and 6-Gang

Furnished with fastening screws.

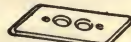
Combination Covers

In ordering describe the combinations by giving the Nos. of the component covers from left to right in order of arrangement desired. Example: An order for 50 three-gang covers for flush mounting, for push button switch, pilot lamp and round flush receptacle, arranged from left to right in order given, should read: 50 flush covers, combination FRK, for three-gang solid switch box.

The price of any combination cover is the sum of the prices of the component covers listed plus a flat charge per gang.



No. F

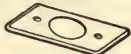


No. PS3

For double push button switches.

For P & S-Despard, Bryant IL, and Hubbell Interchangeable Line (for 2 or 3 devices).

No. J

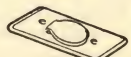


No. Q

For round flush receptacles, (without lift cover).

For sign receptacles with removable ring (1 $\frac{1}{2}$ -inch hole).

No. K



No. R

For round flush receptacles, (with lift cover).

For pilot lamp receptacle, with ruby jewel.

No. O

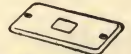


No. S

For standard duplex flush receptacles.

For Arrow, Bryant, Connecticut and G-E Tumbler and toggle switches.

No. PS1



No. X

For P & S-Despard, Bryant IL, and Hubbell Interchangeable Line (for 1 device).

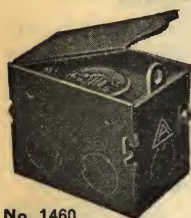
Blank metal.



## Appleton Laundry Fittings

Schedule SB

Black Enamel or Galvanized  
With Single or Duplex Receptacles



No. 1460

These fittings are furnished in single gang, in sectional style which permits removing sides, and they can be built into any number of gangs necessary.

Each section is provided with a hinged door and lugs which will permit of using an ordinary small padlock. Padlock is not furnished.

No.	DIMENSIONS, INCHES			Size K.O. Inches	Std. Pkg.	Wt. Lb. per 100
	Length	Width	Depth			
1460	3	2	2 3/4	1/2	20	120
Duplex Receptacle						
1462	3	2	2 3/4	1/2	20	144

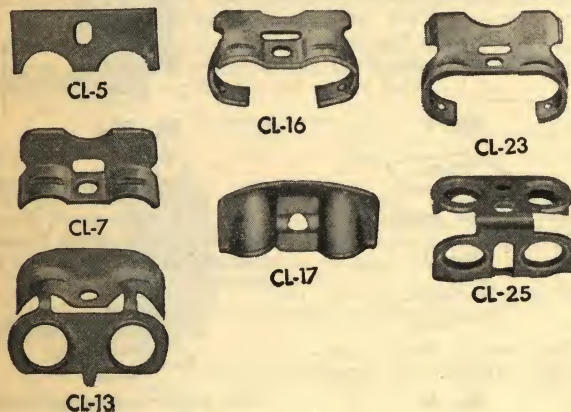
## Appleton Clamps

Schedule SB

## For Switch Boxes

For Metallic Sheathed Cable with Type T or 1947 Code Rubber Insulation and Non-Metallic Flexible Tubing, also For Flexible Steel Conduit and Armored Cable with 1940 Code Rubber Insulation, Type T Insulation, and 1947 Code Rubber Insulation

Illustrated below are the various types of the Appleton Cable Clamps as used in Appleton Switch Boxes. Along with the listing of all boxes having clamps, we specify the number of the clamp furnished. These clamp numbers correspond with those listed below and illustrate more clearly the clamps furnished with each box.

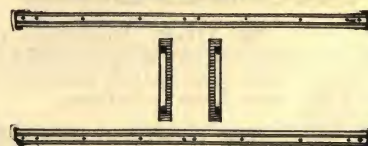


Box No.	Clamp No.	Box No.	Clamp No.	Box No.	Clamp No.
44	CL-5	171-FNL	CL-13	385-VB	CL-23
44-AE	CL-5	171-FVB	CL-13	386	CL-23
44-B	CL-5	173-F	CL-13	386-B	CL-23
44-NL	CL-5	173-FB	CL-13	386-NL	CL-23
44-VB	CL-5	173-FEE	CL-13	386-VB	CL-23
83	CL-25	173-FES	CL-13	387	CL-16
83-B	CL-25	173-FESW	CL-13	387-AE	CL-16
95	CL-7	173-FEX	CL-13	387-B	CL-16
171-F	CL-13	173-FNL	CL-13	387-NL	CL-16
171-FB	CL-13	173-FVB	CL-13	387-VB	CL-16
171-FEE	CL-13	385	CL-23	388	CL-17
171-FES	CL-13	385-B	CL-23	388-B	CL-17
171-FEX	CL-13	385-NL	CL-23	.....	.....

## Appleton Switch Box Supports

Schedule SB

## Kruse Type

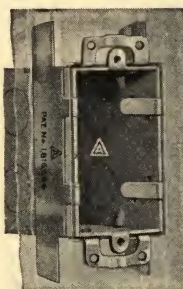


Used for new work on any standard switch box.

No.	Description	Std. Wt. Lb. Pkg. per 100
897	Two 16 1/2-Inch Strips and Lath Support	*500 40
898	Two 18 1/2-Inch Strips and Lath Support	*500 50

\*Sets.

## No. 896 E-Z-IN Type



The E-Z-In switch box support solves the problem of mounting switch boxes to beaverboard, sheet-rock, metal lath, etc. Suitable for old house wiring using lath and plaster, and will take standard switch boxes of any number of gangs.

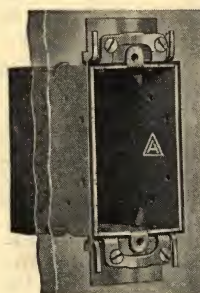
After cutting an opening in the wall just large enough to admit switch box, insert E-Z-In switch box support, one on each side of opening for switch box, and bend over the two projections against the wall on the outside which serve to fasten the switch box support temporarily until the box is inserted.

The box can then be inserted in wall in the usual manner, making sure to press ears of box firmly against the wall then while still pressing against box, bend over the two projections of the switch box supports down over the sides into the box, securely anchoring the box in wall constructed of any material. It is unnecessary to countersink the ears of the box and no screws are required. The switch or receptacle plate will lie flat on the surface of walls.

Standard package, 1000.

Weight per 1000, 43 1/2 pounds.

## No. 895 Switch Box Clips



Designed to hold the switch box firmly in place in wallboard.

Illustration shows the switch box clip back of the wallboard, and held in place by bending over the prongs after which the screws are placed through the ends of the ears and the switch box is fastened through the

wall board into the clip.

Cadmium finish only.

Standard package, 1000.

Weight per 1000, 23 pounds.



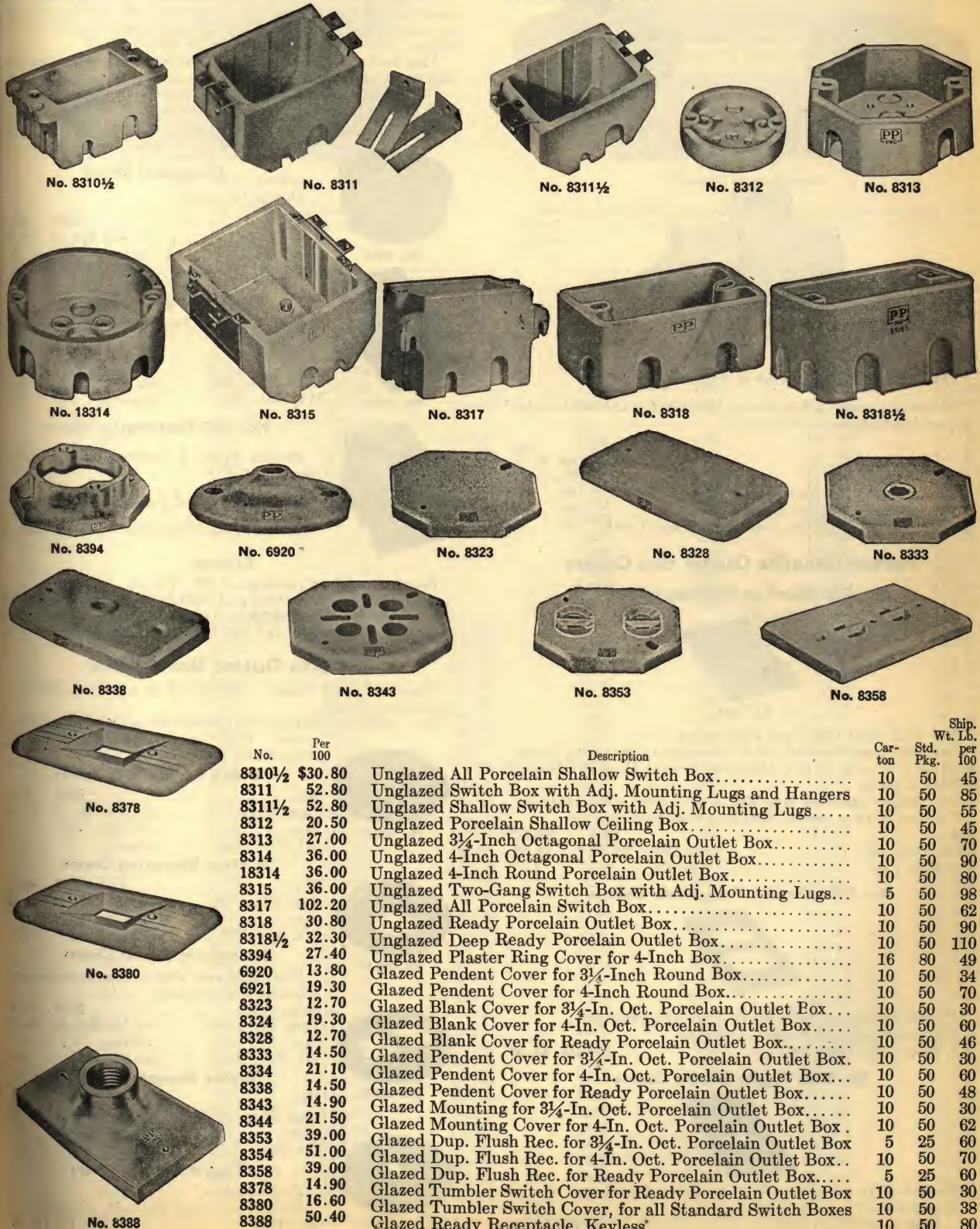
## All-Porcelain Outlet Boxes, Covers and Receptacles

Listed by Underwriters' Laboratories, Inc.

Designed to receive standard wiring devices. Standard tapped inserts, knockouts, and spacing.

Provide a completely insulated wiring system when used with standard concealed knob and tube wiring, open cleat wiring or non-metallic sheathed cable, eliminating all live metallic exposures.

Ease of installation and economy are effected through elimination of grounding, clamps, and connectors. Grounding is not required since the porcelain box is an insulator, and the Code permits dispensing with clamps and connectors when the approaching conductors are supported within 6 inches of the box.



No.	Per 100	Description	Carton	Std. Pkg.	Shp. Wt. Lb.	per 100
8310½	\$30.80	Unglazed All Porcelain Shallow Switch Box.....	10	50	45	
8311	52.80	Unglazed Switch Box with Adj. Mounting Lugs and Hangers	10	50	85	
8311½	52.80	Unglazed Shallow Switch Box with Adj. Mounting Lugs.....	10	50	55	
8312	20.50	Unglazed Porcelain Shallow Ceiling Box.....	10	50	45	
8313	27.00	Unglazed ¾-Inch Octagonal Porcelain Outlet Box.....	10	50	70	
8314	36.00	Unglazed 4-Inch Octagonal Porcelain Outlet Box.....	10	50	90	
18314	36.00	Unglazed 4-Inch Round Porcelain Outlet Box.....	10	50	80	
8315	36.00	Unglazed Two-Gang Switch Box with Adj. Mounting Lugs...	5	50	98	
8317	102.20	Unglazed All Porcelain Switch Box.....	10	50	62	
8318	30.80	Unglazed Ready Porcelain Outlet Box.....	10	50	90	
8318½	32.30	Unglazed Deep Ready Porcelain Outlet Box.....	10	50	110	
8394	27.40	Unglazed Plaster Ring Cover for 4-Inch Box.....	16	80	49	
6920	13.80	Glazed Pendant Cover for ¾-Inch Round Box.....	10	50	34	
6921	19.30	Glazed Pendant Cover for 4-Inch Round Box.....	10	50	70	
8323	12.70	Glazed Blank Cover for ¾-In. Oct. Porcelain Outlet Box...	10	50	30	
8324	19.30	Glazed Blank Cover for 4-In. Oct. Porcelain Outlet Box.....	10	50	60	
8328	12.70	Glazed Blank Cover for Ready Porcelain Outlet Box.....	10	50	46	
8333	14.50	Glazed Pendant Cover for ¾-In. Oct. Porcelain Outlet Box...	10	50	30	
8334	21.10	Glazed Pendant Cover for 4-In. Oct. Porcelain Outlet Box...	10	50	60	
8338	14.50	Glazed Pendant Cover for Ready Porcelain Outlet Box.....	10	50	48	
8343	14.90	Glazed Mounting for ¾-In. Oct. Porcelain Outlet Box.....	10	50	30	
8344	21.50	Glazed Mounting Cover for 4-In. Oct. Porcelain Outlet Box...	10	50	62	
8353	39.00	Glazed Dup. Flush Rec. for ¾-In. Oct. Porcelain Outlet Box	5	25	60	
8354	51.00	Glazed Dup. Flush Rec. for 4-In. Oct. Porcelain Outlet Box..	10	50	70	
8358	39.00	Glazed Dup. Flush Rec. for Ready Porcelain Outlet Box.....	5	25	60	
8378	14.90	Glazed Tumbler Switch Cover for Ready Porcelain Outlet Box	10	50	30	
8380	16.60	Glazed Tumbler Switch Cover, for all Standard Switch Boxes	10	50	38	
8388	50.40	Glazed Ready Receptacle, Keyless.....	10	50	80	



## All Porcelain Oversize Receptacles and Covers

### For Outlet Boxes



No. 6922



No. 8680



No. 8793-C

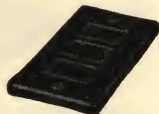
Have an overall diameter of  $4\frac{1}{2}$  inches.

Mounting screw holes slotted, permitting use with either  $3\frac{1}{2}$  or 4 inch boxes.

No.	Per 100	Description	Std. Pkg.	Wt. Lb.	Ship. per 100
6922	\$20.70	Pendent Cover.....	50	58	
8680	50.40	Keyless Receptacle.....	50	85	
8793-C	95.46	Pull Rec. with Chain and Cord..	50	96	

## Parker Bakelite Outlet Box Covers

### No. 5051 Blank or Knockout Covers



No. 5051

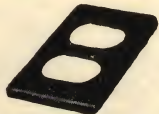
For Nos. 5050, 6050, and 7050 boxes.

No. 5051 may be used either as blank or by using knockouts for 1, 2, or 3. P. & S. Despard, Bryant IL or Hubbell LS wiring devices.

No. 5051-S same as No. 5051 with metal strap included. Packed 10 in a carton, 100 in a standard package.

No.	Per 100	Description	Std. Pkg.	Wt. Lb.	Ship. per 100
No. 5051			50	58	
Less Than 100.....	per 100		\$8.59	19.93	
Wt. Std. Pkg.....	pounds		6	13	

### No. 5053 Duplex Receptacle Covers



Packed 10 in a carton, 100 in a standard package.

Standard package weight, 6 pounds.

No. 5053 (Less Than 100).....	per 100	\$8.59
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### No. 5055 Toggle Switch Covers



Packed 10 in a carton, 100 in a standard package.

Standard package weight, 6 pounds.

No. 5055 (Less Than 100).....	per 100	\$8.59
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## Parker Bakelite Outlet Boxes

Especially designed for use with open non-metallic sheathed and CNX Type cable wiring and in all places where corrosive fumes are present. They resist corrosion from Ammonia fumes in cattle barns, acid fumes in Chemical or Industrial Plants; also any place where salt or moist air is present.

Bakelite boxes require no grounding. The sizes and design, except for clamps and wire knockouts, same as standard metal outlet boxes. They take standard types of fixture studs. Two clamps supplied with each box.

May be had without clamps or outlet boxes, if so specified, can be furnished with either three or four clamps.

Boxes have side knockouts and clamps to take 14-2, 14-3, and 12-2 non-metallic sheathed cable, and 14-2, 14-3, 12-2, and 12-3 CNX Type Cable and one  $\frac{1}{2}$  inch bottom knockout. Packed 100 in standard package.



No. 4050



No. 5050



### Octagonal Boxes

Depth  $1\frac{1}{2}$  inches.

No.....	3050	4050
Less Than 100.....	per 100 \$18.56	23.62
Size Box.....	inches $3\frac{1}{4}$	4
Wt. Std. Pkg.....	pounds 22	26

### Rectangular Boxes

Switch type. Depth  $2\frac{1}{2}$  inches, length  $4\frac{1}{16}$  inches.

No.....	5050	6050
Less Than 100.....	per 100 \$23.62	26.33
Wt. Std. Pkg.....	pounds 30	33

### No. 7050 Rectangular Boxes

Switch type, 3 inches long, 2 inches deep.

Weight standard package, 26 pounds.

No. 7050 (Less Than 100)....	per 100	\$22.99
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### Clamps

Packed standard package of 100. Weight, 4 pounds.

No. 34, For Nos. 3050, 4050 and 7050-S Boxes..	per 100	\$3.17
No. 35, For Nos. 5050, 6050, and 6051B Boxes..	per 100	3.38
No. 36, For Nos. 7050, and 7051B Boxes.....	per 100	3.51

## Bakelite Outlet Box Covers

Standard color black. Packed 10 in a carton, 100 in a standard package.

Nos. 3051 and 4051 may be used either as pendant or blank cover. Each has a knockout to convert from blank to pendant.

### Blank or Pendant Covers

No.....	3051	4051
Less Than 100.....	per 100 \$9.33	13.60
Size.....	inches $3\frac{1}{4}$	4
Wt. Std. Pkg.....	pounds 7	13

### Surface Mounting Covers

No.....	3052	4052
Less Than 100.....	per 100 \$9.58	13.86
Size.....	inches $3\frac{1}{4}$	4
Wt. Std. Pkg.....	pounds 7	13

### Receptacle Socket Covers

Nos. 3054 and 4054 are for mounting receptacle type sockets.

No.....	3054	4054
Less Than 100.....	per 100 \$10.66	15.10
Size.....	inches $3\frac{1}{4}$	4
Wt. Std. Pkg.....	pounds 7	13

### Duplex Receptacle Covers

No.....	3053	4053
Less Than 100.....	per 100 \$10.66	15.10
Size.....	inches $3\frac{1}{4}$	4
Wt. Std. Pkg.....	pounds 7	13

### Toggle Switch Covers

Size 4 inches.

Weight standard package, 13 pounds.

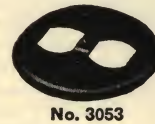
No. 4055.....	per 100	\$13.86
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No. 3051



No. 3054



No. 3053



No. 4055

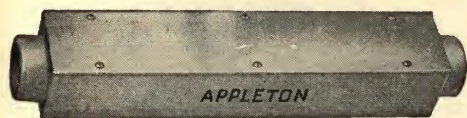


## Appleton Pull Boxes

Schedule OB

Cadmium Finish

For Pulling A Number of Heavy Wires or Cables—With Blank Covers



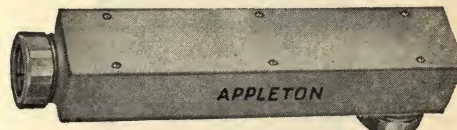
Type PTC Threaded



Type PTC No-Thread



Type PTB Threaded



Type PTB No-Thread

Made from sheet steel and including blank steel cover.  
Hubs are malleable iron and brazed into steel body.

Can be furnished in special types to meet varying conditions. Give specifications and sketch in applying for prices.

*Lgth. In.	†1-Inch Size				†1¼-Inch Size			
	Threaded		No-Thread		Threaded		No-Thread	
	Type PTC No.	Type PTB No.	Type PTC No.	Type PTB No.	Type PTC No.	Type PTB No.	Type PTC No.	Type PTB No.
12	1200	1250	12N00	12N50	1201	1251	12N01	12N51
18	1210	1260	12N10	12N60	1211	1261	12N11	12N61
24	1220	1270	12N20	12N70	1221	1271	12N21	12N71
30	1230	1280	12N30	12N80	1231	1281	12N31	12N81
36	1240	1290	12N40	12N90	1241	1291	12N41	12N91
	†½-Inch Size				2-Inch Size			
12	1202	1252	12N02	12N52	1203	1253	12N03	12N53
18	1212	1262	12N12	12N62	1213	1263	12N13	12N63
24	1222	1272	12N22	12N72	1223	1273	12N23	12N73
30	1232	1282	12N32	12N82	1233	1283	12N33	12N83
36	1242	1292	12N42	12N92	1243	1293	12N43	12N93
42	....	....	....	....	1800	1850	18N00	18N50
48	....	....	....	....	1810	1860	18N10	18N60
54	....	....	....	....	1820	1870	18N20	18N70
60	....	....	....	....	1830	1880	18N30	18N80
66	....	....	....	....	1840	1890	18N40	18N90
72	....	....	....	....	1550	1540	15N10	15N40
	2½-Inch Size				3-Inch Size			
12	1204	1254	12N04	12N54	1205	1255	12N05	12N55
18	1214	1264	12N14	12N64	1215	1265	12N15	12N65
24	1224	1274	12N24	12N74	1225	1275	12N25	12N75
30	1234	1284	12N34	12N84	1235	1285	12N35	12N85
36	1244	1294	12N44	12N94	1245	1295	12N45	12N95
42	1801	1851	18N01	18N51	1802	1852	18N02	18N52
48	1811	1861	18N11	18N61	1812	1862	18N12	18N62
54	1821	1871	18N21	18N71	1822	1872	18N22	18N72
60	1831	1881	18N31	18N81	1832	1882	18N32	18N82
66	1841	1891	18N41	18N91	1842	1892	18N42	18N92
72	1551	1541	15N11	15N41	1552	1542	15N12	15N42
	3½-Inch Size				4-Inch Size			
12	1206	1256	12N06	12N56	1207	1257	12N07	12N57
18	1216	1266	12N16	12N66	1217	1267	12N17	12N67
24	1226	1276	12N26	12N76	1227	1277	12N27	12N77
30	1236	1286	12N36	12N86	1237	1287	12N37	12N87
36	1246	1296	12N46	12N96	1247	1297	12N47	12N97
42	1803	1853	18N03	18N53	1804	1854	18N04	18N54
48	1813	1863	18N13	18N63	1814	1864	18N14	18N64
54	1823	1873	18N23	18N73	1824	1874	18N24	18N74
60	1833	1883	18N33	18N83	1834	1884	18N34	18N84
66	1843	1893	18N43	18N93	1844	1894	18N44	18N94
72	1553	1543	15N13	15N43	1554	1544	15N14	15N44
	5-Inch Size				6-Inch Size			
12	1208	1258	12N08	12N58	1209	1259	12N09	12N59
18	1218	1268	12N18	12N68	1219	1269	12N19	12N69
24	1228	1278	12N28	12N78	1229	1279	12N29	12N79
30	1238	1288	12N38	12N88	1239	1289	12N39	12N89
36	1248	1298	12N48	12N98	1249	1299	12N49	12N99
42	1805	1855	18N05	18N55	1806	1856	18N06	18N56
48	1815	1865	18N15	18N65	1816	1866	18N16	18N66
54	1825	1875	18N25	18N75	1826	1876	18N26	18N76
60	1835	1885	18N35	18N85	1836	1886	18N36	18N86
66	1845	1895	18N45	18N95	1846	1896	18N46	18N96
72	1555	1545	15N15	15N45	1556	1546	15N16	15N46

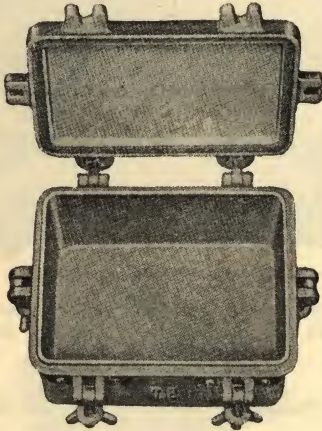
\*Dimensions give length of body only, not including hubs.

†Not made in lengths longer than 36 inches.



### T&B Weatherproof Cast Iron Junction Boxes

Approved by Underwriters' Laboratories



For enduring, weatherproof service.

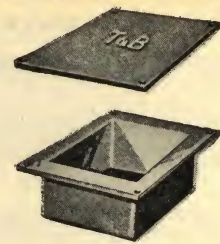
Cover has a deep recess in which square packing is secured.

Strong bronze hinges on one long side and an adequate number of big, easy turning bronze thumb nuts on the other three sides make a perfect watertight job when the cover is tightened.

Made of medium fine grain cast iron with hot dip galvanized finish.

### T&B Cast Iron Junction Boxes and Covers

Approved by Underwriters' Laboratories  
Flanged or Flush Type



Hot dip galvanized finish.

Drilling and tapping at extra cost.

No.	Each	Size, INCHES			Approx. Wall Thickness Inches	WEIGHT, POUNDS	
		Length	Width	Depth		Cover	Box
10500	\$12.00	6	4	4	1/8	2.0	5.0
10501	12.80	6	4 1/2	3	1/8	2.5	5.0
10502	15.60	6	6	4	5/32	3.0	10.0
10503	16.00	8	6	4	5/32	4.0	15.0
10504	17.60	8	6	6 3/4	5/32	4.0	12.3
10505	17.20	12	6	3	3/16	5.5	10.2
10545	19.00	12	6	6	3/16	5.5	13.0
10506	22.00	18	6	6 3/4	3/16	8.3	16.0
10507	15.00	9	7	3	3/16	5.0	8.0
10508	31.00	17	7	4	3/16	12.0	22.0
10509	16.00	8	8	4	3/16	5.0	9.0
10510	16.40	8	8	5	3/16	5.0	10.3
10511	18.00	8	8	6	3/16	4.5	10.3
10512	20.00	10	8	4	3/16	4.0	16.0
10538	24.00	12	8	6	1/4	8.0	20.0
10513	30.00	14	8	5	3/16	12.0	21.0
10514	40.00	18	8	6	1/4	11.0	27.0
10534	76.00	27	9	4 1/2	1/4	32.0	60.0
10515	21.00	10	10	4	1/4	8.2	13.2
10516	24.00	10	10	6	1/4	8.0	16.2
10517	22.40	12	10	4	1/4	10.0	14.0
10518	24.40	12	10	5	1/4	7.0	19.0
10519	34.00	14	10	6	1/4	10.0	24.0
10543	35.00	16	10	5	1/4	11.0	26.0
10520	36.00	18	10	4	5/16	13.0	23.0
10521	76.00	22	11	6	5/16	14.5	35.0
10522	28.00	12	12	4	1/4	10.0	16.0
10539	32.00	12	12	6	5/16	12.0	23.0
10523	36.00	16	12	4	1/4	15.0	27.0
10524	42.00	16	12	6	5/16	15.0	40.0
10535	72.00	16	12	8	5/16	20.0	70.0
10536	128.00	22	12	6	5/16	35.0	150.0
10537	130.00	23	13	10	3/8	40.0	110.0
10525	96.00	24	12	7	3/8	29.0	70.0
10526	65.00	19	14	4	3/8	31.0	50.2
10527	64.00	20	16	6	3/8	26.0	64.0
10532	104.00	20	17 1/2	8	3/8	45.0	120.0
10533	136.00	27 1/2	17 1/2	8	3/8	58.0	155.0
10528	72.00	18	18	6	3/8	29.0	73.0
10547	80.00	18	18	8	3/8	29.0	85.0
10529	88.00	18	18	10	3/8	32.0	100.0
10530	80.00	24	18	6	3/8	42.0	83.0
10531	144.00	36	18	8	3/8	70.0	173.0

No.	Box Only Each	Box and Cover Each	Gasket Only Each	Width	Size, INCHES Length	Depth	Approx. Wall Thickness Inches	Approx. Weight Pounds Complete
10750	\$1.70	\$2.20	\$.30	3	5 1/4	2	1/8	4.4
10751	1.90	2.50	.30	3	6	2	1/8	5.5
10752	1.10	1.50	.20	3 1/4	3 1/4	1 1/2	1/8	2.4
10753	1.30	1.70	.20	3 1/2	3 1/2	1 1/2	1/8	2.7
10754	1.70	2.20	.30	3 1/2	4 1/2	1 1/2	1/8	3.0
10755	1.80	2.30	.30	3 1/2	4 1/2	2	1/8	3.4
10895	1.40	2.00	.30	4	4	3	1/8	3.8
10756	2.00	2.60	.30	4	4	4	1/8	3.8
10914	2.80	3.60	.40	4	6	3	1/8	7.0
10899	3.60	4.80	.60	4	8	3	5/32	12.6
10757	3.80	5.40	.70	4	12	4	5/32	10.8
10896	2.40	3.10	.50	5	6	3	5/32	6.8
10897	2.50	3.70	.60	6	6	3	5/32	9.0
10898	3.40	4.70	.60	6	6	4	5/32	8.0
10915	3.80	5.10	.60	6	6	6	5/32	14.0
10900	4.60	6.00	.70	6	8	3	5/32	14.0
10902	4.30	5.70	.70	6	8	4	5/32	15.0
10916	5.00	6.40	.70	6	8	6	5/32	15.5
10758	4.60	6.20	.80	6	9	4	5/32	18.0
10630	5.70	7.75	.40	6	9	6	11/64	19.0
10759	7.20	9.00	.80	6	10	6	3/16	24.0
10906	6.80	8.80	1.00	6	12	3	5/32	20.0
10908	7.20	9.20	1.00	6	12	4	5/32	19.0
10910	10.80	12.80	1.00	6	12	6	3/16	24.0
10760	12.00	16.00	2.00	6	24	4	3/16	44.0
10901	6.00	8.00	.90	8	8	3	5/32	14.0
10903	6.20	8.20	.90	8	8	4	5/32	16.0
10904	7.30	9.30	.90	8	8	6	3/16	18.0
10763	7.80	9.80	.90	8	8	8	3/16	20.0
10891	9.00	10.00	1.00	8	10	8	3/16	23.0
10917	8.50	11.50	1.00	8	12	4	3/16	24.0
10764	10.00	13.00	1.00	8	12	6	3/16	28.0
10918	15.00	18.00	1.00	8	12	8	7/32	32.0
10631	12.40	16.00	1.00	8	15	6	3/16	38.0
10783	22.00	38.00	3.00	8	30	4	7/32	107.0
10636	10.90	16.80	.80	9	12	4	3/16	30.0
10632	11.00	17.00	.80	9	16	4	3/16	32.0
10784	12.00	18.00	2.00	9	16	5	7/32	50.0
10633	16.00	21.00	1.30	9	20	5	1/4	50.0
10766	20.00	30.00	2.40	9	24	4	1/4	60.0
10913	34.00	44.00	2.40	9	24	8	7/32	89.0
10767	36.00	54.00	3.00	9	28	8	7/32	114.0
10905	11.10	14.30	1.00	10	10	8	11/32	104.0
10768	24.00	32.00	2.20	10 1/4	16 1/4	12	3/8	74.0
10907	9.00	13.00	1.20	12	12	3	7/32	41.0
10909	9.00	13.00	1.20	12	12	4	3/8	45.0
10911	14.00	18.00	1.20	12	12	6	3/16	52.0
10749	16.40	20.40	1.20	12	12	8	3/16	75.0
10769	20.00	24.00	1.20	12	12	12	3/16	96.0
10770	10.00	14.60	1.30	12	16	4	7/32	42.0
10771	32.00	37.50	1.40	12	18	12	11/32	130.0
10785	34.00	42.00	3.00	12	24	12	7/32	113.0
10786	42.00	60.00	3.50	12	28	8	13/32	165.0
10634	62.00	85.00	3.00	12	36	5	3/8	142.0
10772	66.00	94.00	4.00	12	36	6	7/16	178.0
10912	20.00	26.20	1.50	14	18	6	13/32	80.0
10773	28.00	36.00	2.00	14	20	6	13/32	88.0
10774	34.00	46.00	3.00	14	24	7	5/16	119.0
10635	18.00	31.00	2.00	15	15	6	9/32	74.0
10775	17.00	26.00	2.00	15 1/2	15 1/2	5	5/16	77.0
10776	32.00	46.00	3.00	16	24	12	3/8	210.0

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## T&amp;B Cast Iron Junction Boxes and Covers

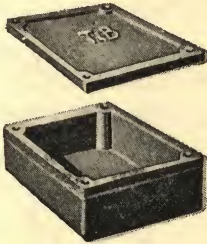
Approved by Underwriters' Laboratories

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## Flanged or Flush Type

No.	Box Only Each	Box and Cover Each	Gasket Only Each	SIZE, INCHES			Approx. Wall Thick. Inches	Approx. Weight Pounds Complete
				Width	Length	Depth		
10777	\$42.00	\$64.00	\$3.50	16	30	8	1 1/4	205
10778	31.00	44.00	3.00	18	18	8	1 5/32	140
10787	43.00	64.00	4.00	18	26	5	7/16	170
10799	50.00	74.00	3.80	18	30	8	1 13/32	235
10780	66.00	94.00	4.00	24	30	12	1 13/32	360
10788	67.00	88.00	4.00	25	26	9	7/16	270
10781	110.00	172.00	4.50	30	30	12	1 17/32	455
10782	180.00	290.00	6.00	30	48	12	1 1/2	910

## Unflanged or Surface Type



No.	Box Only Each	Box and Cover Each	Gasket Only Each	SIZE, INCHES			Approx. Wall Thick. Inches	Approx. Weight Pounds Complete
				Width	Length	Depth		
10864	\$1.30	\$1.75	\$.30	3	6	2	1/8	4.75
10857	1.45	1.90	.30	3	6	2 3/4	1/8	5.00
10860	1.00	1.30	.20	3 1/2	3 1/2	2	1/8	2.25
10600	1.40	2.20	.20	4	6	2 1/2	1/8	4.25
10861	.90	1.20	.20	4	4	2	1/8	2.50
10890	1.00	1.30	.20	4	4	2 1/2	1/8	4.00
10862	1.00	1.30	.20	4	4	3	1/8	3.50
10700	1.70	2.00	.20	4	4	4	1/8	5.00
10701	1.20	1.60	.30	4	5 1/2	1 1/2	1/8	4.50
10866	1.50	2.00	.30	4	6	2	1/8	5.50
10601	1.90	2.20	.20	4	6	3	1/8	6.00
10703	2.20	2.70	.30	4	6	4	1/8	7.75
10614	2.50	3.20	.50	4	8	4	1/8	10.00
10704	2.60	3.80	1.00	4	11	1 1/2	1/8	8.50
10877	3.25	4.50	1.00	4	12	4	1/8	11.00
10863	1.60	2.10	.40	5	5	3	1/8	6.00
10602	2.30	3.00	.40	5	5	4	5/32	7.00
10867	1.60	2.00	.50	5	6	3	1/8	6.00
10869	2.50	3.20	.60	5	7	3	5/32	8.00
10705	3.70	5.00	.80	5	10	2 1/2	5/32	12.00
10706	3.70	4.90	.70	5 1/4	8	3 1/4	5/32	11.00
10707	2.60	3.30	.50	5 1/2	5 1/2	3 1/2	5/32	9.00
10893	2.70	3.40	.50	5 1/2	5 1/2	5	5/32	14.00
10894	1.70	2.40	.50	6	6	2	1/8	6.50
10962	1.70	2.40	.50	6	6	3	5/32	7.50
10868	2.60	3.30	.50	6	6	4	5/32	8.50
10963	3.50	4.20	.50	6	6	5	5/32	12.50
10964	3.70	4.40	.50	6	6	6	5/32	14.50
10871	2.70	3.60	.60	6	8	3	5/32	10.50
10872	3.10	4.00	.60	6	8	4	5/32	10.50
10874	4.60	5.50	.60	6	8	6	5/32	15.50
10854	2.50	3.70	.80	6	9	3	5/32	3.00
10875	4.30	5.50	.80	6	9	4	5/32	16.00
10878	5.40	6.70	.90	6	10	4	5/32	15.00
10603	6.20	8.00	.90	6	10	6	1 1/16	22.00
10880	4.80	6.80	1.00	6	12	3	5/32	18.00
10968	4.70	6.70	1.00	6	12	4	5/32	21.00
10604	5.80	8.00	1.00	6	12	5	1 1/16	21.00
10882	8.00	10.00	1.00	6	12	6	3/16	27.00
10709	7.00	9.50	1.30	6	15 3/4	2	5/32	17.00
10885	9.00	12.00	2.00	6	18	3 1/2	3/16	18.50
10710	13.80	16.80	2.00	6	18	5	3/16	20.00
10711	15.00	18.00	2.00	6	18	6	3/16	25.00
10712	8.00	10.50	1.30	6 1/4	15	4	3/16	27.50
10870	2.80	3.60	.60	7	7	3	5/32	11.00

Continued

## T&amp;B Cast Iron Junction Boxes and Covers

Approved by Underwriters' Laboratories

Concluded

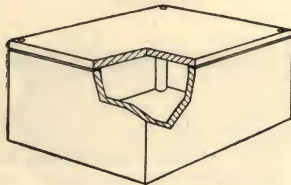
## Unflanged or Surface Type

No.	Box Only Each	Box and Cover Each	Gasket Only Each	SIZE, INCHES			Approx. Wall Thick. Inches	Approx. Weight Pounds Complete
				Width	Length	Depth		
10884	\$8.00	\$11.00	\$1.60	7	15	4 1/2	3/16	34.0
10713	15.00	19.00	2.00	7	17 1/2	4 3/4	3/16	39.0
10965	4.00	5.20	.80	8	8	3	5/32	13.0
10873	4.00	5.20	.80	8	8	4	5/32	13.5
10876	8.00	9.00	.75	8	8	6	3/16	20.0
10717	9.00	10.20	.80	8	8	8	3/16	23.0
10714	5.00	6.80	1.00	8	10	4	1 1/16	20.0
10855	6.20	8.00	1.00	8	10	6	3/16	15.5
10715	10.00	11.80	1.00	8	10	8	3/16	32.0
10605	16.00	18.50	1.00	8	10	12	1/4	43.0
10606	5.00	8.40	.60	8	12	4	3/16	20.0
10718	10.00	12.00	1.20	8	12	6	3/16	37.0
10719	7.00	9.50	1.40	8	14	3	1 1/16	33.0
10720	7.30	9.80	1.40	8	14	4	3/16	25.0
10721	10.00	13.50	1.50	8	18	4 1/2	3/16	32.0
10722	12.50	17.50	2.00	8	24	4 1/2	3/16	44.0
10723	16.00	23.00	2.80	8	30	4 1/2	1/4	58.0
10853	5.30	6.80	1.10	9	9	4	1 1/16	5.0
10724	8.00	9.50	1.10	9	9	7	3/16	17.0
10725	6.60	9.20	1.50	9	15	4	3/16	28.0
10889	5.20	6.80	1.20	10	10	4	3/16	14.0
10852	5.40	7.00	1.20	10	10	5	3/16	14.0
10726	7.40	9.00	1.20	10	10	6	3/16	17.0
10970	17.00	20.50	1.40	10	14	8	3/4	55.0
10727	14.50	18.50	1.80	10	16	6	1/4	51.0
10607	21.00	26.80	1.80	10	16	8	1/4	62.0
10728	7.00	10.00	1.60	12	12	3	3/16	27.0
10881	7.50	10.50	1.60	12	12	4	3/16	32.0
10969	9.60	12.60	1.60	12	12	6	7/32	39.0
10729	12.00	15.00	1.60	12	12	8	1/4	46.0
10972	12.40	15.50	1.00	12	16	4	7/32	36.0
10730	12.40	16.20	1.80	12	16	6	3/4	59.0
10731	15.40	19.20	1.80	12	16	8	3/16	61.0
10971	11.00	15.50	2.00	12	18	4	7/32	53.0
10886	18.00	22.50	2.00	12	18	5	1/4	60.0
10732	19.50	24.00	2.00	12	18	6	1/4	68.0
10747	21.00	25.00	2.00	12	18	8	3/8	80.0
10733	22.00	26.50	2.00	12	18	10	3/8	97.0
10879	24.00	28.50	2.00	12	18	12	3/8	105.0
10734	16.00	20.50	2.00	12	19	4	1/4	55.0
10735	22.00	27.00	2.50	12	20	5	1/4	62.0
10736	27.00	37.00	2.80	12	22	5	1/4	68.0
10737	30.00	40.50	3.00	12	24	6	1 1/32	82.0
10738	98.00	108.50	3.00	12	24	24	1 1/2	185.0
10883	24.00	31.00	3.00	14	14	10	3/8	107.0
10609	42.00	47.00	3.00	14	18	8	3/8	120.0
10739	25.00	35.00	3.00	14	19	6	5/16	95.0
10740	32.00	44.00	3.50	14	24	12	1 3/32	178.0
10887	31.00	44.00	3.80	16	24	8	7/16	139.0
10741	62.00	75.00	3.80	16	24	12	7/16	197.0
10851	102.00	120.00	5.00	16	48	8	1/2	250.0
10742	24.00	32.00	2.50	18	18	5	1 1/32	106.0
10743	21.00	29.00	2.50	18	18	6	3/8	117.0
10744	29.00	37.50	3.50	18	24	6	1 5/32	168.0
10745	40.00	48.50	3.50	18	24	8	7/16	196.0
10746	48.00	62.00	4.00	24	24	8	1 5/32	265.0
10610	115.00	145.00	5.00	24	24	12	1 1/2	320.0
10611	65.00	90.00	4.80	24	30	6	7/16	210.0
10888	37.00	52.00	4.50	24	28	3 1/2	1 3/32	225.0
10850	110.00	140.00	5.50	24	48	8	1 3/32	370.0
10849	118.00	130.00	5.50	30	36	8	1 7/32	385.0
10848	150.00	176.00	6.00	39	46	8	9/16	570.0

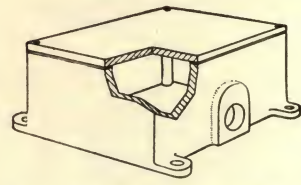


## O.Z. Type Y1200 Unflanged Junction or Pull Boxes

With Surface Covers



Standard Construction



With Boss and Mounting Lugs

Furnished with plain covers and standard rubber gaskets.

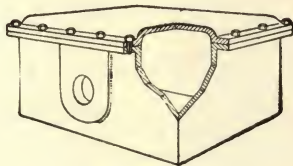
Standard finish, hot-dip galvanized.

Drilling and tapping, mounting lugs, bosses, iron or brass checkered covers available at additional cost.

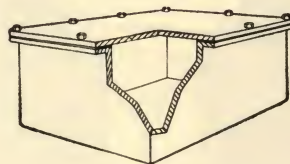
No.	Each	DIMENSIONS, INCHES			Approx. Wall Thick. Inches	Approx. Weight Pounds	No.	Each	DIMENSIONS, INCHES			Approx. Wall Thick. Inches	Approx. Weight Pounds
		Length	Width	Depth					Length	Width	Depth		
Y1201	\$1.40	4	x 4	x 1½	3/16	3.5	Y1290	\$28.40	14	x14	x 6	5/16	66.0
Y1202	1.00	4	x 2	x 2	3/16	2.5	Y1291	34.00	14	x14	x10	3/8	106.0
Y1203	1.40	4	x 4	x 2	3/16	4.0	Y1292	11.60	15	x 6	x 4	3/16	19.5
Y1205	1.50	4	x 4	x 3	3/16	4.5	Y1316	18.40	15	x 8	x 8	3/16	35.0
Y1206	2.20	4	x 4	x 4	3/16	5.5	Y1293	12.70	15	x 9	x 4	3/16	25.5
Y1204	2.60	4½x 4½	x 4		3/16	6.5	Y1234	17.60	15	x10	x 6	3/16	33.0
Y1262	4.80	4¾x 4¾	x 2½	5/16	3/16	9.0	Y1294	44.80	15	x12	x12	3/16	93.0
Y1207	2.50	5	x 5	x 3	3/16	6.5	Y1235	12.00	16	x 5	x 8	3/16	22.5
Y1208	2.40	6	x 4	x 3	3/16	6.0	Y1295	27.00	16	x12	x 8	3/16	44.0
Y1209	3.00	6	x 4	x 4	3/16	7.5	Y1296	25.60	16	x16	x 6	¼	65.0
Y1210	3.15	6	x 6	x 3	3/16	8.5	Y1236	18.65	18	x 6	x 6	¼	37.5
Y1211	3.80	6	x 6	x 4	3/16	9.5	Y1297	22.00	18	x 8	x 6	¼	44.0
Y1263	4.70	6	x 6	x 5	¼	14.5	Y1237	22.50	18	x12	x 4	¼	49.0
Y1212	4.90	6	x 6	x 6	¼	16.5	Y1238	25.00	18	x12	x 6	3/16	43.0
Y1213	3.50	7	x 5	x 3	3/16	8.0	Y1298	33.20	18	x12	x 8	¼	67.0
Y1214	3.50	8	x 4	x 3	3/16	8.0	Y1299	44.00	18	x12	x10	3/16	94.5
Y1215	3.70	8	x 4	x 4	3/16	9.0	Y1239	27.00	18	x14	x 6	3/16	48.0
Y1264	4.20	8	x 6	x 3	3/16	10.0	Y1301	50.00	18	x14	x 8	¼	73.0
Y1216	4.60	8	x 6	x 4	3/16	12.0	Y1302	63.50	18	x12	x12	3/16	106.0
Y1217	7.60	8	x 6	x 6	¼	20.5	Y1240	30.50	18	x16	x 6	3/16	53.0
Y1218	6.00	8	x 8	x 3	3/16	12.5	Y1241	43.50	18	x18	x 8	3/16	66.0
Y1219	6.40	8	x 8	x 4	3/16	14.5	Y1242	60.00	18	x18	x10	¼	100.0
Y1265	8.40	8	x 8	x 5	¼	22.5	Y1243	72.00	18	x18	x12	3/8	165.0
Y1220	9.60	8	x 8	x 6	¼	24.0	Y1303	93.50	18	x18	x15	3/8	187.0
Y1221	11.00	8	x 8	x 8	¼	29.0	Y1304	18.00	20	x 9	x 4½	3/16	34.0
Y1266	5.60	9	x 6	x 3	3/16	14.0	Y1244	24.00	20	x10	x 6	3/16	41.0
Y1268	6.30	9	x 6	x 4	3/16	16.0	Y1245	29.50	20	x12	x 6	¼	62.0
Y1270	6.80	10	x 5	x 4	¼	16.0	Y1246	63.50	20	x16	x 8	5/16	110.0
Y1222	7.60	10	x 6	x 4	¼	19.0	Y1247	38.00	20	x20	x 4	3/16	60.0
Y1271	8.40	10	x 6	x 5	¼	21.5	Y1248	54.60	20	x20	x 6	¼	91.0
Y1272	9.20	10	x 6	x 6	¼	23.0	Y1249	39.00	21	x18	x 6	3/16	65.0
Y1223	7.80	10	x 8	x 4	¼	17.0	Y1250	26.50	23½x 6¾	x 5¼	3/16	35.0	
Y1273	10.50	10	x 8	x 6	¼	28.0	Y1305	36.00	24	x 8	x 8	5/16	82.0
Y1274	12.80	10	x 8	x 8	¼	33.0	Y1251	26.00	24	x12	x 4½	3/16	49.0
Y1275	11.20	10¾x 9	x 6		¼	28.0	Y1252	43.50	24	x12	x 6	3/16	54.0
Y1276	8.20	10	x10	x 3	3/16	17.5	Y1306	91.00	24	x12	x12	7/16	182.0
Y1277	9.40	10	x10	x 4	¼	20.0	Y1307	86.50	24	x14	x12	3/8	173.0
Y1224	10.20	10	x10	x 6	¼	32.0	Y1253	53.50	24	x16	x 6	¼	89.0
Y1278	7.80	12	x 6	x 3	3/16	14.0	Y1254	47.80	24	x16	x 8	3/16	76.0
Y1225	8.50	12	x 6	x 4	3/16	16.0	Y1255	48.00	24	x18	x 6	3/16	73.0
Y1226	11.00	12	x 6	x 6	¼	27.0	Y1256	82.50	24	x18	x 8	3/8	165.0
Y1280	9.00	12	x 8	x 4	3/16	25.0	Y1308	84.50	24	x18	x12	5/16	169.0
Y1227	12.50	12	x 8	x 6	3/16	30.0	Y1309	140.00	24	x18	x16	3/8	239.0
Y1228	15.00	12	x 8	x 8	3/16	37.0	Y1310	70.00	24	x20	x 6	5/16	134.0
Y1281	11.50	12	x10	x 4	3/16	26.0	Y1311	74.50	24	x20	x 8	5/16	149.0
Y1282	12.10	12	x10	x 5	3/16	29.0	Y1312	116.50	24	x22	x12	3/8	233.0
Y1283	12.40	12	x10	x 6	3/16	31.0	Y1257	91.00	24	x24	x10	5/16	190.0
Y1286	11.60	12	x12	x 3	¼	32.0	Y1313	83.40	27	x21	x 4½	5/16	139.0
Y1229	12.10	12	x12	x 4	3/16	26.5	Y1267	70.80	28	x12	x 8	5/16	118.0
Y1230	14.20	12	x12	x 6	3/16	31.5	Y1269	106.80	28	x12	x12	3/8	178.0
Y1231	16.60	12	x12	x 8	3/16	42.0	Y1258	34.00	30	x 8	x 6	3/16	51.0
Y1232	22.00	12	x12	x10	3/16	43.0	Y1279	94.00	30	x12	x12	5/16	157.0
Y1287	38.40	12	x12	x12	3/8	96.5	Y1259	83.00	30	x18	x 8	¼	133.0
Y1315	56.00	12	x12	x15	3/8	112.0	Y1285	153.50	30	x18	x14	3/8	263.0
Y1233	11.20	14	x 8	x 4	3/16	25.0	Y1314	254.00	30	x24	x17	½	390.0
Y1288	14.40	14	x 8	x 6	¼	36.0	Y1260	147.50	34	x30	x 5¾	5/16	246.0
Y1289	21.90	14	x10	x 8	¼	48.0	Y1261	96.25	36	x18	x 8	¼	154.0



## O.Z. Type Y6000 Heavy Duty Cast Iron Junction or Pull Boxes



Box A



Box B

Used for surface or flush mounting depending upon requirements.

Flange and cover are the same thickness as the box. Steel cap screws are furnished, and, where style A is called for, the cap screws are installed on close centers.

**Box A** is designed for explosion-resisting-proof work, and has a raised cover which is machined to a close tolerance. Has boss to provide 5 full threads.

**Box B** is watertight and is provided with a rubber gasket.

Drilling and tapping, mounting lugs, and bosses available at additional cost.

When ordering specify letter A or B after catalog number.

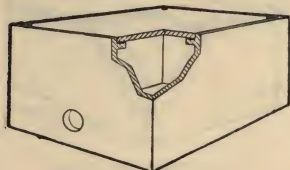
No.	Galv. Each	Black Each	DIMENSIONS, INCHES— Length Width Depth			Approx. Wall Thick. Inches	Approx. Weight Pounds	No.	Galv. Each	Black Each	DIMENSIONS, INCHES— Length Width Depth			Approx. Wall Thick. Inches	Approx. Weight Pounds	
Y6001	\$11.00	\$10.10	4x	4	x 3	$\frac{5}{16}$	13.5	Y6040	\$55.20	\$43.10	14	x14	x 8	$\frac{3}{16}$	122.0	
Y6002	11.45	10.35	4x	4	x 4	$\frac{5}{16}$	15.5	Y6041	58.10	45.00	14	x14	x10	$\frac{3}{16}$	135.0	
Y6003	12.10	10.93	5x	5	x 3	$\frac{5}{16}$	17.5	Y6042	104.25	97.30	15 $\frac{1}{2}$ x	12	x 9	$\frac{1}{2}$	139.0	
Y6004	13.08	11.33	5x	5	x 4	$\frac{5}{16}$	20.0	Y6043	48.80	38.33	16	x10	x 6	$\frac{3}{16}$	95.5	
Y6005	12.45	11.05	6x	4	x 3	$\frac{5}{16}$	17.5	Y6044	54.50	43.00	16	x12	x 6	$\frac{3}{16}$	106.0	
Y6006	13.95	12.23	6x	4	x 4	$\frac{5}{16}$	20.0	Y6045	65.94	50.57	16	x14	x10	$\frac{3}{16}$	148.0	
Y6007	14.10	12.55	6x	6	x 3	$\frac{5}{16}$	22.0	Y6046	38.92	31.80	18	x 6	x 6	$\frac{3}{16}$	78.0	
Y6008	15.23	13.00	6x	6	x 4	$\frac{5}{16}$	25.0	Y6047	55.67	43.60	18	x12	x 4	$\frac{3}{16}$	100.0	
Y6009	15.65	13.25	6x	6	x 5	$\frac{5}{16}$	28.5	Y6048	58.60	45.77	18	x12	x 6	$\frac{3}{16}$	116.0	
Y6010	16.30	13.62	6x	6	x 6	$\frac{5}{16}$	30.0	Y6049	61.35	47.64	18	x12	x 8	$\frac{3}{16}$	131.0	
Y6011	15.03	13.10	8x	4	x 3	$\frac{5}{16}$	19.5	Y6050	65.54	50.29	18	x12	x10	$\frac{3}{16}$	146.0	
Y6012	15.42	13.30	8x	4	x 4	$\frac{5}{16}$	17.5	Y6051	69.26	52.50	18	x12	x12	$\frac{3}{16}$	162.0	
Y6013	16.70	14.25	8x	6	x 3	$\frac{5}{16}$	26.0	Y6052	67.77	53.47	18	x18	x 4	$\frac{3}{16}$	135.0	
Y6014	17.95	15.05	8x	6	x 4	$\frac{5}{16}$	30.0	Y6053	72.94	56.99	18	x18	x 6	$\frac{3}{16}$	153.0	
Y6015	19.25	15.90	8x	6	x 6	$\frac{5}{16}$	29.0	Y6054	78.40	60.80	18	x18	x 8	$\frac{3}{16}$	171.0	
Y6016	18.95	16.00	8x	8	x 3	$\frac{5}{16}$	31.5	Y6055	87.97	67.57	18	x18	x12	$\frac{3}{16}$	207.0	
Y6017	20.20	16.80	8x	8	x 4	$\frac{5}{16}$	35.5	Y6056	58.97	47.24	19	x14	x 4	$\frac{3}{16}$	117.0	
Y6018	21.53	17.90	8x	8	x 6	$\frac{5}{16}$	43.0	Y6057	60.07	46.69	19	x14	x 6	$\frac{3}{16}$	134.0	
Y6019	25.20	20.25	8x	8	x 8	$\frac{5}{16}$	50.0	Y6058	73.60	57.10	19	x14	x10	$\frac{3}{16}$	167.0	
Y6020	21.25	15.75	10x	6	x 4	$\frac{5}{16}$	35.0	Y6059	79.07	61.14	19	x14	x12	$\frac{3}{16}$	183.0	
Y6021	23.70	17.93	10x	6	x 6	$\frac{3}{8}$	43.5	Y6060	63.00	51.00	20	x10	x 8	$\frac{3}{16}$	127.0	
Y6022	24.53	20.17	10x	8	x 4	$\frac{3}{8}$	43.0	Y6061	57.25	46.44	20	x12	x 4	$\frac{3}{16}$	109.0	
Y6023	24.26	21.43	10x	8	x 6	$\frac{3}{8}$	56.0	Y6062	62.60	50.47	20	x12	x 6	$\frac{3}{16}$	125.0	
Y6024	28.86	23.24	10x	8	x 8	$\frac{3}{8}$	58.0	Y6063	172.38	155.48	21 $\frac{1}{2}$ x	21 $\frac{1}{2}$ x	$\frac{5}{8}$	338.0		
Y6025	26.00	21.00	10x10	x 4		$\frac{3}{8}$	49.5	Y6064	75.00	62.00	24	x12	x 8	$\frac{3}{16}$	162.0	
Y6026	28.57	22.88	10x10	x 6		$\frac{3}{8}$	58.5	Y6065	88.10	70.74	24	x12	x10	$\frac{3}{16}$	181.0	
Y6027	24.50	20.12	12x	6	x 4	$\frac{3}{8}$	41.0	Y6066	92.95	73.85	24	x12	x12	$\frac{3}{16}$	199.0	
Y6028	27.10	21.90	12x	6	x 6	$\frac{3}{8}$	49.5	Y6067	85.92	69.24	24	x16	x 6	$\frac{3}{16}$	175.0	
Y6029	28.60	22.79	12x	8	x 6	$\frac{3}{8}$	58.0	Y6068	91.97	73.64	24	x16	x 8	$\frac{3}{16}$	195.0	
Y6030	32.20	25.40	12x	8	x 8	$\frac{3}{8}$	66.5	Y6069	83.17	67.04	24	x18	x 4	$\frac{3}{16}$	170.0	
Y6031	35.50	28.40	12x12	x 4		$\frac{3}{8}$	64.0	Y6070	89.50	71.25	24	x18	x 6	$\frac{3}{16}$	191.0	
Y6032	39.40	31.20	12x12	x 6		$\frac{3}{8}$	74.5	Y6071	95.49	75.50	24	x18	x 8	$\frac{3}{16}$	212.0	
Y6033	42.50	33.22	12x12	x 8		$\frac{3}{8}$	85.5	Y6072	105.97	82.14	24	x18	x12	$\frac{3}{16}$	253.0	
Y6034	47.48	36.65	12x12	x12		$\frac{3}{8}$	106.0	Y6073	111.00	88.09	24	x24	x 6	$\frac{3}{16}$	237.0	
Y6035	54.00	51.39	13x	8 $\frac{1}{2}$ x	7 $\frac{1}{2}$	$\frac{1}{2}$	90.0	Y6074	117.39	91.94	24	x24	x 8	$\frac{3}{16}$	261.0	
Y6036	32.46	27.10	14x	8	x 6	$\frac{3}{8}$	64.0	Y6079	210.00	198.00	29 $\frac{3}{8}$ x	18 $\frac{1}{4}$ x	10	$\frac{5}{8}$	400.0	
Y6037	39.10	31.50	14x	8	x 8	$\frac{3}{8}$	74.0	*Y6076	141.75	132.30	30	x	9 $\frac{3}{8}$ x	10	$\frac{1}{2}$	189.0
Y6038	48.20	38.50	14x14	x 4		$\frac{3}{16}$	93.0	*Y6077	196.00	173.60	36	x	9 $\frac{3}{8}$ x	10	$\frac{1}{2}$	248.0
Y6039	51.33	40.50	14x14	x 6		$\frac{3}{16}$	106.0	*Y6078	214.50	200.20	42	x	9 $\frac{3}{8}$ x	10	$\frac{1}{2}$	286.0

\*Cross-ribs in cover.



# O.Z. Type Y6200 Unflanged Recessed-Cover Boxes

For Flush or Surface Mounting and Use in Concrete Construction

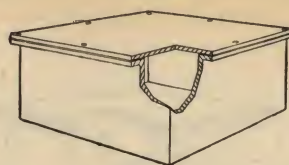


Furnished with plain covers and standard rubber gaskets.  
Standard finish, hot-dip galvanized.

Drilling and tapping, mounting lugs, bosses, iron or brass checkered covers, and cylinder locks and hasps are available at additional cost.

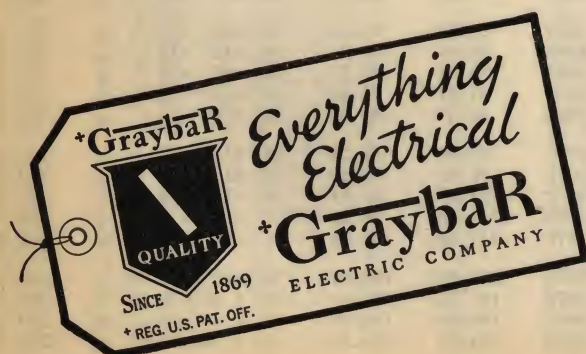
No.	Each	DIMENSIONS, INCHES Length Width Depth	Approx. Wall Thick. Inches	Approx. Weight Pounds
Y6201	\$3.50	4 x 4 x 2	1/4	4.0
Y6202	4.20	4 x 4 x 3	1/4	5.0
Y6203	4.90	4 x 4 x 4	1/4	6.5
Y6204	8.40	6 x 4 x 4	1/4	11.0
Y6205	9.15	6 x 6 x 4	1/4	16.5
Y6206	11.50	6 x 6 x 6	1/4	18.0
Y6207	9.80	8 x 4 x 4	1/4	13.5
Y6208	12.60	8 x 6 x 4	1/4	17.0
Y6209	14.20	8 x 6 x 6	1/4	21.5
Y6210	14.00	8 x 8 x 4	1/4	20.5
Y6211	17.00	8 x 8 x 6	1/4	26.0
Y6212	24.00	8 x 8 x 8	1/4	30.5
Y6213	14.70	10 x 6 x 4	1/4	20.0
Y6214	18.00	10 x 8 x 5	1/4	27.5
Y6215	24.30	10 x 8 x 6	1/4	30.0
Y6216	25.50	10 x 10 x 6	1/4	35.0
Y6217	24.50	12 x 6 x 6	1/4	29.0
Y6218	21.70	12 x 8 x 4	1/4	28.5
Y6219	28.00	12 x 8 x 6	1/4	34.5
Y6220	28.60	12 x 12 x 4	1/4	38.0
Y6221	32.00	12 x 12 x 6	1/4	45.5
Y6222	37.00	12 x 12 x 8	1/4	51.5
Y6223	40.00	14 x 14 x 4	1/4	48.0
Y6224	62.30	14 x 14 x 8	1/4	64.5
Y6225	29.30	16 x 6 x 4	1/4	30.0
Y6226	32.40	16 x 6 x 6	1/4	36.0
Y6227	32.40	16 x 8 x 4	1/4	36.0
Y6228	49.50	16 x 12 x 6	1/4	55.0
Y6229	53.10	16 x 16 x 4	1/4	59.0
Y6230	29.70	18 x 6 x 4	1/4	33.0
Y6231	38.00	18 x 8 x 8	1/4	54.0
Y6232	35.00	24 x 6 x 4	1/4	43.0
Y6233	39.00	24 x 6 x 6	1/4	51.0

# O.Z. Type Y8000 Flanged or Flush Boxes



Furnished with plain covers and standard rubber gaskets.  
Standard finish, hot-dip galvanized.  
Drilling and tapping, mounting lugs, bosses, and iron or brass checkered covers available at additional cost.

No.	Each	DIMENSIONS, INCHES Length Width Depth	Approx. Wall Thick. Inches	Approx. Weight Pounds
Y8001	\$2.30	4 x 4 x 3	3/16	5.5
Y8002	2.90	4 x 4 x 4	3/16	7.5
Y8003	4.00	6 x 4 x 3	3/16	8.5
Y8004	4.55	6 x 4 x 4	3/16	9.5
Y8005	4.75	6 x 6 x 3	3/16	11.0
Y8006	5.30	6 x 6 x 4	3/16	12.5
Y8007	6.00	6 x 6 x 6	3/16	15.0
Y8008	5.40	8 x 4 x 3	3/16	10.5
Y8009	6.10	8 x 4 x 4	3/16	12.0
Y8010	6.40	8 x 6 x 3	3/16	13.5
Y8011	6.70	8 x 6 x 4	3/16	15.0
Y8012	8.10	8 x 6 x 6	3/16	18.0
Y8013	8.90	8 x 8 x 3	3/16	16.0
Y8014	9.10	8 x 8 x 4	3/16	18.0
Y8015	10.20	8 x 8 x 6	3/16	20.5
Y8016	10.80	8 x 8 x 8	3/16	25.0
Y8017	8.95	10 x 6 x 4	3/16	17.5
Y8018	9.80	10 x 6 x 6	3/16	21.0
Y8019	10.80	10 x 10 x 4	3/16	24.0
Y8020	13.05	10 x 10 x 6	3/16	29.0
Y8021	7.00	12 x 4 x 4	3/16	16.0
Y8022	9.80	12 x 6 x 3	3/16	18.5
Y8023	10.20	12 x 6 x 4	3/16	20.0
Y8024	13.80	12 x 6 x 6	3/16	24.0
Y8025	12.50	12 x 8 x 4	3/16	23.5
Y8026	14.00	12 x 8 x 6	3/16	28.5
Y8027	19.00	12 x 8 x 8	3/16	32.5
Y8028	18.75	12 x 10 x 6	3/16	31.5
Y8029	18.75	12 x 12 x 4	3/16	31.5
Y8030	19.20	12 x 12 x 6	3/16	37.0
Y8031	21.60	12 x 12 x 8	3/16	42.0
Y8032	23.70	12 x 12 x 10	3/16	47.5
Y8033	33.10	12 x 12 x 12	3/8	107.0
Y8034	12.50	14 x 8 x 4	3/16	30.0
Y8035	14.90	14 x 8 x 6	3/16	31.5
Y8036	47.00	14 x 14 x 10	3/8	117.5
Y8037	19.00	15 x 10 x 6	3/16	38.0
Y8038	17.10	16 x 12 x 6	3/16	45.0
Y8039	19.50	16 x 12 x 8	3/16	50.5
Y8040	17.40	18 x 6 x 6	1/4	43.5
Y8041	25.20	18 x 12 x 4	1/4	56.5
Y8042	29.20	18 x 12 x 6	1/4	65.0
Y8043	36.50	18 x 12 x 8	1/4	73.5
Y8044	41.50	18 x 12 x 10	1/4	83.0
Y8045	45.50	18 x 12 x 12	1/4	91.0
Y8046	73.00	18 x 18 x 8	3/8	146.0
Y8047	81.00	18 x 18 x 10	3/8	162.5
Y8048	90.00	18 x 18 x 12	3/8	180.0
Y8049	146.00	18 x 18 x 15	3/8	252.0
Y8050	34.20	24 x 12 x 4 1/2	3/16	57.0
Y8051	43.40	24 x 12 x 6	3/16	62.0
Y8052	99.50	24 x 12 x 12	1/2	199.0
Y8053	50.40	24 x 16 x 8	3/16	84.0
Y8054	54.00	24 x 18 x 6	1/4	108.0
Y8055	91.50	24 x 18 x 8	3/8	183.0
Y8056	92.75	24 x 18 x 12	5/16	185.5
Y8057	127.20	24 x 18 x 16	5/16	212.0
Y8058	108.50	24 x 24 x 10	5/16	217.0
Y8059	80.40	28 x 12 x 8	5/16	134.0
Y8060	96.00	28 x 12 x 12	5/16	160.0
Y8061	103.80	30 x 12 x 12	5/16	173.0





FA Floor Boxes

Types FB-5, FB-345 and FB-345-2



Type FB-5



Type FB-345-2

Particularly designed for installation in wood floors with concrete base, can also be installed in concrete or tile floors.

Adjustable type with 5-inch diameter, satin finish brass reversible cover.

**Type FB-5** is for telephone, signal and bell system outlets, also light and small capacity power outlets without receptacle. Cover has 1/2-inch pipe size tapped opening with brass plug and one-piece fiber bushing.

**Type FB-345** is for light or power service with small capacity receptacle (15-amp., 125-v., 2-pole, single flush receptacles with fastening screws on 2 3/8-inch centers and standard plug cap); also telephone, signal and bell service. Cover has 1 1/4-inch pipe size tapped opening with brass plug and split bushing.

**Type FB-345-2** is of same type and for same application as Type FB-345, except cover has 2-inch tapped opening with brass plug, but no bushing, and is particularly suitable for use with the following capacity.

15 amp., 125 v., 2 pole, Arrow 7960-7963, H&H 7960-7963, Hubbell 5566-6730.

15 amp., 125 v., 3 pole, Arrow 8147-SA, Bryant, 9116-9111, H&H 7310-7070, Hubbell 6051-6149.

20 amp., 250 v., 2 pole, Arrow 8245-JA, Bryant 556-652, H&H 7089-7303, Hubbell 5552-6720.

20 amp., 250 v., 3 pole, Arrow 8140-KA, Bryant 9326-9322, H&H 7316-7314, Hubbell 6810-7198.

Each unit is furnished with a hot galvanized finish No. 12 gage, 4 1/4-inch diameter, 3-inch deep pressed steel box, having two 1/2-inch and two 3/4-inch conduit knockouts in opposite sides and one 1/2-inch knockout in bottom; 1-inch conduit can be used by reaming these knockouts.

Cadmium plated drawn steel adjusting ring permits adjustment for 3/4-inch variation in setting of box. Extra depth rings for greater variation are available at an additional charge. Rubber gaskets make the box reasonably watertight.

Standard package, 24 of one type.

Shipping weight, 100 pounds.

All Types..... Each \$10.00

For special depth adjusting rings add \$1.50 for each additional inch.

FA Signal Floor Boxes



Cast iron box with brass cover.

Type 437-S complies with U.S. Treasury Department specifications for work under its jurisdiction.

Tapped conduit holes will be provided if template accompanies order.

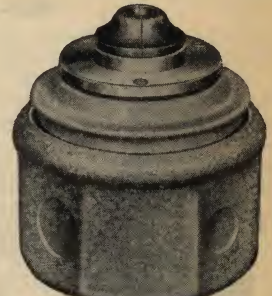
No.....	437-D
Each.....	\$22.50
Inside Dimensions.....inches	5 1/2 x 5 1/2 x 4

FA Floor Boxes

Types FB-3W and FB-343R



Type FB-3W



Type FB-343R

For installation in concrete or tile floors.

Adjustable type with 3-inch diameter, satin finish brass reversible cover.

**Type FB-3W** is for telephone, signal and bell system outlets; also light and small capacity power outlets without receptacle. Cover has 1/2-inch pipe size tapped opening with brass plug and one-piece fiber bushing.

**Type FB-343R** is for light or power service with small capacity receptacle; also telephone, signal and bell systems. Special receptacles are furnished at extra charge. The following receptacle and plug combinations can also be used.

15 amp., 125 v., 2 pole, H&H 7176-1407, Hubbell 7331-7068, Arrow 8232-RA.

15 amp., 125 v., 3 pole polarized, Hubbell 7214-9975.

Each unit is furnished with a hot galvanized finish No. 12 gage, 4 1/4-inch diameter, 3-inch deep pressed steel box, having two 1/2-inch and two 3/4-inch conduit knockouts in opposite sides and one 1/2-inch knockout in bottom; 1-inch conduit can be used by reaming these knockouts.

Cadmium plated drawn steel adjusting ring permits adjustment for 3/4-inch variation in setting of box. Extra depth rings for greater variation are available at an additional charge. Rubber gaskets make the box reasonably watertight.

Standard package, 24 of one type.

Shipping weight, 100 pounds.

Both Types.....each \$6.00

Special depth adjusting rings, add \$1.50 for each additional inch.

Receptacles

10 Amp., 250 V., 2 Pole.....	each \$ .35
10 Amp., 250 V., 3 Pole, Polarized.....	each .60

FA Hand Hole Boxes



Cast iron box with checkered cover of same material and rubber gasket to exclude moisture.

Tapped conduit holes will be provided if template accompanies order.

No.....	2010	2011	2012
Each.....	\$55.00	70.00	115.00
Inside Dimensions.....inches	12x12x6	12x12x12	18x18x12



## R&S Heavy Duty Floor Receptacles and Plugs

\*Non-Adjustable

### 3-Wire—Round Type

†75 Amperes, 440 Volts  
†100 Amperes, 250 Volts  
Polarized



No. 155

Box is made of cast iron with corrosion resisting finish.

Floor plate, nozzle, and flush cap are made of brass.

Receptacle interior and plug base are made of molded composition with heavy, self-aligning machined contacts.

Outlets: maximum, 1½ inches. Specify size and location when ordering.

Amperes	Volts	Complete with Plug		Plug Only	
		No.	Each	No.	Each
75	440	155	....	151	....
100	250	281	....	975	....

### 2-Wire—Rectangular Type

60 Amperes, 250 Volts  
Polarized



No. 142

Box is made of cast iron with corrosion resisting finish.

Floor plate, nozzle, and flush cap are made of brass.

Receptacle is furnished with lugs for soldering in cable and heavy molded composition plug with cable grip.

Outlets: maximum, 1¼ inches. Specify size and location when ordering.

No. 142, with Plug.....	each	....
No. 140, Plug Only.....	each	....

### 2, 3, and 4-Wire—Round Type

30 and †70 Amperes, 250 Volts  
Polarized



No. 86

Box is made of cast iron with corrosion resisting finish.

Floor plate, cone nozzle, and flush cap are made of brass.

Molded composition interior has heavy self-aligning machined contacts.

Outlets: maximum, Nos. 86 and 89, 1-inch; Nos. 987 and 364, 1½-inch. Specify size and location when ordering.

Amperes	Wire	Complete		Plug Only	
		No.	Each	No.	Each
30	2	86	....	556	....
30	3	89	....	157	....
70	3	987	....	150	....
70	4	364	....	337	....

\*Adjustable type can be furnished.

†To be used in series with switches and not for closing or opening circuits under load.

## R&S Watertight Floor Boxes

Box is made of cast iron with corrosion resisting finish. Cover and flange is made of brass.

### Non-Adjustable—Round Type



No. 2580

Used for wood flooring or where adjustable type is not required. Furnished with or without convenience type receptacle.

Outlets: Nos. 2580, 2581, and 2590 tapped ½-inch straight through on sides and two ½-inch on bottom only; three outlets plugged. Nos. 366 and 466, ¾-inch maximum; No. 367, 2-inch maximum. Specify size and location when ordering.

No.	Each	Floor Plate Diameter Inches	Box Height Inches	Furnished Complete With
366	....	5	3½	*½-Inch Flush Cap
367	....	6¾	4½	*½-Inch Flush Cap
466	....	4½	3½	*½-Inch Flush Cap
2580	....	3½	3¼	2-Pole Receptacle
2581	....	3½	3¼	3-Pole Receptacle
2590	....	3½	3¼	*½-Inch Flush Cap

\*Covers can be furnished with ¾, 1, or 2½-inch flush caps if specified.

### Adjustable—Round Type



No. 2503H



No. 2505, Shallow

Outlets: Regularly furnished, Nos. 2502 and 2503 tapped two ½-inch and two ¾-inch straight through at right angles; all plugged except one ½-inch outlet; Nos. 2504 and 2505 tapped ½-inch four-way, three outlets plugged unless specified otherwise; Nos. 2502H and 2503H, maximum 1-inch four-way or two ½-inch or ¾-inch per pad. Specify size and location when ordering. Furnished undrilled unless specified.

Permanent adjustment is provided by means of leveling screws permitting 15 degree angular and ½-inch vertical adjustment.

Will accommodate all standard convenience receptacles. Can also be furnished to accommodate R&S 2, 3, and 4-pole receptacles up to 30 amperes if specified.

Receptacle not included except where noted.

No.	Each	Flange Diameter Inches	Minimum Height Inches	Furnished Complete With
2502	...	4¼	3¾	½-Inch Cap
2503	...	4¼	3¾	2½-Inch Cap
2502H	...	4½	3½	½-Inch Cap
2503H	...	4½	3½	2½-Inch Cap
2504	...	3¾	2¼	T-Slot Receptacle and 2½-Inch Cap
2505	...	3¾	2¼	½-Inch Flush Cap
2509	...	...	...	T-Slot Receptacle Only for No. 2504

Prices furnished upon application.



**R&S Watertight Rectangular Floor Boxes****Adjustable—1 to 5-Gang****No. 2512**

With No. 2537 and No. 2538 Cover

Box is made of cast iron with corrosion resisting finish.

Outlets: Regularly furnished tapped two 3/4-inch straight through per gang, one plugged unless otherwise specified. Maximum 1-inch. Specify size and location of special outlets when ordering.

Furnished with No. 2537 (1/2-inch cap) cover or No. 2538 (2 1/8-inch cap) cover. Specify cover when ordering.

Adjustment, 5/8-inch vertical and ample angular.

No.....	2511	2512	2513	2514	2515
Each.....					
Length.....inches	4 3/4	7 3/4	10 3/4	13 3/4	16 3/4
No. of Gangs.....	1	2	3	4	5

**R&S Combination Floor Extension Sets****2 and 3-Wire and Low Tension****10 Amperes, 250 Volts**

Used in banks, offices, and libraries for connecting desk lamps, dictaphones, adding machines, telephones, etc.

Has heavy bakelite interior which is mounted in brass casing and tapped for 1/2 or 3/4-inch extensions.

Extension sets are available complete or in parts.

Brushed brass is standard finish. Other finishes are available. Height, 6 inches.

**No. 3000****No. 3008**

Also available in different heights upon order.

No. 3000, 2-Wire, 10-Ampere, 250-Volt Duplex Combination Set for 1/2-Inch Floor Outlet.....	each	....
No. 3001, 2-Wire, 10-Ampere, 250-Volt Duplex Combination Set for 3/4-Inch Floor Outlet.....	each	....
No. 3020, 3-Wire, 10-Ampere, 250-Volt Duplex Combination Set for 1/2-Inch Floor Outlet.....	each	....
No. 3021, 3-Wire, 10-Ampere, 250-Volt Duplex Combination Set for 3/4-Inch Floor Outlet.....	each	....
No. 3008, Low Tension Combination Set for 1/2-Inch Floor Outlet.....	each	....
No. 3009, Low Tension Combination Set for 3/4-Inch Floor Outlet.....	each	....
No. 2696, 2-Wire, 10-Ampere, 250-Volt Duplex Head Only for 1/2-Inch Extension.....	each	....
No. 2697, 2-Wire, 10-Ampere, 250-Volt Duplex Head Only for 3/4-Inch Extension.....	each	....
No. 2570, 3-Wire, 10-Ampere, 250-Volt Duplex Head Only for 1/2-Inch Extension.....	each	....
No. 2569, 3-Wire, 10-Ampere, 250-Volt Duplex Head Only for 3/4-Inch Extension.....	each	....
No. 2686, Low Tension Head Only for 1/2-Inch Extension.....	each	....
No. 2687, Low Tension Head Only for 3/4-Inch Extension.....	each	....
No. 1921, 3 1/2-Inch Extension, 1/2-Inch Iron Pipe Size Threaded for Flange.....	each	....
No. 1956, 3 1/2-Inch Extension, 3/4-Inch Iron Pipe Size Threaded for Flange.....	each	....
No. 2619, Locking Flange for 1/2-Inch Iron Pipe Size Extension.....	each	....
No. 2620, Locking Flange for 3/4-Inch Iron Pipe Size Extension.....	each	....

**T&B Watertight Floor Boxes****Approved by Underwriters' Laboratories**

Box is furnished with polarized receptacle plug.

Has 3 outlets in sides and 2 in bottom for 1/2-inch rigid conduit or any connector with 1/4-inch threads.

Has 5 tapped holes for 1/4-inch conduit; 4 of these are plugged with watertight steel plugs.

Outside diameter: box body (under flange), 2 3/4 inches; overall (face of plate), 3 3/4 inches. Outside height: box body (under flange), 2 5/8 inches; overall, including plate but not nozzle, 3 inches. Height of nozzle, 1 1/4 inches.

Standard package, 25. Weight, 70 pounds.

No. 1700, Box with 2-Wire Recp.....each \$4.00

No. 1701, Box with 3-Wire Recp.....each 5.00

No. 1702, Box with 3-Wire Grnd. Recp.....each 5.00

No. 1703, Phone or Signal Floor Box, No Recp each 3.00

**T&B Adjustable Watertight Floor Boxes****Deep Type****10 Amperes, 250 Volts—15 Amperes, 125 Volts****Approved by Underwriters' Laboratories**

Standard conduit drilling is 4 holes on sides, tapped for 1/2-inch conduit, with 2 holes plugged. Will be supplied, 3/4-inch, when specified, at no extra charge.

Cover plate, 4 inches. Height, 3 3/8 inches.

\*Attachment plug furnished when specified at extra charge.

**No. 1730, with Bell Nozzle**

No.	Description	Each	Unit	Std. Wt., lb
*1730	2-Wire Receptacle Box....	\$5.00	1	10 4 1/4
1731	3-Wire Receptacle Box....	5.50	1	10 4 1/2
1732	3-Wire Ground Recp. Box..	5.50	1	10 4 1/2
1733	Telephone or Signal Box...	4.00	1	10 4

**T & B Floor Box Accessories****For 1700, 1730 and 1760 Series****No. 1707**

Bronze disc; standard equipment on entire 1700 series of boxes except 1703, 33 and 63. No. 1707.....each \$ .25

**No. 1707 Disc****No. 1708**

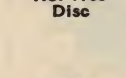
Bronze bushed outlet nozzle; standard equipment on 1700-1-2. No. 1708.....each \$ .80

**No. 1708 Nozzle****No. 1709**

Bronze disc with 1/2-inch hole, for telephone or signal work; standard equipment on 1703, 33 and 63. No. 1709.....each \$ .80

**No. 1709 Disc****No. 1710**

Bronze reversible disc with fiber bushing. No. 1710.....each \$1.00

**No. 1710 Reversible Disc****No. 1739**

Bronze bushed triple nozzle. No. 1739.....each \$1.50

**No. 1739 Triple Nozzle****\*No. 1742**

Bushed extension piece, 1/2-inch pipe size, 6 inches long. No. 1742.....each \$1.70

**No. 1742 Extension Piece****\*No. 1745**

Two 2-wire receptacles (15 amperes 125 volts each) on extension 1/2 inch pipe size, 6 inches long. No. 1745.....each \$3.50

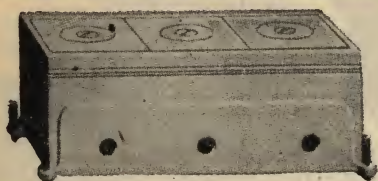
\*Bushed extension piece can be furnished in any length. Extensions furnished in 3/4 and 1-inch stock, any length.

Standard package, \$100.00 list value. Accessories may be assorted with complete boxes to obtain standard package.



### T&B Rectangular Gang Floor Boxes

Adjustable and Watertight Boxes for Light,  
Power and Communications  
Approved by Underwriters' Laboratories



These boxes have a double mechanical adjustment: floor form adjustment by adjusting screw in ear at each corner of box; floor level adjustment by adjusting screws in cover frames. Covers have no unsightly screws. The cover is metallically grounded to the box. Boxes are heavily gasketed and are watertight.

Standard equipment of these boxes is a combination 1/2-inch and 2-inch cover plate with each gang. Receptacles, nozzles and other accessories extra. Adjustment: 5/8-inch vertical; 10° angular. Minimum height overall, 3 3/8 inches; width, 4 5/16 inches. Packed one to a carton.

No.	Each	Description	Length Inches	Wt., Lb. Each
1810	\$5.00	1-Gang	4 5/16	9
1820	10.00	2-Gang	8 5/8	15
1830	15.00	3-Gang	12 7/16	21
1840	20.00	4-Gang	16 1/2	27
1850	25.00	5-Gang	20 9/16	33

### Steel City Non-Adjustable Floor Outlets

#### Original Fullman Type



No. 490

**No. 490.**—A round outlet with No. 481 box body, No. 482 brass cover plate with 1/2-inch tapped hole. Brass plug in cover plate. No. 484 cork gasket. Height, 3 1/16 inches. Diameter, 3 1/2 inches. Standard package, 25. Approximate weight each, 1 3/4 pounds.

No. 490.....each \$3.10

**No. 490-LB.**—Large non-adjustable floor box, similar to No. 490. Takes conduit up to 1 1/4 inches in all sides. With 5-inch cover. Height overall, 3 3/16 inches. Inside diameter, 4 inches. Inside height, 3 1/2 inches. Standard package, 5. Approximate weight each, 5 1/2 pounds.

No. 490-LB.....each \$12.00

**No. 490-ELB.**—Extra large non-adjustable box takes conduit up to 2 inches in all four sides. With 1/4-inch bronze cover. Diameter, 6 3/4 inches. Height overall, 3 3/16 inches. Inside diameter, 4 1/16 inches. Inside height, 4 1/4 inches. Standard package, 2. Approximate weight each, 11 pounds.

No. 490-ELB.....each \$30.00

#### Parts

No.	Each	Description	Approx. Wt. Oz.
481	\$2.50	Box Body Only, 1/2" Conduit Holes Tapped One in Each of 2 Sides and 1 in Bottom, 2 Plugged with Iron Rings	20
475-R	3.60	Two 10-Ampere 2-Wire Bakelite Receptacles, Mounted on Flat Steel Ring.....	14
484	.40	Cork Gasket.....	1
482	1.80	Brass Cover Plate with 1/2" Convex Plug, Diameter, 3 1/2"	6
483	2.50	Brass Cover Plate with 2" Flush Plug, Diameter, 3 1/2"	4
487	1.00	Convex Brass Plug for No. 482 Cover, Diam., 1/2".....	1
480	1.20	Flush Brass Plug for No. 483 Cover, Diam., 2".....	2
480-S	1.40	Brass Flush Plug for No. 483 Cover, Diam., 1/2", Convex Plug in Center, 2" Diameter.....	2
479	1.60	Brass Bell Nozzle, Threaded 2" at Bottom.....	2
478	1.70	10-Amp. 2-Wire Bakelite Receptacle Mounted on Flat Steel Ring.....	7
493-R	6.00	10-Amp. 3-Wire Bakelite Receptacle and Plug Mounted on Flat Steel Ring.....	10
491-R	6.00	20-Amp. 2-Wire Receptacle and Plug Mounted on Steel Strap.....	12
492	9.60	20-Amp. 2-Wire Polarized Receptacle and Plug, Steel Ring, Brass Cover Plate and Gasket for No. 491 Outlet	16

### Steel City Non-Adjustable Floor Outlets

#### Original Fullman Type



No. 477



Sectional View of No. 477  
Showing Receptacle Mounted  
on Steel Ring

Complete assembly consists of No. 481 box body, No. 478 10-ampere 2-wire bakelite receptacle mounted on flat steel ring which also serves as a seat for the bell nozzle or flush brass plug. No. 483 brass cover plate with 2-inch tapped hole. No. 480 flush brass plug in cover plate. No. 484 cork gasket. No. 479 bell nozzle.

Conduit holes: one in each of two sides and one in bottom tapped for 1/2-inch conduit. Two of the holes are plugged with iron plugs.

All bronze parts are brushed bronze finish. All iron and steel parts sherardized to prevent rust.

#### No. 475

Complete assembly, duplex type. Height, 3 1/16 inches. Standard package, 10. Approximate weight each, 5 pounds.

No. 475.....each \$12.50

#### No. 477

Complete assembly, single type. Height, 3 1/16 inches. Diameter, 3 1/2 inches. Standard package, 25. Approximate weight each, 2 pounds.

No. 477.....each \$4.60

#### No. 493

Complete assembly, single type, with 10-ampere 3-wire receptacle and plug. Height, 3 1/16 inches. Diameter, 3 1/2 inches. Standard package, 10. Approximate weight each, 2 pounds.

No. 493.....each \$9.60

#### No. 491

Complete assembly, single type, with No. 491-R 20-ampere 2-wire polarized receptacle and plug and No. 466 nozzle. Height, 3 1/16 inches. Diameter, 3 1/2 inches. Standard package, 10. Approximate weight each, 2 3/4 pounds.

No. 491.....each \$12.00

#### No. 495

Rectangular outlet with bell nozzle. No receptacle and plug. Four 1/2-inch tapped holes in body. One 2-inch tapped hole in center of cover. Size, 4 3/8 x 4 3/4 x 3 15/16 inches deep. Cover plate 5 1/2 inches square. Approximate weight each, 6 1/2 pounds.

No. 495.....each \$6.30

#### No. 496

Rectangular floor outlet same as No. 495, except with 10-ampere receptacle on steel plate with attachment plug. Size, 4 3/8 x 4 3/8 x 3 15/16 inches deep. Cover plate 5 1/2 inches square. Approximate weight each, 6 3/4 pounds.

No. 496.....each \$7.80

#### No. 497

Rectangular floor outlet with bell nozzle, No. 59201 30-ampere 250-volt receptacle, No. 57197 G-E attachment plug and receptacle strap. With 3/4-inch tapped hole in cover. Size, 4 3/8 x 4 3/8 x 3 15/16 inches deep. Cover plate 5 1/2 inches square. Approximate weight each, 7 1/2 pounds.

No. 497.....each \$12.50

#### No. 498

Round outlet same as No. 477, except with flange ring. Height, 3 1/4 inches. Standard package, 10. Approximate weight, 3 pounds.

No. 498.....each \$7.80



## Steel City Adjustable Floor Outlets

### Original Fullman Type

Standard tapping—four 1/2-inch holes (one in each side), three of which are closed with plugs. Can be tapped special to meet requirements. Flange rings are 1/8-inch thick.  
Total diameter of complete outlets Nos. 400, 400-D, 400-S, 401, 401-D and 401-S, 4 1/2 inches.  
Total diameter of complete outlets Nos. 420, 420-S, 421 and 421-S, 5 inches.  
All cover plates are 3/4 inch thick and set flush with top of flange ring.



Nos. 400 and 420



Nos. 401 and 421



No. 403-R

### Complete Assemblies

No.	Each	Description	SIZE, INCHES			Min. Ht. In.	Max. Ht. In.	Approx. Wt. Lb.
			High	Diam.	Plug			
400	\$7.34	Includes No. 402 Std. Box Body, *No. 405 Std. Comb. Adjusting Ring and Bronze Flange Ring, No. 409 Cover Plate with No. 471 1/2-Inch Plug, No. 411 Cork Gasket and No. 476 Sealing Cement.....	4 1/4	1 1/2	3 3/4	4 3/8	5 1/2	5 1/2
400-D	9.40	Same as No. 400, Except with No. 404 Deep Box Body.....	4 1/4	1 1/2	4 1/2	5 1/4	8	8
400-S	7.34	Same as No. 400, Except with No. 402-S Shallow Box; Adjusting Ring, 1 1/16 In. High ...	4 1/4	1 1/2	†3 3/8	3 11/16	5 1/2	5 1/2
420	9.30	Includes No. 422 Box Body, *No. 431 Std. Comb. Adj. Ring & Bronze Flange Ring, No. 435 Cover Plate with No. 471 1/2-In. Plug, No. 438 Rubber Gasket & No. 476 Sealing Cement.....	5	1 1/2	3 13/16	4 3/8	7	7
420-S	9.30	Same as No. 420, Except with No. 422-S Box Body; Adjusting Ring, 1-Inch High. ...	5	1 1/2	2 15/16	3 1/8	7	7
401	7.34	Includes No. 402 Std. Box Body, *No. 405 Std. Comb. Adjusting Ring & Bronze Flange Ring, No. 410 Cover Plate with No. 472 2-In. Plug, No. 411 Cork Gasket, No. 414 Steel Plate as a Seal for 2-In. Plug, and No. 476 Sealing Cement.....	4 1/4	2	3 3/4	4 3/8	5 1/2	5 1/2
401-D	9.40	Same as No. 401, Except with No. 404 Deep Box Body.....	4 1/4	2	4 1/2	5 1/4	8	8
401-S	7.34	As No. 401, Except with No. 402-S Shallow Box Body; Adjusting Ring, 1 1/16 In. High. ...	4 1/4	2	†3 3/8	3 11/16	5 1/2	5 1/2
421	9.30	Includes No. 422 Box Body, *No. 431 Std. Comb. Adjusting Ring and Bronze Flange Ring, No. 436 Cover Plate with No. 472 2-In. Plug, No. 438 Rubber Gasket, No. 437 Steel Plate as a Seal for 2-In. Plug, and No. 476 Sealing Cement ...	5	2	3 13/16	4 3/8	7	7
421-S	9.30	Same as No. 421 Except with No. 422-S Box Body and Adjusting Ring, 1-Inch High. ...	5	2	2 15/16	3 1/8	6 1/2	6 1/2

### High Tension Outlet

403-R	6.88	Complete Assembly, Box Body, Adjusting Ring, Plate with 2-Inch Flush Plug, Cork Gasket, Sealing Cement and Steel Plate.....	2 7/8	3 1/2	2	3 1/4	3 7/8	2 3/4
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### Low Tension Outlet

403-T	6.50	Same as No. 403-R Except No Steel Plate; 1/2-Inch Plug in Cover Plate.....	2 7/8	3 1/2	1 1/2	3 1/4	3 7/8	2 3/4
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\*Special adjustment rings for higher adjustments are available at extra cost as follows: Nos. 406, 407 and 408 for outlets Nos. 400, 400-D, 400-S, 401, 401-D and 401-S; Nos. 432, 433 and 434 for outlets Nos. 420, 420-S, 421 and 421-S.

†By removing adjusting screws minimum height can be lowered 1/8 inch.

### Box Bodies Only



No. 402



No. 404

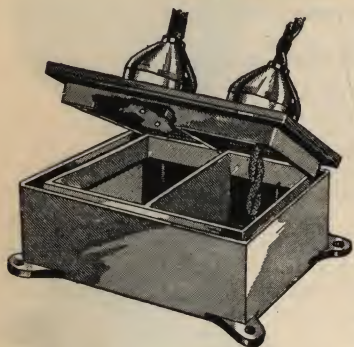
No.	Each	Description	SIZE, INCHES			Approx. Wt. Lb.
			High	Diam.	Groove Open Depth	
402	\$5.00	Std. Box Body for Outlets Nos. 400, 401; Std. Tapping.....	3 1/16	3 1/4	1	3 1/2
402-S	5.00	Spec. Shallow Box Body for Outlets 400-S, 401-S; Std. Tapping	2 9/16	3 1/4	1 1/2	3 1/2
404	6.30	Spec. Deep Box Body for Outlets 400-D, 401-D; Std. Tapping.	3 3/4	3	1	6 1/4
422	5.50	Std. Box Body for Outlets Nos. 420, 421; Std. Tapping.....	3 1/16	3 3/4	1	5
422-S	5.50	Std. Shallow Box Body for Outlets 420-S, 421-S; Std. Tapping	2 1/4	3 3/4	1 1/2	3 1/2

†Boss is large enough to allow room for two 1/2-inch or two 3/4-inch conduits side by side and can be tapped special to order for conduit up to 1 1/2-inch with room for bushing or for 2-inch conduit without room for bushing.



## Steel City Adjustable Gang Floor Outlets

## Original Fullman Type



Available with No. 458 or No. 459 cover plates. No. 458 for 1/2-inch convex plug, No. 459 for 2-inch flush plug.

End sections are provided with three holes tapped for 1/2-inch conduit. Intermediate sections have two 1/2-inch tapped holes.

Can also be tapped for 3/4-inch and 1-inch conduit with room for bushings or for 1 1/4-inch conduit without room for bushings. Sketches

should be furnished showing size and location of conduit holes if special tapping is required.

## Complete Outlets

No.	Each	No. of Gangs	No. of Plates	Size, In.			Approx. Wt. Lb.
				Min. Height	Lgth.	Width	
441	\$8.90	1	1	3 1/2	4	5 1/2	6 1/4
442	17.80	2	2	4 1/16	7	5 1/2	12
442-L	17.80	2	2	4 1/16	7	5 1/2	12
442-S	17.80	2	2	...	7	5 1/2	12
443	26.70	3	3	3 7/8	10	5 1/2	17 3/4
444	35.60	4	4	4 1/4	13	5 1/2	21 1/2
445	44.50	5	5	4 1/8	16	5 1/2	28
446	53.40	6	6	4	19	5 1/2	32

## Bodies Only

Made of gray iron with electro-galvanized or sherardized finish, specify when ordering.

No.	Each	No. of Gangs	Ht. In.	Approx. Wt. Lb.	No.	Each	No. of Gangs	Ht. In.	Approx. Wt. Lb.
447	\$5.50	1	2 3/4	4	450	\$21.84	4	3 1/8	14
448	10.92	2	3 1/8	7 1/2	451	27.30	5	3 1/8	16 1/2
449	16.38	3	3 1/8	11 1/2	452	32.76	6	3 1/8	19

## Frames Only

Adjusting frame with rubber gasket and edge frame.

Made of steel, electro-galvanized or sherardized finish, specify when ordering. Bronze edge frame statuary bronze finish. Edge frame extends all around cover plates.

No.	Each	No. of Gangs	Height Overall In.	Approx. Wt. Lb.	No.	Each	No. of Gangs	Height Overall In.	Approx. Wt. Lb.
488	\$3.90	1	1 1/4	1 1/2	455	\$15.60	4	1 15/16	6
453	7.86	2	1 3/4	2 3/4	456	19.50	5	1 3/4	8 1/2
454	11.70	3	1 5/8	4	457	23.40	6	1 15/16	8 1/2

## Parts

**No. 458 Cover Plate.**—For 1-section gang outlet for 1/2-inch convex plug. Approximate weight, 7 ounces. each \$3.00

**No. 459. Cover Plate.**—Same as No. 458, except for 2-inch flush plug. Approximate weight, 7 ounces. Each 3.00

**No. 471 Plug.**—A 1/2-inch convex plug for cover plate. Approximate weight, 1 ounce. each 1.00

**No. 472 Plug.**—A 2-inch flush plug for cover plate. Approximate weight, 2 ounces. each 1.20

**No. 472-S Plug.**—A 2-inch plug for cover with 1/2-inch convex plug in center. Approximate weight, 2 ounces. each 1.40

**No. 439 Plate.**—For seating 2-inch flush plug. Approximate weight, 1 ounce. each .40

**No. 464 Gasket.**—Rubber gasket for No. 458 or 459 cover plate. Approximate weight, 1/2 ounce. each .40

**No. 476 Sealing Cement.**—For 1-section gang. Approximate weight, 4 ounces. each .40

**No. 439-E Frame.**—Extension frame for mounting on No. 441 single gang floor outlet. Opening, 2 inches. Thickness, 1/16 inch. Height, 1/8 inch. Approximate weight, 3/4 pound. each 3.00

**No. 459-EC Collar.**—Threaded 2-inch male for inserting in any 2-inch opening and 2-inch female for inserting 2-inch flush plug. Gasket furnished in female end for use under 2-inch plug. Height, 7/8-inch. Approximate weight, 1/2 pound. each 2.50

## Parts for Steel City Adjustable Floor Outlets



No. 405



No. 409



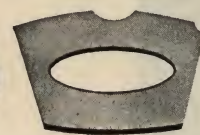
No. 410



No. 471



No. 411



No. 414



No. 476

## Rings for Outlets Nos. 400, 400-D, 400-S, 401, 401-D or 401-S

No.	Each	Description	Approx. Wt. Lb.
405	\$2.50	Adjusting and Bronze Flange Type, 1 1/2" High Overall. ....	1
405-S	2.50	Special, 1 3/16" High. ....	1 1/4
406	2.70	Special, 2 1/8" High. ....	1 1/4
407	3.00	Special, 2 3/4" High. ....	1 1/2
408	3.50	Special, 3 1/16" High. ....	1 3/4

## Rings for Outlets Nos. 420, 420-S, 421 and 421-S

No.	Each	Description	Approx. Wt. Lb.
431	\$2.70	Standard, 1 1/2" High. ....	1 1/4
431-S	2.70	Special, 1" High. ....	1
432	3.00	Special, 2 1/8" High. ....	1 1/2
433	3.50	Special, 2 3/4" High. ....	2
434	4.00	Special, 3 3/8" High. ....	2 1/2

## Bronze Cover Plates

No.	Each	Description	Approx. Wt. Lb.
409	\$3.50	For Outlets Nos. 400, 400-D, 400-S, With No. 471 1/2" Plug; Diam., 4".....	9/16
410	3.50	For Outlets Nos. 401, 401-D, 401-S With No. 472 2-Inch Plug; Diam., 4".....	1 1/2
435	4.00	For Outlets Nos. 420, 420-S, With No. 471 1/2" Plug; Diameter, 4 3/4".....	3/4
436	4.00	For Outlets Nos. 421, 421-S, With No. 472 2" Plug; Diameter, 4 3/4".....	3/4

## Bronze Plugs

No.	Each	Description	Approx. Wt. Lb.
471	\$1.00	Convex, For Nos. 409 or 435 Cover Plates, Diameter, 1/2".....	*1/2
472	1.20	Flush, For Nos. 410 or 436 Cover Plates, Diameter, 2".....	1/16
472-S	1.40	Flush, For Nos. 410 or 436 Cover Plates, Diameter, 2", With 1/2" Diameter Convex Plug in Center.....	1/8

## Gaskets

No.	Each	Description	Approx. Wt. Lb.
411	\$.40	For Outlets Nos. 400, 400-D, 400-S, 401, 401-D and 401-S.....	*1/4
438	.40	For Outlets Nos. 420, 420-S, 421, 421-S.....	*1/2

## Steel Plates

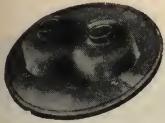
No.	Each	Description	Approx. Wt. Lb.
414	\$.40	For Seats Under 2" Plug No. 472, For Outlets Nos. 401, 401-D, 401-S.....	1/16
437	.40	For Seats Under 2" Plug No. 472, For Outlets Nos. 421, 421-S.....	1/8

## Cement

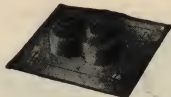
No.	Each	Description	Approx. Wt. Lb.
476	\$.40	For Use With All Outlets, Amount Sufficient For 1 Outlet.....	1/4

\*Ounces.



**Steel City Nozzles and Bases****For All Types of Floor Outlets****Combination Duplex Cover Plates and Bell Nozzles**

No. 415



No. 460

**No. 415.**—For use with floor outlets Nos. 400, 400-S, 400-D, 401, 401-S and 401-D. Diameter, 4 inches.

Approximate weight, 16 ounces.

No. 415.....each \$6.30

**No. 460.**—For use with all adjustable gang type floor outlets. Size, 3x4 inches. Approximate weight, 12 ounces.

No. 460.....each \$6.30

**Standpipe Nozzles**

Threaded  $\frac{1}{2}$  inch for  $\frac{1}{2}$  inch taps. Length, 3 inches.

No.....	416	416-A
Each.....	\$1.60	1.88
Diameter.....inches	$\frac{1}{2}$	$\frac{3}{4}$
Approximate Weight.....ounces	7	9

**Round Type High Tension Nozzles**

Complete with 10-ampere 250-volt receptacle. Diameter head,  $2\frac{1}{16}$  inches. Overall length,  $4\frac{3}{4}$  inches.

Approximate weight, 16 ounces.

No.....	417	417-A
Each.....	\$3.80	4.50
Diameter Stem.....inches	$\frac{1}{2}$	$\frac{3}{4}$

**Round Type Low Tension Nozzles**

Diameter head,  $2\frac{1}{16}$  inches. Overall length,  $4\frac{3}{4}$  inches. Complete with two  $\frac{5}{8}$ -inch inside diameter fiber bushings, one on each side.

Approximate weight, 16 ounces.

No.....	417-B	417-C	*417-D
Each.....	\$3.80	4.50	7.50
Diameter Stem.....inches	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$

\*With receptacle on both sides.

**No. 465 Drip Nozzles**

For two outlets from same box. Threaded  $\frac{1}{2}$  inch for  $\frac{1}{2}$ -inch taps.

Approximate weight, 4 ounces.

No. 465.....each \$2.34

**No. 466 Bell Nozzles**

Diameter at bottom, 2 inches. For use with cover plates with 2-inch openings. Approximate weight, 3 ounces.

No. 466.....each \$1.60

**No. 467 Bronze Stem Nozzles**

Threaded  $\frac{1}{2}$  inch for  $\frac{1}{2}$ -inch taps. Diameter,  $\frac{1}{2}$  inch.

Approximate weight, 3 ounces.

No. 467.....each \$1.60

**Steel City Nozzles and Bases****For All Types of Floor Outlets****No. 468-B Cast Bronze Nozzles**

With two duplex receptacles, allowing four connections. Threaded  $\frac{1}{2}$  inch for  $\frac{1}{2}$ -inch taps. Can also be furnished with  $\frac{3}{4}$ -inch stem, specify when ordering. Available in horizontal or vertical type, specify when ordering.

Price does not include cover plate or base.

Approximate weight, 14 ounces.

No. 468-B.....each \$12.48

**Telephone Pull-Box Nozzles**No. 469 Nozzle,  
No. 461 BaseNo. 470 Nozzle,  
No. 461-A BaseNo. 474 Low Tension  
Nozzle No. 473-A Base

**No. 469.**—Threaded  $\frac{1}{2}$ -inch. Takes 5-pair braided cable  $\frac{3}{4}$ -inch high.

No. 469—Approximate Weight, 10 Ounces.....each \$5.92

**No. 470.**—Same as No. 469, except threaded  $\frac{3}{4}$ -inch. Takes from 5 to 20-pair braided cable.

No. 470—Approximate Weight, 14 Ounces.....each \$6.30

**No. 474.**—Low tension type nozzle threaded for attachment to any  $\frac{3}{4}$ -inch opening. Stem threaded 1 inch long for use with No. 473-A base. Height,  $3\frac{1}{4}$  inches.

No. 474—Approximate Weight, 14 Ounces.....each \$2.80

**Bronze Bases for Nozzles**

No.	Each	BASE, INCHES		Diam. In.
		Drilling & Tapping	Opening	
461	\$1.70	$\frac{1}{2}$	$\frac{3}{4}$	$2\frac{1}{8}$
461-A	1.70	$\frac{3}{4}$	$\frac{3}{4}$	$2\frac{1}{8}$
461-B	1.70	$\frac{1}{2}$	$\frac{1}{2}$	$2\frac{1}{8}$
462	1.70	$\frac{1}{2}$	1	$2\frac{1}{8}$
462-A	1.70	$\frac{3}{4}$	1	$2\frac{1}{8}$
463	1.70	$\frac{1}{2}$	2	$2\frac{1}{8}$
463-A	1.70	$\frac{3}{4}$	2	$2\frac{1}{8}$
463-B	1.70	1	2	$2\frac{1}{8}$
473	1.80	$\frac{1}{2}$	$\frac{1}{2}$	3
473-A	1.80	$\frac{3}{4}$	$\frac{3}{4}$	3

**No. 468 Cast Bronze Combination Nozzles**

With duplex threaded  $\frac{1}{2}$  inch for  $\frac{1}{2}$ -inch taps. Can also be furnished with  $\frac{3}{4}$ -inch stem, specify when ordering. Available in horizontal or vertical type, specify when ordering.

Approximate weight, 16 ounces.

No. 468.....each \$7.80

**No. 468-A Cast Bronze Nozzles**

With single receptacle. Threaded  $\frac{1}{2}$  inch for  $\frac{1}{2}$ -inch taps. Can also be furnished with  $\frac{3}{4}$ -inch stem, specify when ordering. Available in horizontal or vertical type, specify when ordering.

Approximate weight, 16 ounces.

No. 468-A.....each \$7.80

Prices of nozzles do not include cover plates or bases.



## Bull Dog Universal Type Trol-E-Duct Systems

### Portable Electricity

Universal Trol-E-Duct provides a flexible wiring system, in contrast to the old fixed outlet system.

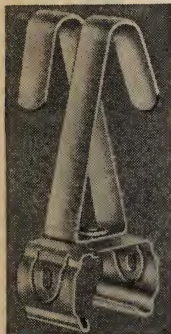
Consists of standardized duct sections enclosing copper busbars into which can be inserted plugs and trolleys for feeding current to lights and small tools.

#### Duct Lengths



Rated capacity: 50 amperes, 250 volts. Available in ten lengths, measured from ends of busbars.

No.	Each	Lgth. In.	Std. Pkg. No.	Wt. Lb.	No.	Each	Lgth. In.	Std. Pkg. No.	Wt. Lb.
D701	\$3.00	1	10	5	D706	\$7.00	6	10	37
D702	4.50	2	10	12	D707	7.00	7	10	45
D703	4.50	3	10	17	D708	8.00	8	10	50
D704	6.50	4	10	25	D709	8.00	9	10	55
D705	6.50	5	10	30	D710	8.00	10	10	60



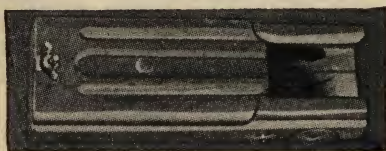
No. H210-2

#### Hangers

Available without hooks, for mounting flush against wall or ceiling, and with hooks for use with messenger cable.

No.	Each	Hook Inches	Std. Pkg. No.	Wt. Lb.
H710-0	\$ .10	None	100	6 1/4
H210-2	.30	1 1/4	50	6 1/4
H210-4	.30	3 1/4	100	12 1/2

#### End Caps



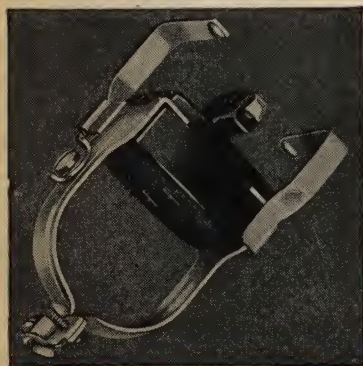
No. TEC210



No. PEP250

Used for closing up the ends of duct runs. Also used as feed-in or trolley entrance point.

No.	Each	Type	Std. Pkg. No.	Wt. Lb.
PEP250	\$3.00	Cord Grip	10	3 3/4
PEP230C	2.50	Cord Clamp	10	3 3/4
TEC210	1.50	Trolley Entrance	20	5



No. TPG712 Plug

#### Hangers

The terminal type plug or trolley is used where the connection to the light fixture or appliance is likely to be permanent; the receptacle type where it is necessary to frequently disconnect the appliance or fixture.

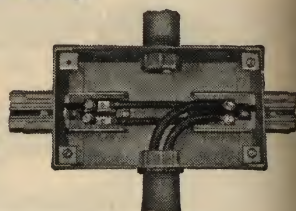
Cord set is not included.

Plugs				
125 Volts, 20 Amperes, A.C.				
125 Volts, 15 Amperes, D.C.				
No.	Each	Type	Std. Pkg. No.	Wt. Lb.
TPG712	\$2.00	Terminal	20	4
RPG712	2.00	Receptacle	20	4
Trolleys				
250 Volts, 20 Amperes, A.C.				
250 Volts, 20 Amperes, D.C.				
TTG712	\$3.00	Terminal	20	4 1/2
RTG712	3.00	Receptacle	20	4 1/2

#### Duct Couplings



No. FCB 710



No. FCB711

Provides a means for joining the duct sections electrically and mechanically.

#### Standard Couplings

No.	Each	Type	Std. Pkg. No.	Wt. Lb.
C710	\$1.50	Plain	40	15
TC710	3.00	Trolley Entrance	20	9
UC710	3.00	Union	10	5 1/2
USC710	3.50	Sectionalized	10	5 1/2

#### Feed-In Couplings With Outlet Box

FCB710	\$7.00	Standard	4	10
SFB 710	8.00	Sectionalized	4	10
FCB711	7.00	Standard	4	10
SFB 711	8.00	Sectionalized	4	10
EFB711	6.00	End Feed	4	10

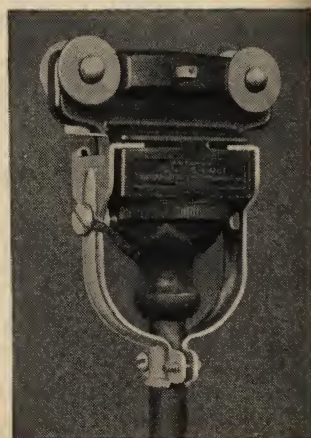
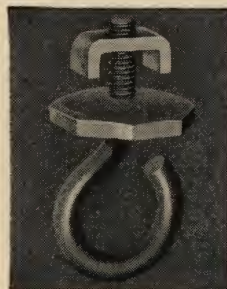
#### No. WS710B Weight Support

When inserted in the duct, it supports loads such as lighting fixtures, transformers, etc., up to 75 pounds. It locks in place by turning 90° in duct, bringing prongs of clamp down into duct grooves and then tightening lock nut against the outside of duct.

Standard package, 50.

Weight per standard package, 4 1/2 pounds.

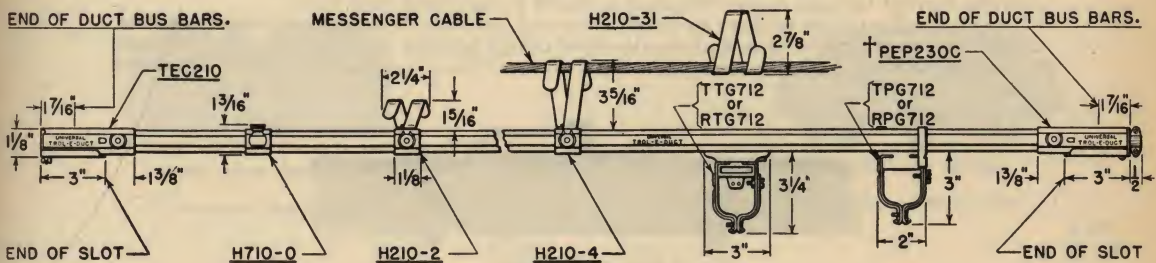
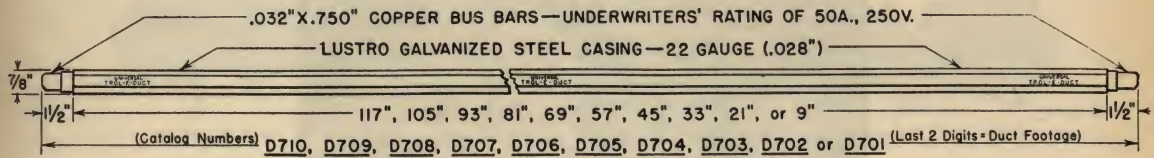
No. WS710B.....each \$ .30



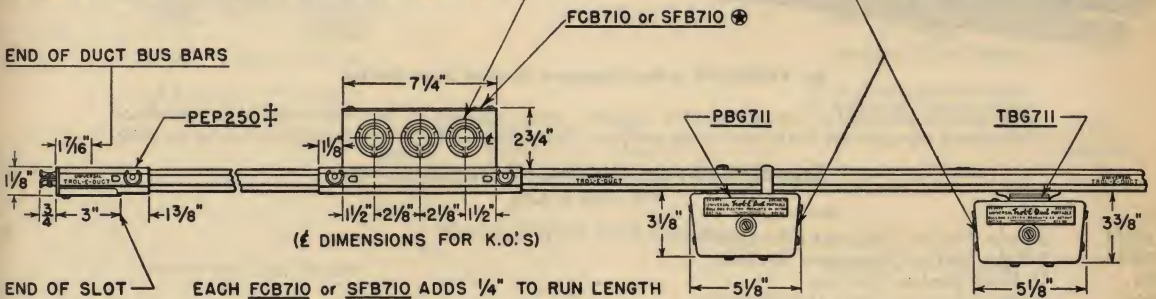
No. RTG712 Trolley



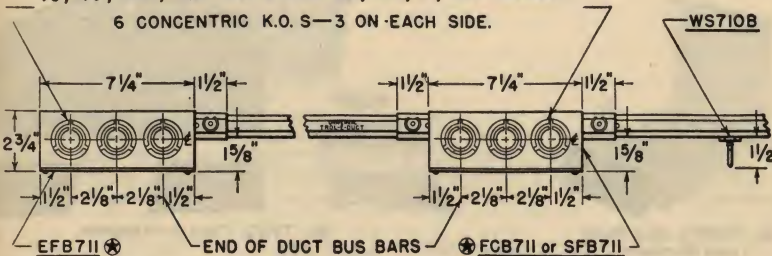
## Dimensional Data For Installing Bull Dog Universal Trol-E-Duct



7/8", 1 1/8", 1 3/8", 1 3/4" K.O.'S FOR 1/2", 3/4", 1", 1 1/4" CONDUIT  
8 CONCENTRIC K.O.'S—3 ON EACH SIDE—1 ON EACH END.



7/8", 1 1/8", 1 3/8", 1 3/4" K.O.S FOR 1/2", 3/4", 1", 1 1/4" CONDUIT.  
6 CONCENTRIC K.O.S—3 ON EACH SIDE.



Each USC710 coupling adds 1/4" to the length of the duct run. C710, TC710, and UC710 couplings do not add to the length of the duct run.

Each EFB711 adds 5 3/4" and each FCB711 or SFB711 adds 4 1/4" to the length of the duct run. FCB711, SFB711, FCB710, SFB710, and EFB711 are all 4 1/8" wide.

PEP230C is used for connecting flexible cord to end of duct. Maximum cord diameter—.406".

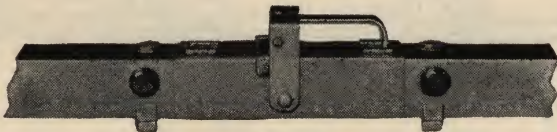
PEP250 is used for connecting steel armored cable, flexible metallic conduit (limited to 1/2" size) and flexible cords to end of duct.



Bull Dog Industrial Type Trol-E-Duct Systems



Bull Dog Industrial Trol-E-Duct is a mobile electrical system providing a constant source of electrical power for cranes, hoists, portable electric tools, and other moving loads. Carries current through copper bus bars enclosed in insulated steel duct. Current is collected by trolleys to which are wired portable or movable electrical devices. Flexibility, unit construction, and standardized design permits Trol-E-Duct to be installed, dismantled, and reinstalled innumerable times to meet the ever-changing nature of modern industry.



Drop-Out Section



No. TRD310-44, 3-Pole Standard 10-Foot Duct Section

One hanger assembly, complete with hanger, cover and set of bus connectors, is furnished as standard equipment with each duct section, drop-out, and drop-out sectionalizing section.

Standard 10-Foot, 90-Ampere Duct Sections  
575 Volts or Less

No.	Description	Each
TRD210-44	2-Pole, 10-Foot Standard Section.....	\$45.00
TRD310-44	3-Pole, 10-Foot Standard Section.....	50.00
TRD010	10-Foot Busless Section.....	30.00
TRD010R	10-Foot Busless Drop-Out Section.....	40.00
TRD210R-44	2-Pole, 10-Foot Drop-Out Section.....	55.00
TRD310R-44	3-Pole, 10-Foot Drop-Out Section.....	60.00
TRD310RS-44	3-Pole, 10-Foot Drop-Out Sectionalizing Section.....	75.00

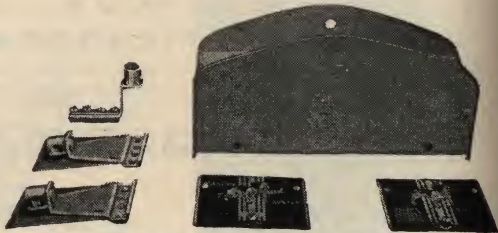
Complete Assemblies of Duct Accessories



No. TRH3, Hanger



No. TRB23, End Plate  
and Bumper



No. TRF3, Feed-In Adaptor

No.	Description	Each
TRH2	2-Pole Hanger Assembly.....	\$5.50
TRH3	3-Pole Hanger Assembly.....	6.00
TRF2	2-Pole Feed-In Adaptor Set.....	7.50
TRF3	3-Pole Feed-In Adaptor Set.....	7.50
TRB23	End Closer and Bumper Assembly.....	3.00



## Bull Dog Flexible Industrial Type Trol-E-Duct Systems

Concluded

## Trolleys Only

575 Volts or Less



Standard Type Trolley

30 Amperes Maximum

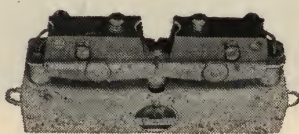
No. ....	T131	T331
Each. ....	\$15.00	18.00
No. of Poles. ....	2	3



Heavy Duty Type Trolley

60 Amperes Maximum

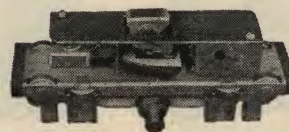
No. ....	T132	T332
Each. ....	\$25.00	30.00
No. of Poles. ....	2	3



Curve Type Trolley

30 Amperes Maximum

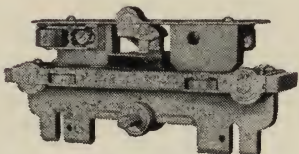
No. ....	TR131-1	TR331-1
Each. ....	\$28.00	33.00
No. of Poles. ....	2	3



Shoe Type Trolley

60 Amperes Maximum

No. ....	T134	T334
Each. ....	\$37.00	42.00
No. of Poles. ....	2	3



Roller Collector Trolley

20 Amperes Continuous  
30 Amperes Intermittent

No. ....	TR131-2	TR331-2
Each. ....	\$20.00	25.00
No. of Poles. ....	2	3



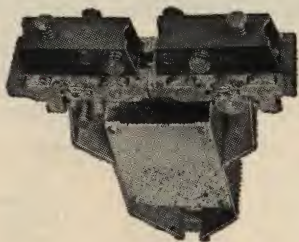
Transfer Type Trolley

30 Amperes Continuous  
60 Amperes Intermittent

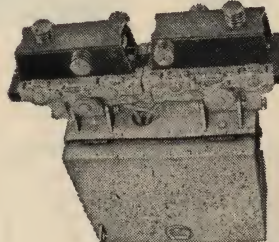
No. ....	T25	T35
Each. ....	\$60.00	70.00
No. of Poles. ....	2	3

## Trolleys With Tool Hangers

With Plain Tool Hanger



With Box Tool Hanger



Plain tool hangers are designed for use with standard and heavy duty trolleys. The removable screw cover on the hanger makes wiring connections easily accessible for installation, inspection and maintenance.

No.	Each	Poles	Type of Trolley
T13101	\$23.00	2	Standard
T33101	26.00	3	Standard
T13101-2	28.00	2	Roller Collector
T33101-2	33.00	3	Roller Collector
T13201	33.00	2	Heavy Duty
T33201	38.00	3	Heavy Duty

Box tool hangers are designed for use with standard and heavy duty trolleys. The hinged cover on the hanger box makes wiring connections, SaftoFuse units, starters, and receptacles easily accessible.

No.	Each	Poles	Type of Trolley
T13102	\$27.50	2	Standard
T33102	30.50	3	Standard
T13102-2	32.50	2	Roller Collector
T33102-2	37.50	3	Roller Collector
T13202	37.50	2	Heavy Duty
T33202	42.50	3	Heavy Duty



## Bull Dog Flexible BUStrIBUTIONDUCT Systems

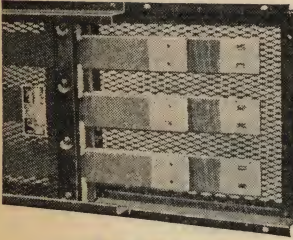
### Ventilated O-X Duct for Feeder Circuits



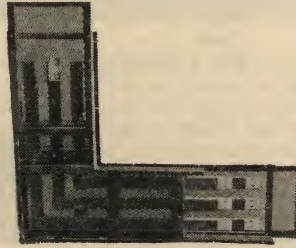
Ventilated LO-X BUStrIBUTIONDUCT is designed for efficient power and lighting feeder runs; also welders or other large inductive loads.

Materially reduces voltage drop, operating temperatures, and operating costs.

Available in capacities ranging from 600 to 4000 amperes inclusive, for 2-pole, 3-pole, or 3-phase 4-pole, 600 volts or less, a.c. or d.c.



**Duct Section**



**Flatwise Elbow**



**Edgewise Elbow**

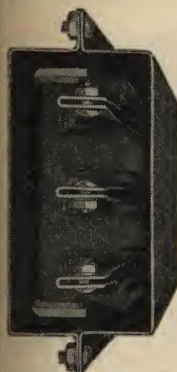
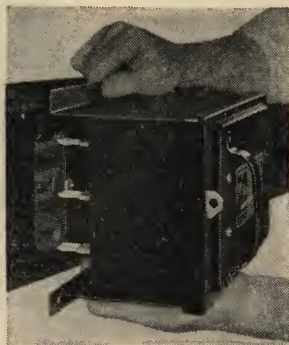
**Duct Section.** In addition to standard 10-foot duct sections (as illustrated) fittings are available to meet any building contour or installation requirements.

**Flatwise Elbow.** Flatwise elbows are available for making right or left hand 90° bends. Scarf lap joints and bolted connections are used for joining elbows to duct sections.

**Edgewise Elbows.** Edgewise elbows permit 90° right or left hand bends. Handhole openings afford access to bus bars within casing and facilitate connecting of fittings to duct.

2-Pole 10-Foot Duct Sections									
BUS BARS PER LEG					Elbows				
Amps.	No.	Size	No.	Each	2-Pole No.	3-Pole No.	Each	4-Pole, No.	3-Phase Each
		Inches							
600	1	1/4x2	VXF206	\$100.00	VEL206	VEL306	\$80.00	VEL406	\$100.00
800	1	1/4x3	VXF208	140.00	VEL208	VEL308	80.00	VEL408	100.00
1000	1	1/4x4	VXF210	180.00	VEL210	VEL310	80.00	VEL410	100.00
1350	2	1/4x2 7/16	VXF213	220.00	VEL213	VEL313	80.00	VEL413	100.00
1600	2	1/4x3	VXF216	260.00	VEL216	VEL316	80.00	VEL416	100.00
2000	2	1/4x4	VXF220	340.00	VEL220	VEL320	80.00	VEL420	100.00
3-Pole 10-Foot Duct Sections									
Amps.	No.	Size	No.	Each	2-Pole No.	3-Pole No.	Each	4-Pole, No.	3-Phase Each
		Inches							
600	2	1/4x1	VXF306	\$160.00	VTE206	VTE306	\$100.00	VTE406	\$120.00
800	2	1/4x1 1/2	VXF308	210.00	VTE208	VTE308	100.00	VTE408	120.00
1000	2	1/4x2	VXF310	260.00	VTE210	VTE310	100.00	VTE410	120.00
1350	2	1/4x2 7/16	VXF313	310.00	VTE213	VTE313	100.00	VTE413	120.00
1600	2	1/4x3	VXF316	360.00	VTE216	VTE316	100.00	VTE416	120.00
2000	2	1/4x4	VXF320	480.00	VTE220	VTE320	100.00	VTE420	120.00
4-Pole 3-Phase 10-Ft. Duct Sections—Neutral 1/2 Rating									
Amps.	No.	Size	No.	Each	2-Pole No.	3-Pole No.	Each	4-Pole, No.	3-Phase Each
		Inches							
600	2	1/4x1	VXF406	\$200.00	VCR206	VCR306	\$120.00	VCR406	\$140.00
800	2	1/4x1 1/2	VXF408	260.00	VCR208	VCR308	120.00	VCR408	140.00
1000	2	1/4x2	VXF410	310.00	VCR210	VCR310	120.00	VCR410	140.00
1350	2	1/4x2 7/16	VXF413	360.00	VCR213	VCR313	120.00	VCR413	140.00
1600	2	1/4x3	VXF416	410.00	VCR216	VCR316	120.00	VCR416	140.00
2000	2	1/4x4	VXF420	550.00	VCR220	VCR320	120.00	VCR420	140.00
End Closers									
Amps.	2-Pole No.	3-Pole No.	4-Pole, 3-Phase No.	Each	2-Pole No.	3-Pole No.	4-Pole, 3-Phase No.	Each	
600	VEC206	VEC306	VEC406	\$10.00	VTT206	VTT306	VTT406	\$45.00	
800	VEC208	VEC308	VEC408	15.00	VTT208	VTT308	VTT408	50.00	
1000	VEC210	VEC310	VEC410	16.00	VTT210	VTT310	VTT410	55.00	
1350	VEC213	VEC313	VEC413	17.00	VTT213	VTT313	VTT413	60.00	
1600	VEC216	VEC316	VEC416	18.00	VTT216	VTT316	VTT416	65.00	
2000	VEC220	VEC320	VEC420	22.00	VTT220	VTT320	VTT420	70.00	
3-Pole Tap Boxes									
Box Amperes	Duct Ampere Rating								
	600	800	1000	1350	1600	2000	2500	3000	4000
225.....	VTB306A	VTB308A	VTB310A	VTB313A	VTB316A	VTB320A	VTB325A	VTB330A	VTB340A
400.....	VTB306B	VTB308B	VTB310B	VTB313B	VTB316B	VTB320B	VTB325B	VTB330B	VTB340B
600.....	VTB306C	VTB308C	VTB310C	VTB313C	VTB316C	VTB320C	VTB325C	VTB330C	VTB340C
800.....		VTB308D	VTB310D	VTB313D	VTB316D	VTB320D	VTB325D	VTB330D	VTB340D
1000.....			VTB310E	VTB313E	VTB316E	VTB320E	VTB325E	VTB330E	VTB340E
Tap Box.....each	\$100.00	\$105.00	\$110.00	\$115.00	\$120.00	\$125.00	\$130.00	\$145.00	\$200.00
Opening.....each	30.00	30.00	30.00	35.00	35.00	35.00	56.00	56.00	56.00



**Bull Dog Flexible BUStrIBUTIONDUCT Systems****Type BDA Plug-In Duct for Branch Circuits****Type BDA Duct****Bus Plug for Type BDA Duct  
Cover Operable Type**

Type BDA plug-in duct (200 amperes maximum) has been specially designed for use in factories, garages, repair shops, and similar places where the total connected load is small and individual motor circuits do not exceed 100 amperes.

Furnished for 2 and 3-pole service, 600 volts or less.

Each 10-foot section is equipped with 10 plug-in openings, 5 on each side of duct.

**Bus Duct—Standard 10-Foot Sections**

Amps.	2-Pole 6000V.		3-Pole 575V. A.C.		Bus Bars per Leg Inches	Duct Gage
	No.	Each	No.	Each		
200	BDA202	\$50.00	BDA302	\$55.00	1-.05x2	16

**Fittings—For Single or 3-Phase  
Trans. Tap  
Opening**

Amps.	End Closers		Flange End		Trans. Tap Opening		Ebony End Closers	
	No.	Each	No.	Each	No.	Each	No.	Each
200	EC1	\$7.00	FE41	\$25.00	TT41	\$25.00	EE41	\$25.00

**\*Fusible Bus Plugs**

Amps.	250 Volts		575V. A.C.		230V. A.C.		575V. A.C.	
	No.	Each	No.	Each	No.	Each	No.	Each
30	BSU221	\$17.00	BSJ251	\$19.00	BSU321	\$18.00	BSJ351	\$20.00
60	BSJ222	17.00	BSJ252	19.00	BSJ322	18.00	BSJ352	20.00
100	BSJ2237	23.00	BSJ2537	25.00	BSJ3237	24.00	BSJ3537	27.00

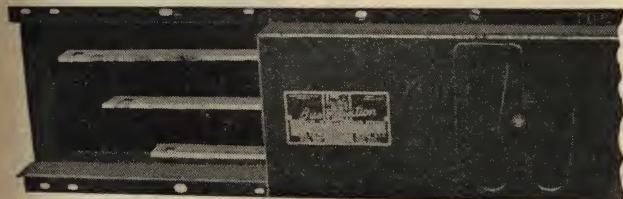
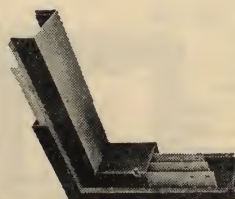
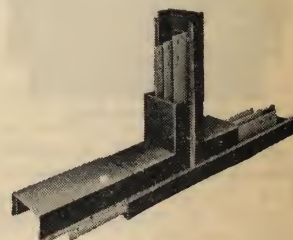
\*Not fusible, same price.

**Type BD Plug-In Duct for Branch Circuits**

Type BD plug-in duct has ten provisions for insertion of branch circuit plugs in each standard 10-foot section, 5 on each side of duct.

It is prefabricated and can be quickly and easily installed, rearranged, relocated or moved into another building without any material loss.

Furnished in capacities from 225 to 1350 amperes for 2 or 3-pole service, 600 volts or less, a.c. or d.c. Also available for 3-phase, 4-pole, 250 volts or less.

**Standard 10-Foot Duct Section****Edgewise Elbow****Edgewise Tee****2-Pole 10-Foot Duct Sections**

Amps.	BUS BARS PER LEG No.	Inches	Approximate Cir. Mils per Leg	No.	Each
225	1	.05x2	127,324	BDP202	\$55.00
400	1	1/4x1 1/2	460,387	BDP204	85.00
600	1	1/4x2	619,541	BDP206	110.00
800	1	1/4x3	937,850	BDP208	165.00
1000	1	1/4x4	1,256,160	BDP210	200.00

**3-Pole 10-Foot Duct Sections**

Amps.	BUS BARS PER LEG No.	Inches	Approximate Cir. Mils per Leg	No.	Each
225	1	.05x2	127,324	BDP302	\$60.00
400	1	1/4x1 1/2	460,387	BDP304	95.00
600	1	1/4x2	619,541	BDP306	120.00
800	1	1/4x3	937,850	BDP308	180.00
1000	1	1/4x4	1,256,160	BDP310	220.00

**4-Pole, 3-Phase 10-Ft. Duct Sections—Neutral 1/2 Rating**

Amps.	BUS BARS PER LEG No.	Inches	Approximate Cir. Mils per Leg	No.	Each
225	1	.05x2	127,324	BDP402	\$80.00
400	1	1/4x1 1/2	460,387	BDP404	125.00
600	1	1/4x2	619,541	BDP406	150.00
800	1	1/4x3	937,850	BDP408	220.00
1000	1	1/4x4	1,256,160	BDP410	275.00

**Elbows**

2-Pole No.	3-Pole No.	Each	4-Pole 3-Phase	
			No.	Each
LDP202	LDP302	\$60.00	LDP402	\$72.00
LDP204	LDP304	60.00	LDP404	72.00
LDP206	LDP306	60.00	LDP406	72.00
LDP208	LDP308	60.00	LDP408	72.00
LDP210	LDP310	60.00	LDP410	72.00

**Tees**

2-Pole	3-Pole	Each	4-Pole 3-Phase
TDP202	TDP302	72.00	TDP402
TDP204	TDP304	72.00	TDP404
TDP206	TDP306	72.00	TDP406
TDP208	TDP308	72.00	TDP408
TDP210	TDP310	72.00	TDP410

**Crosses**

2-Pole	3-Pole	Each	4-Pole 3-Phase
CDP202	CDP302	84.00	CDP402
CDP204	CDP304	84.00	CDP404
CDP206	CDP306	84.00	CDP406
CDP208	CDP308	84.00	CDP408
CDP210	CDP310	84.00	CDP410



## Bull Dog Flexible BUStribution DUCT Systems

## Type BD Plug-In Duct for Branch Circuits

## Vacu-Break Switch Plugs

## 2-Pole—230-Volt, A.C.—250-Volt, D.C.



Circuit Master Plug

Used for the individual control of lighting circuits and wall receptacles, thus eliminating the distribution network of the centralized panel-board lighting system.

Ratings from 15 to 50 amperes, 120 and 208 volts.



Circuit Breaker Plug

Used where an automatic protective device of the industrial breaker type with inverse time limit feature is required.

Plugs are quick-make and quick-break with cover interlock.

Ratings from 15 to 600 amperes, 2, 3, and 4-poles, 600 volts or less.



Transformer Plug

Rated at 2, 4, 6, 8, and 10 kva. Furnish single-phase kva. Furnish single-phase current at reduced voltage (240V. or 120V.).

Designed with or without 2-pole a.c. magnetic contactors. May be plugged in on 240V. or 280V., 2-pole or 2-pole Type BD duct. Contactors are rated at 22 and 45 amperes.



Temperature Indicating Plug

Warns, by visual indication through a lamp, when temperatures along a bus duct run exceed an efficient operating temperature—100°C. (221°F.) and thus remedial measures can be taken to relieve the situation.

Amps.	No.	Each	Hp. A.C.	Hp. D.C.
30	BOS14221	\$29.00	2	5
60	BOS14222	33.00	5	10
100	BOS14223	50.00	10	15
200	BOS14224	87.00	15	30
400	BOS14225	179.00	30	50
600	BOS14226	232.00	..	..

## 2-Pole—575-Volt, A.C.

30	BOS14261	\$29.00	5	..
60	BOS14262	33.00	10	..
100	BOS14263	57.00	15	..
200	BOS14264	96.00	30	..
400	BOS14265	206.00	..	..
600	BOS14266	292.00	..	..

## 3-Pole—230-Volt, A.C.

30	BOS14321	\$33.00	3	..
60	BOS14322	37.00	7½	..
100	BOS14323	57.00	15	..
200	BOS14324	96.00	30	..
400	BOS14325	192.00	50	..
600	BOS14326	264.00	..	..

## 3-Pole—575 Volt, A.C.

30	BOS14351	\$33.00	7½	..
60	BOS14352	37.00	20	..
100	BOS14353	63.00	30	..
200	BOS14354	108.00	50	..
400	BOS14355	219.00	..	..
600	BOS14356	324.00	..	..

## 4-Pole, 3 Phase—230-Volt, A.C.

30	BOS16421	\$39.00	3	..
60	BOS16422	43.00	7½	..
100	BOS16423	69.00	15	..
200	BOS16424	114.00	30	..
400	BOS16425	212.00	50	..
600	BOS16426	292.00	..	..

## Type BP Bus Plugs

## 2-Pole—230-Volt, A.C.—250-Volt, D.C.

30	BP221	\$20.00	2	5
60	BP222	20.00	5	10
100	BP2237	29.00	10	15

## 2-Pole—575-Volt, A.C.

30	BP251	\$20.00	5	..
60	BP252	20.00	10	..
100	BP2537	33.00	15	..

## 3-Pole—230-Volt, A.C.—575-Volt, A.C.

30	BP321	\$22.00	3	..
60	BP322	22.00	7½	..
100	BP3237	30.00	15	..

## 3-Pole—575-Volt, A.C.

30	BP351	\$22.00	7½	..
60	BP352	22.00	20	..
100	BP3537	35.00	30	..

## 4-Pole, 3-Phase—230 Volt,—A.C.

30	BP421	\$32.00	3	..
60	BP422	32.00	7½	..
100	BP4237	44.00	15	..

## Ground Detector (Potentializer) Plugs

## 230 and 460-Volt

No.	2-Pole	3-Pole
.....	PGR6214	PGR6314
Each.....	\$42.00	42.00

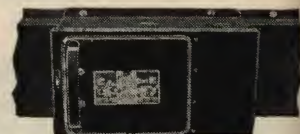


Vacu-Break Type BOS Switch Plug

Fusible and non-fusible types are available from 30 to 600 amperes, 2 or 3-pole 600 volts or less, or 4-pole solid neutral, 230 volts, a.c.

Minimizes arcing, also prevents pitting and beading of contacts.

Plugs are quick-make, quick-break and horsepower rated.



Type BP Bus Plug

Fusible and non-fusible plugs for disconnecting service only.

Ratings are for 30, 60, and 100 amperes, 2 or 3-pole 600 volts or less, or 4-pole, solid neutral, 230 volts a.c.

Opening and closing the hinged cover makes or breaks the circuit.

Plugs are horsepower rated.

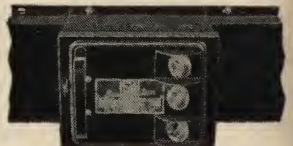


Capacitor Plug

A convenient and flexible means for reducing inductive heating and improving the power factor on bus duct systems.

The thermal protective device and capacitor unit are contained in one housing.

Rated from 1 to 7.5 kva. at 230 volts and 1 to 15 kva. at 460 volts, 60 cycle a.c.



Ground Detector Plug

Affords an easy means, through lamps, for quickly indicating grounds on the system. Also serves as potentializer by establishing a potential to ground between bus bars and casing.

Ratings, single-phase and 3-phase, 460 and 230 volts.



**Bull Dog Kbl-Duct and Fittings**

4x4-Inch Wiring Trough

Cross Sectional Area 16 Inches

Approved for use under Wireways—Article 362 of the National Electrical Code.



Kbl-Duct is an enclosed metal raceway, or trough, for conveying electric wires and cables, and designed to provide ample protection against damage to the wires or cables. It affords instant accessibility at all points throughout its length,

permitting splicing, tapping, or other changes, or allowing other cables to be run through quickly and easily. Its use makes possible the convenience of temporary wiring with the efficiency of a permanent installation.

Kbl-Duct is manufactured in standardized sections, provided with hinged covers and numerous conduit knockouts. The sections are designed to be bolted together, the completed assembly forming a continuous, unbroken wireway. Its variety of fittings (tees, elbows, pull boxes, etc.) makes it adaptable to any building contour. Offsets or change of direction are readily effected. Kbl-Duct may be suspended from an overhead mounting, or supported on a wall. Single runs, multiple runs, branch runs or any combinations of these are possible.

All items of the Kbl-Duct line are die made from heavy steel, and are uniform in size. All have a durable, baked black enamel finish.

**Maximum Number of Wires (Types R, RH, and RW)  
Which May Be Installed in 4x4-Inch Kbl-Duct**

The table below shows the maximum number of wires or cables, Types R, RH, and RW, all of one size or in combination, which may be installed in 4x4-inch, Kbl-Duct, under the 20 per cent of area limitation provided in Article 362, paragraph 3624, of the 1947 National Electrical Code. It should be noted particularly that the Code states: "Wireways shall not contain more than 30 conductors at any cross section, unless the conductors are for signaling circuits or are control conductors between a motor and its starter and used only for starting duty."

**All One Size**

Wire Size No.	Area of Rubber Covered Wire Types R, RH, & RW Square Inches	Maximum Number of Wires All of One Size	Wire Size No.	Area of Rubber Covered Wire Types R, RH, & RW Square Inches	Maximum Number of Wires All of One Size
14	*.0230	†139	1/0	.3107	10
12	*.0278	†115	2/0	.3578	8
10	.0460	† 69	3/0	.4151	7
8	.0760	† 42	4/0	.4840	6
6	.1238	25	250M	.5917	5
4	.1605	19	300M	.6837	4
3	.1817	17	400M	.8365	3
2	.2067	15	500M	.9834	3
1	.2715	11			

No. 14 to 8, solid wire; No. 6 and larger, stranded.

\*Areas in square inches for Type RW in Nos. 14 and 12 are .0327 and .0384.

†Maximum number of conductors limited to 30, except as noted in paragraph above.

**Combinations of Sizes**

Combinations of various sizes may be computed in the following manner:

EXAMPLE: It is desired to install three 250,000CM cables in 4x4-inch Kbl-Duct, using the remaining capacity of the wireway for No. 8 wires. How many No. 8 wires may be installed?

Area of 4x4-inch Kbl-Duct=16 square inches.

Area of 20 per cent of wireway=16÷5=3.2 square inches.

Space reserved for three 250,000CM cables=3x.5917=1.7751 square inches.

Space remaining for No. 8 wires=3.2-1.7751=1.4249 square inches.

Space required for one No. 8 wire=.076 square inches.

Number of No. 8 wires permissible=1.4249÷.076=18.

Thus, 18 No. 8 wires may be installed in combination with three 250,000CM cables.

**Bull Dog Kbl-Duct and Fittings**

Listed as "Wireways" by Underwriters' Laboratories

4x4-Inch Kbl-Duct



Kbl-Duct has adaptable features whereby it can be connected to any type 4x4-inch duct. With No. 40A35 it can be connected to existing installations of 3½x3½-inch

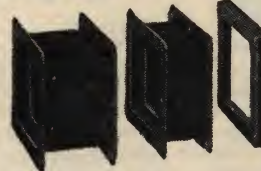
duct. Duct may be mounted with cover at top, sides, or bottom.

Two types of concentric knockouts are provided, spaced at convenient intervals along the duct sections and fittings. The smaller type accommodates ½ and ¾-inch conduit; the larger, ¾, 1, 1¼, and 1½-inch conduit.

No.	40D5	40D2	40D1
Each.....	\$8.00	5.00	4.00
Length.....feet	5	2	1
Weight.....pounds	18	8	5

**Nipples**

A short length of duct which may be inserted between the standard lengths so as to secure any dimensional length of duct required.



No.	Each	Length Feet	Weight Pounds
40N6	\$4.00	6	2¼
40N3	3.00	3	1½
40N2	3.00	2	1¼
40N07	1.50	¾	1¼
40N05	1.50	½	1
40N01	.60	¼	¼

**No. 40SN Slide Nipples**

A convenient adjustable fitting for taking up the slack where there are variations in lengths of runs. After length is established, both sliding sections should be bonded together for grounding; screws are provided.

Minimum length, 8 inches; maximum extension, 13 inches. Weight, 5 pounds.

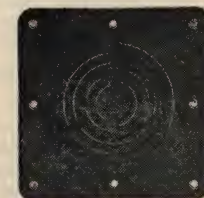
No. 40SN.....each \$4.50

**No. 40F End Flanges**

This fitting is the regular reinforced flange end of the Kbl-Duct and is supplied separately for welding or bolting onto a section of duct where it may have been necessary to cut a standard section.

Weight, ¼ pound.

No. 40F.....each \$.80

**No. 40EP End Plates**

This end plate, provided with K.O., is used for closing the end of a duct section or opening in a pull box.

Weight, ¼ pound.

No. 40EP.....each \$.80

**No. 40H7 Hangers**

For suspending Kbl-Duct. Where necessary, hanger can be bent at right angles in a vise, as shown at right. Any number of these hangers may be bolted together to secure any length hanger desired in ½ inch multiple adjustments.

Length, 7 inches. Weight, 1½ pounds.

No. 40H7.....each \$.60





### Bull Dog Kbl-Duct Fittings

Listed as "Wireways" by Underwriters' Laboratories

#### 22½°, 45°, and 90° Elbows



This elbow is provided with flanges, so it can be bolted on the end of a Kbl-Duct section. It is made with special dies and formed circular and smooth, so that wires may be readily pulled through it.

No. ....	40L22	40L45	40L90
Each .....	\$5.00	5.00	5.50
Shape .....	22½°	45°	90°
Weight .....	1½	2½	4

#### No. 40CL9 90° Corner Elbows and Pull Boxes



A combination pull box and elbow, provided with hinged cover and spring catch. K.O.'s are provided for convenient conduit outlets.

Weight, 5½ pounds.

No. 40CL9.....each \$9.00

#### No. 40T Tees



This tee has hinged cover provided with catch. K.O.'s are provided. This fitting recommended for use at every building column or point where light and power cabinets are, or may be later, located.

Weight, 7¼ pounds.

No. 40T.....each \$11.00

#### No. 40X Crosses

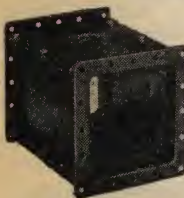


This cross is provided with double hinged doors, so it may be used as a pull box, greatly increasing the flexibility of the duct system.

Weight, 9¼ pounds.

No. 40X.....each \$13.50

#### No. 40B40 4-Inch Square Junction Boxes

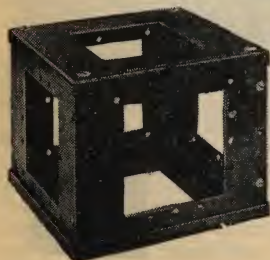


This junction box may sometimes be used in place of the more expensive tees and ells. It has removable sides provided with K.O.'s, so that junction with sections of Kbl-Duct or conduit can be readily effected.

Weight, 1¾ pounds.

No. 40B40.....each \$3.00

#### No. 40B7 7½-Inch Square Junction and Pull Boxes



This 7½-inch square, combined junction and pull box is designed for use where space limitations or requirements preclude the use of the larger pull box. Closing plates for unused openings (No. 40EP) are extra. Kbl-Duct bushings (No. 40DB) should be ordered and inserted in the used openings.

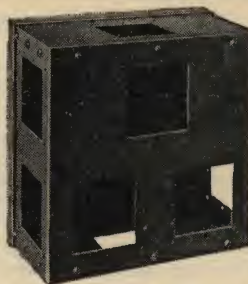
Weight, 4 pounds.

No. 40B7.....each \$7.00

### Bull Dog Kbl-Duct Fittings

Listed as "Wireways" by Underwriters' Laboratories

#### No. 40B12 12½-Inch Square Pull Boxes

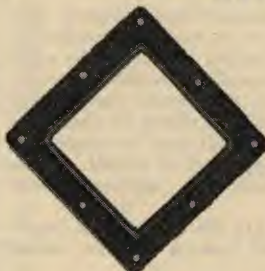


This 12½-inch square box provides a more ample pull box and may also be used as a junction box for double runs of Kbl-Duct. Closing plates for unused openings (No. 40EP) are extra. Kbl-Duct bushings (No. 40DB) should be ordered for insertion in the used openings.

Weight, 9½ pounds.

No. 40B12.....each \$18.00

#### No. 40DB Pull Box Bushings

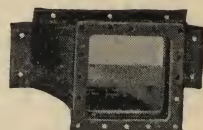


Kbl-Duct bushing has a round edge bead to protect and facilitate the work of pulling through the wires; should be ordered for insertion in the used openings of the pull boxes.

Weight, ¼ pound.

No. 40DB.....each \$.50

#### No. 40DC Branch-Off Couplings



This branch-off coupling (of which two views are shown) may be used as a convenient or emergency tee to start a branch run of Kbl-Duct from any point of an existing installation. All that is necessary is to knock out the K.O.'s in the duct, or if a larger opening is desired, cut out a section of the duct, bolt this fitting onto the duct, and continue with the branch run in the direction desired.

Weight, 3 pounds.

No. 40DC.....each \$4.50

#### No. 40A35 Adapters



The adapter is for use in connecting new runs of 4x4-inch Kbl-Duct to existing installations of 3½x3½-inch duct.

Weight, 2½ pounds.

No. 40A35.....each \$3.00

#### Conduit Couplings



A casting provided with threads for conduit and flange for bolting on the Kbl-Duct or fittings.

No. ....	40C25	40C30	40C35
Each .....	\$4.00	4.00	4.00
Duct Conduit.....inches	4 to 2½	4 to 3	4 to 3½
Weight.....pounds	1¾	1¾	1¾



## Nipples

For use where shorter connection, than is afforded by 1-foot lengths or the telescope fittings, is required.

No.	Each	Lgth. In.	Size In.
20200	\$1.50	1/2	2 1/2 x 2 1/2
20202	3.00	2	2 1/2 x 2 1/2
20203	3.00	3	2 1/2 x 2 1/2
20206	4.00	6	2 1/2 x 2 1/2
20400	1.50	1/2	4x4
20402	3.00	2	4x4
20403	3.00	3	4x4
20406	4.00	6	4x4
20600	6.00	1/2	6x6
20602	7.00	2	6x6
20603	7.50	3	6x6
20606	8.50	6	6x6

## Universal Drop Hangers

For suspending wiring trough from overhead. Provided with screws and nuts for mounting.

No.	Each	Size In.
20217	\$ .50	2 1/2 x 2 1/2
20417	.60	4x4
20617	3.00	6x6

## Universal Bracket Hangers

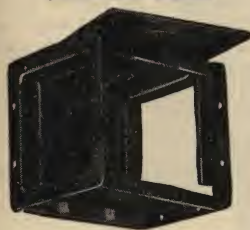
For mounting wiring trough on side wall.

No.	Each	Size In.
20227	\$ .50	2 1/2 x 2 1/2
20427	.60	4x4
20627	3.00	6x6

## Reducing Fittings

No.	Each	For Joining Duct, In.
20422	\$2.30	4x4 to 2 1/2 x 2 1/2
20622	5.00	6x6 to 4x4

## Junction Boxes



To form T, L or cross. Price includes two closing plates. Cover is removable.

No.	Each	Size In.
20248	\$2.50	2 1/2 x 2 1/2
20448	3.00	4x4
20648	11.00	6x6

## Closing Plates

For closing end of section or any side of junction box.

No.	Each	Size In.
20216	\$ .60	2 1/2 x 2 1/2
20559	.80	4x4
20659	3.00	6x6

## Square D Duct and Fittings

### Schedule A Duct



The trough is flanged at both ends so that two sections can be clamped together. Cover is hinged. Knockouts are provided in sides and back for 1/2 and 3/4-inch conduit in 2 1/2 x 2 1/2-inch duct, and 1/2, 3/4, 1 and 1 1/4-inch conduit in 4x4 and 6x6-inch duct.

No.	Each	Size Inches	Length Feet
20241	\$2.50	2 1/2 x 2 1/2	1
20242	3.00	2 1/2 x 2 1/2	2
20243	5.00	2 1/2 x 2 1/2	5
20441	4.00	4x4	1
20442	5.00	4x4	2
20443	8.00	4x4	5
20641	12.00	6x6	1
20642	16.00	6x6	2
20643	26.00	6x6	5

## Trough Collars

Used when necessary to cut standard duct.

No.	Each	Size In.
20240	\$ .60	2 1/2 x 2 1/2
20440	.80	4x4
20640	3.00	6x6

## Panel Fitting Collars

For connecting duct to panels. By cutting hole size of duct in panel box and clamping box wall between panel fitting collar and duct collar, a solid connection is made free from rough edges.

No.	Each	Size Inches
20221	\$ .60	2 1/2 x 2 1/2
20421	1.30	4x4
20621	3.00	6x6

## Telescope Fittings



Slide arrangement for making connection to duct fittings at varying distances.

No.	Each	Size Inches	Extends Inches
20244	\$3.00	2 1/2 x 2 1/2	7 1/2 to 12
20444	4.50	4x4	8 to 12
20644	36.00	6x6	8 to 12

## Elbows

### 7 1/2° Elbows

No.	Each	Size Inches
20207	\$2.00	2 1/2 x 2 1/2
20407	2.50	4x4
20607	9.00	6x6

### 22 1/2° Elbows

No.	Each	Size Inches
20255	\$3.00	2 1/2 x 2 1/2
20455	5.00	4x4
20655	16.00	6x6

### 45° Elbows

No.	Each	Size Inches
20245	\$3.00	2 1/2 x 2 1/2
20445	5.00	4x4
20645	16.00	6x6



## Box Fittings

For connecting duct to panels, pull boxes, etc. One end fits round hole duct collar.

No.	Each	Size Inches
20249	\$5.00	2 1/2 x 2 1/2
20449	5.00	4x4
*20467	5.00	4x4
*20649	36.00	6x6
*20667	36.00	6x6

\*For square hole in box or panel cabinet.



## Pull Boxes

Price includes two sides with double openings and two with single openings; does not include closing plates for unused openings.

No.	Each	Description	Size In.
20558	\$18.00	Pull Box.....	4x4
20658	63.00	Pull Box.....	6x6
20559	.80	(Closing Plate)....	4x4
20659	3.00	(Closing Plate)....	6x6
20561	3.00	(Box Side, 1 Opening)	4x4
20661	12.00	(Box Side, 1 Opening)	6x6
20562	4.00	(Box Side, 2 Opening)	4x4
20662	15.00	(Box Side, 2 Opening)	6x6

## T Fittings and Pull Boxes

No.	Each	Size In.
20471	\$11.00	4x4
20671	36.00	6x6

## 90° Elbows and Pull Boxes

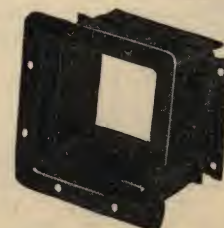
No.	Each	Size In.
20472	\$9.00	4x4
*20490	5.50	4x4
20672	28.00	6x6

\*Without hinged cover; other numbers have hinged cover as illustrated.

## T Fittings

For T connection. Cut hole inside of duct and drill holes to match holes in flange on narrow end of fitting.

No.	Each	Size In.
20247	\$3.00	2 1/2 x 2 1/2
20447	4.50	4x4
20647	16.00	6x6



Prices on Square D Duct without knockouts will be furnished on request.  
Prices on cadmium plating and other special weatherproofing finishes on Square D Duct and Fittings furnished on application.



## Typical Square-Duct Installations

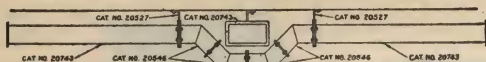


Fig. 1

Fig. 1 is a down-view showing how the use of 4 vertical elbows makes it possible to cross over or to bridge another section of wiring trough. The use of 2 of these fittings makes it possible to drop to a lower level whenever desirable. In this view, the wiring trough sections are mounted to the side wall by means of bracket hangers.

Fig. 2 illustrates the use of the telescope fitting, the drop hanger, the junction box and connecting a wiring trough section to the power panel.

By looking carefully at the bottom of the telescope fitting, you will notice a cutaway view showing how the use of the panel fitting collar provides a smooth surface over which wires can be drawn without trouble.

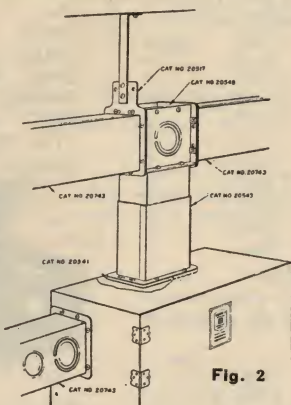


Fig. 2

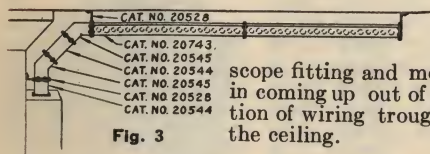


Fig. 3

Fig. 3 illustrates the use of elbows, telescope fitting and mounting brackets, in coming up out of a panel to a section of wiring trough suspended from the ceiling.

Using one of the many knockouts in the wiring trough to make a connection to a switch.

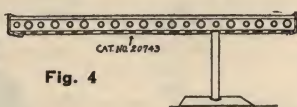


Fig. 4

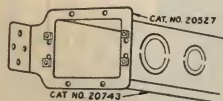


Fig. 5

Illustration shows how a bracket hanger is used to mount a section of trough to the sidewall.

Fig. 6 shows the use of the T fitting in a section of trough. The use of this fitting permits the connection to another section of trough running at right angles, to a junction box, or to make a right angle connection when the joints are not conveniently located.

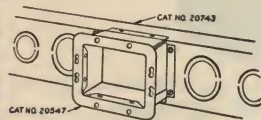


Fig. 6

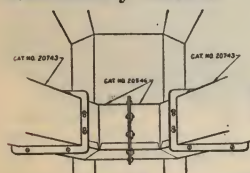


Fig. 7

Illustration shows the use of two 45° elbows, passing a column located in a corner.

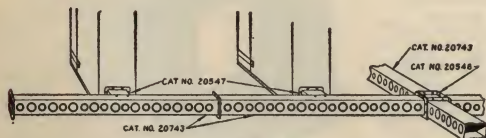


Fig. 8

Fig. 8 shows one method of using Square Duct trough to connect power panels in one common gutter. It also illustrates the use of the junction box as a cross fitting.

## Trumbull FVK Flex-A-Power Enclosed Bus Bar Distribution Systems



Types FD, FL and FCE Flex-A-Plugs Assembled on 10-Foot Length of Type FVK Flex-A-Power

Flex-A-Power, commonly known as the convenience outlet for power in industry, is provided with outlets located on both sides of the bus bar steel housing for the plugging in of Flex-A-Plugs at any desired point at 12-inch intervals, making direct connection to motor-driven machines which may be moved or relocated as required.

Standard length, 10 feet; other lengths can be furnished on request.

Amp.	Phase	BAR SIZE, INCHES Neutral	2-Pole		3-Pole		3-Phase, 4-Wire	
			No.	Each	No.	Each	No.	Each
225*	1/4x1	1/4x1	FVK-262A	\$55.	FVK-362A	\$60.	FVKN-362B	\$80.
400	3/16x2	3/16x1	FVK-264	85.	FVK-364	95.	FVKN-364A	125.
600	1/4x2	1/4x1	FVK-266	110.	FVK-366	120.	FVKN-366A	150.
800	3/16x4	23/16x1 1/2	FVK-268	165.	FVK-368	180.	FVKN-368	220.
1000	1/4x4	2 1/4x1 1/2	FVK-2610	200.	FVK-3610	220.	FVKN-3610	275.

## Cable Tap Boxes

## Joint and End-Of-Run Types

Price of cable tap boxes includes necessary bus and lugs only. Tap boxes are made standard for assembly between two standard lengths or at end of run. If tap boxes are required for assembly in special locations, an additional charge will be made.

When ordering, give number and size of proposed cables.

2-Pole					
No.	SKCB-22	SKCB-24A	SKCB-26	SKCB-210	SKCB-210
Each.	\$45.00	45.00	45.00	65.00	65.00
Amp.	225	400	600	800	1000

3-Pole					
No.	SKCB-32	SKCB-34A	SKCB-36	SKCB-310	SKCB-310
Each.	\$50.00	50.00	50.00	70.00	70.00
Amp.	225	400	600	800	1000

3-Phase, 4-Wire					
No.	SKCBN-32	SKCBN-34A	SKCBN-36	SKCBN-310	SKCBN-310
Each.	\$60.00	60.00	60.00	80.00	80.00
Amp.	250	400	600	800	1000

## End Boxes

2 and 3-Pole					
No.	SKEB-34	SKEB-36	SKEB-36	SKEB-310	SKEB-310
Each.	\$10.00	10.00	10.00	15.00	15.00
Amp.	225	400	600	800	1000

3-Phase, 4-Wire					
No.	SKEBN-34	SKEBN-36	SKEBN-36	SKEBN-310	SKEBN-310
Each.	\$10.00	10.00	10.00	15.00	15.00
Amp.	225	400	600	800	1000

\*Hollow



## Trumbull 125 Flex-A-Power Enclosed Bus Bar Distribution Systems

Schedule L-10  
575 Volts, Maximum—225 Amperes, Maximum



Cross Section View

With outlets located on bus bar steel housing for the plugging in of Flex-A-Plugs at any desired point at 12-inch intervals, making direct connection to motor-driven machines which may be moved or relocated as required.

Recommended for small industrial plants, factories, garages, repair shops, workshops and similar places.

Bar size,  $\frac{1}{4} \times \frac{5}{8}$  inch. Standard length, 10 feet. Each length furnished with two hanger clamps to permit 5-foot suspension.

No. ....	FAP22	FAP32
Each .....	\$50.00	55.00
No. of Poles .....	2	3

### Combination End and Cable Boxes

No. ....	*HEB-31	†SHEB-31	†SHEB-32
Each .....	\$20.00	20.00	20.00
Lug Size .....	2 to 1-0	2 to 1-0	2-0 to 4-0

### No. EB-32 End Boxes Only

No. EB-32 .....	each	\$7.00
-----------------	------	--------

### Plug-In Cable Tap Boxes

No. ....	HCB-31	HCB-32
Each .....	\$80.00	80.00
Lug Size .....	4 to 1-0	1-0 to 4-0

**Fittings.**—Elbows, T and X connections, flange connections, ebony end closures and transformer taps are available, information upon request.

### Type FH Fusible Flex-APlugs



No. ....	No. FH362	FH321	FH322	FH361	FH362
Each .....	\$18.00	18.00	20.00	20.00	20.00
Amperes .....	30	60	30	60	60
Hp., 3-Phase .....	3	7½	7½	120	120

### Type FHE Circuit Breaker Plugs

Amp.	No.	Each	No.	Each
15	FHE31015	\$53.00	FHE35015	\$83.00
20	FHE31020	53.00	FHE35020	83.00
25	FHE31025	53.00	FHE35025	83.00
35	FHE31035	54.00	FHE35035	87.00
50	FHE31050	54.00	FHE35050	87.00

\*For end having two outside busses extended.

†For end having center bus extended.

†Hp. given is at 460 volts a.c., hp. at 575 volts a.c. is 15.

For single-phase loads, the use of standard 3-pole plugs is recommended. Any two of the three switching poles may be wired on the job, permitting balancing of loads between phases.

## Trumbull Flex-A-Plugs

Reinforced fuse clips and solderless lugs are furnished as standard.

### Type FL Double Break Fusible Switch Plugs



### With Cam Operating Mechanism

No. ....	FL-321	FL-322	FL-323
Each .....	\$22.00	22.00	30.00
Amperes .....	30	60	100

Horsepower:			
Single-Phase .....	2	5	..
3-Phase .....	3	7½	..

### 120/208 Volts, 3-Phase, 4-Wire

No. ....	FLN-321	FLN-322	FLN-323
Each .....	\$32.00	32.00	44.00
Amperes .....	30	60	100

Horsepower, 3-Phase .....	3	7½	..
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### \*575 Volts, 3-Pole

No. ....	FL-361	FL-362	FL-363
Each .....	\$22.00	22.00	35.00
Amperes .....	30	60	100

Horsepower:			
Single-Phase .....	5	10	..
3-Phase .....	10	20	..

### Type FD Motor Circuit Switch Plugs



### \*250 Volts, 3-Pole

No. ....	FD-321	FD-322	FD-323	FD-324A	FD-325
Each .....	\$33.00	37.00	57.00	96.00	192.00
Amperes .....	30	60	100	200	400

Horsepower:					
Single-Phase .....	2	5	10	15	30
3-Phase .....	3	7½	15	30	50

### 120/208 Volts, 3-Phase, 4-Wire

No. ....	FDN-321	FDN-322	FDN-323	FDN-324A	FDN-325
Each .....	\$39.00	43.00	69.00	114.00	212.00
Amperes .....	30	60	100	200	400

Hp., 3-Ph. ....	3	7½	15	30	50
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### \*575 Volts, 3-Pole

No. ....	FD-361	FD-362	FD-363	FD-364A	FD-365
Each .....	\$33.00	37.00	63.00	108.00	219.00
Amperes .....	30	60	100	200	400

Hp., 3-Phase .....	7½	20	30	50	..
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\*For single-phase loads, the use of standard 3-pole plugs is recommended. Any two of the three switching poles may be wired on the job, permitting balancing of loads between phases.



## Type FS and FD R &amp; S Conduit Boxes



Type FS, Four-Gang

For surface mounting.

Maximum conduit, 1 inch.

Accommodates all Russell & Stoll Type FS and FD fittings.

Single-gang, 4-way; multi-gang, one outlet on one side, one per gang on opposite side and one on each end. Specify size and location when ordering.

Finish: cast iron, corrosion resisting finish; cast brass, bright dip.



Single-Gang



Tandem

## Single-Gang

Type	Cast Iron		Cast Brass		*Overall Dimensions Inches
	No.	Each	No.	Each	
FS	3701	\$1.25	3721	\$3.60	4 1/8 x 2 5/8 x 2 1/4
FD	3711	1.50	3731	4.25	4 1/8 x 2 5/8 x 2 1/8
<b>2-Gang</b>					
FS	3702	\$2.50	3722	\$7.20	4 1/8 x 5 1/2 x 2 1/4
FD	3712	3.00	3732	8.50	4 1/8 x 5 1/2 x 2 1/8
<b>3-Gang</b>					
FS	3703	\$3.75	3723	\$10.80	4 1/8 x 10 3/8 x 2 1/4
FD	3713	4.50	3733	12.75	4 1/8 x 8 1/2 x 2 1/8
<b>4-Gang</b>					
FS	3704	\$5.00	3724	\$14.40	4 1/8 x 13 1/4 x 2 1/4
FD	3714	6.00	3734	17.00	4 1/8 x 11 1/2 x 2 1/8
<b>2-Gang Tandem</b>					
FS	3715	\$2.50	3735	\$7.20	8 1/2 x 2 5/8 x 2 1/4

Adapter plates are available for flush mounting.

\*Dimensions are overall exclusive of conduit pads and mounting lugs.

## Type DSFD—Single-Gang



For surface mounting.

Will accommodate same devices as Type FS and FD boxes.

Can be tapped for two 1/2-inch or one 1 1/2-inch outlet maximum at each end.

Dimensions: 4 1/8 x 3 3/8 x 4 1/8 inches deep.

Adapter plates are available for flush mounting.

No. 3781, Cast Iron, Corrosion Resisting Finish. each \$2.50

No. 3782, Cast Brass, Bright Dip. each 7.20

No additional charge for drilling outlets when boxes are ordered as part of the complete devices. When ordering boxes only, there is an additional charge for drilling; 1/2 or 3/4-inch conduit size, 10 cents; 1-inch, 20 cents; 1 1/4-inch, 40 cents; 1 1/2-inch, 50 cents each. Specify size and location when ordering.

## Condulet Equipment

Schedule CM

For REA Rural Electrification Wiring  
VR Series Lighting Condulets



Type VRA

Type VRB

Type VRO

Type VR

Takes 100-watt lamp.

No. VRA110.....	each	\$1.50
No. VRB110.....	each	2.20
No. VRO410.....	each	1.50
No. VR10, Guard.....	each	.65

## FS Series Switches



FS Series



FSC Series

Rating Amperes	Volts	Type	FS Series		FSC Series	
			No.	Each	No.	Each
10	125	1-Pole	FS1311	\$1.65	FSC1311	\$1.72
5	250	1-Pole				
10	125	2-Pole	FS1312	2.40	FSC1312	2.47
5	250	2-Pole				
10	125	3-Pole	FS1313	1.85	FSC1313	1.93
5	250	3-Pole				
5	125	4-Way	FS1314	4.20	FSC1314	4.27
2	250	4-Way				

## FS Series Plug Receptacles with Spring Door

15 Amperes—125 Volts or 10 Amperes—250 Volts



FS Series



FSC Series

Type	FS Series		FSC Series	
	No.	Each	No.	Each
2-Wire, 2-Pole	FS1514	\$1.80	FSC1514	\$1.85
2-Wire, 3-Pole	FS1515	2.35	FSC1515	2.42
3-Wire, 3-Pole	FS1516	2.50	FSC1516	2.57

## FS Series Plug Receptacles with Threaded Cap and Chain

15 Amperes—125 Volts or 10 Amperes—250 Volts



FS Series



FSC Series

Type	FS Series		FSC Series	
	No.	Each	No.	Each
2-Wire, 2-Pole	FS1614	\$1.80	FSC1614	\$1.85
2-Wire, 3-Pole	FS1615	2.35	FSC1615	2.42
3-Wire, 3-Pole	FS1616	2.50	FSC1616	2.57



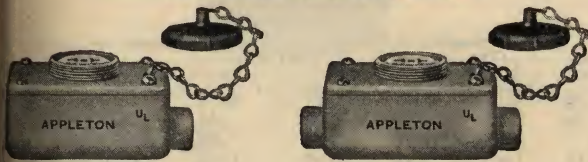
## Series REA Appleton Conduit Fittings

Schedule CFS

For Rural Electrification Wiring—Weathertight

## Outdoor Receptacle Fittings

Complete with Receptacle Cap and Chain



Type E

Type C

Will take standard attachment plug caps, 15 amperes, 125 volt or 10 amperes, 250 volt. Packed 1 to a carton.

## Type E—One ½-Inch Hub

No.	Style	AMPERES		Wt. Lb.
		125 V.	250 V.	
REA-4	2-Wire, 2-Pole	15	10	2 11/16
REA-5	2-Wire, 3-Pole	15	10	2 11/16
REA-6	3-Wire, 3-Pole	15	10	2 11/16

## Type C—Two ½-Inch Hubs

REA-7	2-Wire, 2-Pole	15	10	2 3/4
REA-8	2-Wire, 3-Pole	15	10	2 3/4
REA-9	3-Wire, 3-Pole	15	10	2 3/4

## Outdoor Receptacle Fittings

Complete with Receptacle and Lift Cover



Type E

Type C

Will take standard attachment plug caps, 15 amperes, 125 volt or 10 amperes, 250 volt. Packed 1 to a carton.

## Type E—One ½-Inch Hub

No.	Style	AMPERES		Wt. Lb.
		125 V.	250 V.	
REA-44	2-Wire, 2-Pole	15	10	2 15/16
REA-45	2-Wire, 3-Pole	15	10	2 15/16
REA-46	3-Wire, 3-Pole	15	10	2 15/16

## Type C—Two ½-Inch Hubs

REA-47	2-Wire, 2-Pole	15	10	3
REA-48	2-Wire, 3-Pole	15	10	3
REA-49	3-Wire, 3-Pole	15	10	3

## Outdoor Switch Fittings

Complete With Switches

All Switches Except Double Pole are "T" Rated



Type E

Type C

Packed 1 to a carton.

## Type E—One ½-Inch Hub

No.	Style	AMPERES		Wt. Lb.
		125 V.	250 V.	
REA-10	Single Pole	10	5	1 1/8
REA-11	Double Pole	..	10	1 1/8
REA-12	Three Way	10	5	1 1/8
REA-13	Four Way	10	5	1 1/8

## Type C—Two ½-Inch Hubs

REA-14	Single Pole	10	5	1 3/16
REA-15	Double Pole	..	10	1 3/16
REA-16	Three Way	10	5	1 3/16
REA-17	Four Way	10	5	1 3/16

## Series REA Appleton Conduit Fittings

Schedule CFS

For Rural Electrification Wiring—Weathertight  
Lightweight Lighting Fixtures  
With Clear Globe—No Guard

## Type RVA



No. REA-1

Hub at top tapped for ½-inch rigid conduit (heavy wall).

Watts, 100. Packed 1 to a carton; weight, 3 lb.

## Type ROB



No. REA-2

With 4-inch square or 3 1/4 and 4-inch octagonal outlet boxes.

Watts, 100. Packed 1 to a carton; weight, 3 lb.

## Type RBVA

No. REA-20  
Clear Globe

With bracket for mounting on 3/4 or 4-inch octagonal outlet boxes. Screw holes for 4-inch octagonal box and fastening strap for 3/4-inch octagonal box.

Watts, 100. Packed 1 to a carton; weight, 4 lb.

## Wire Guard



No. REA-33

For types RVA, RBVA, and ROB lighting fixtures.

Watts, 100. Packed 1 to a carton; weight, 1 1/4 lb.



No. REA-3

For types RVA, RBVA, and ROB lighting fixtures.

Watts, 100. Packed 1 to a carton; weight, 3 lb.

## \*Standard Dome Reflector and Holder

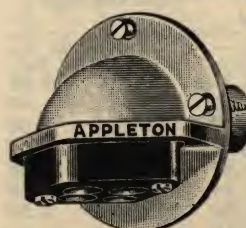


No. REA-21

For Nos. REA-1 and REA-2. Watts, 100. Packed 1 to a carton; weight, 4 lb.

\*When reflector is used, reflector holder clamps onto Types RVA and ROB lighting fixtures and guard cannot be used.

## Type FEH Flange Type Entrance Fittings.



No.

REA-25. Without DuxSeal Compound. . . . . 20

REA-26. With DuxSeal Compound. . . . . 21

Combination entrance cap and flange for out building service entrances in accordance with REA specifications. Made of aluminum and cannot rust. Insulator has four holes, two of which are plugged. Hub in back is tapped for ½-inch conduit. Furnished with hot galvanized wood screws.

Standard package, 24; carton, 1.

Description Wt. Lb. Std. Pkg.



**Crouse-Hinds Condulets**

**Discount Schedule.** Unless otherwise specified, Condulets carry Crouse-Hinds CR Schedule of terms and discounts.

**Material.** Unless otherwise indicated, all Condulets are made of Feraloy, a special Crouse-Hinds alloy. Feraloy is a special alloy having the desirable characteristics of both cast steel and gray iron, and possesses high tensile strength and unusual resistance to corrosion.

**Finish.** Unless otherwise indicated, the standard finish is cadmium-galvanized.

Available in a wide range of sizes for every need and purpose.

**Obround Series Condulets**

Form 7

Obround Condulets of the same size take the same covers and wiring devices.

**Type A**

Size In.	Threaded Thick Wall		Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	A17	\$ .30	A197	\$ .35	A17-MT	\$ .35
3/4	A27	.35	A297	.45	A27-MT	.45
1	A37	.50	A397	.60	A37-MT	.60
1 1/4	A47	.80	A497	1.10	A47-MT	1.10
1 1/2	A57	1.04	A597	1.50	A57-MT	1.50
2	A67	2.14	A697	2.75	A67-MT	2.75
2 1/2	A77	4.20	A797	5.50	.....	.....
3	A87	5.00	A897	6.50	.....	.....
3 1/2	A97	7.00	A997	10.00	.....	.....
4	A107	9.00	A1097	12.00	.....	.....

**Type C**

Size In.	Threaded Thick Wall		Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	C17	\$ .40	C197	\$ .50	C17-MT	\$ .50
3/4	C27	.45	C297	.60	C27-MT	.60
1	C37	.65	C397	.90	C37-MT	.90
1 1/4	C47	1.05	C497	1.50	C47-MT	1.50
1 1/2	C57	1.40	C597	2.10	C57-MT	2.10
2	C67	2.40	C697	3.50	C67-MT	3.50
2 1/2	C77	5.00	C797	7.00	.....	.....
3	C87	6.50	C897	9.00	.....	.....
3 1/2	C97	10.50	C997	14.00	.....	.....
4	C107	12.00	C1097	16.50	.....	.....

**Type B**

One-Piece Body

Two-Piece Body

Size In.	Threaded Thick Wall		Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	B17	\$ .30	B197	\$ .35	B17-MT	\$ .35
3/4	B27	.35	B297	.45	B27-MT	.45
1	B37	.50	B397	.60	B37-MT	.60
1 1/4	B47	\$1.25	B497	\$1.48	B47-MT	\$1.48
1 1/2	B57	1.50	B597	1.84	B57-MT	1.84
2	B67	2.60	B697	3.20	B67-MT	3.20
2 1/2	B77	8.15	B797	9.15	.....	.....
3	B87	9.00	B897	10.30	.....	.....
3 1/2	B97	15.25	B997	17.00	.....	.....
4	B107	17.00	B1097	19.25	.....	.....

**Obround Series Condulets**

Obround Condulets of the same size take the same covers and wiring devices.

**Type E**

Size In.	Threaded Thick Wall		Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	E17	\$ .30	E197	\$ .35	E17-MT	\$ .35
3/4	E27	.35	E297	.45	E27-MT	.45
1	E37	.50	E397	.60	E37-MT	.60
1 1/4	E47	.80	E497	1.10	E47-MT	1.10
1 1/2	E57	1.04	E597	1.50	E57-MT	1.50
2	E67	2.14	E697	2.75	E67-MT	2.75
2 1/2	E77	4.20	E797	5.50	.....	.....
3	E87	5.00	E897	6.50	.....	.....
3 1/2	E97	7.00	E997	10.00	.....	.....
4	E107	9.00	E1097	12.00	.....	.....

**Type F**

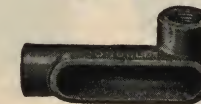
Type F is not furnished in the threadless.

**Threaded—Thick Wall**

Size In.	No.	Each
1/2	F17	\$ .50
3/4	F27	.80
1	F37	1.25
1 1/4	F47	2.20
1 1/2	F57	3.25
2	F67	5.00
2 1/2	F77	8.20
3	F87	10.20
3 1/2	F97	18.10
4	F107	25.00
4 1/2	F0117	32.00
5	F0127	40.00
6	F0147	50.00

**Type LB**

Size In.	Threaded Thick Wall		Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
1/8	LB187	\$ .30	.....	.....	.....	.....
1/4	LB287	.30	.....	.....	.....	.....
3/8	LB387	.35	.....	.....	.....	.....
1/2	LB17	.40	LB197	\$ .50	LB17-MT	\$ .50
3/4	LB27	.45	LB297	.60	LB27-MT	.60
1	LB37	.65	LB397	.90	LB37-MT	.90
1 1/4	LB47	1.05	LB497	1.50	LB47-MT	1.50
1 1/2	LB57	1.40	LB597	2.10	LB57-MT	2.10
2	LB67	2.40	LB697	3.50	LB67-MT	3.50
2 1/2	LB777	5.00	LB797	7.00	.....	.....
3	LB87	6.50	LB897	9.00	.....	.....
3 1/2	LB97	10.50	LB997	14.00	.....	.....
4	LB107	12.00	LB1097	16.50	.....	.....

**Type LR**

Size In.	No.	Each	No.	Each	No.	Each
1/8	LR187	\$ .30	.....	.....	.....	.....
1/4	LR287	.30	.....	.....	.....	.....
3/8	LR387	.35	.....	.....	.....	.....
1/2	LR17	.40	LR197	\$ .50	LR17-MT	\$ .50
3/4	LR27	.45	LR297	.60	LR27-MT	.60
1	LR37	.65	LR397	.90	LR37-MT	.90
1 1/4	LR47	1.05	LR497	1.50	LR47-MT	1.50
1 1/2	LR57	1.40	LR597	2.10	LR57-MT	2.10
2	LR67	2.40	LR697	3.50	LR67-MT	3.50
2 1/2	LR777	5.00	LR797	7.00	.....	.....
3	LR87	6.50	LR897	9.00	.....	.....
3 1/2	LR97	10.50	LR997	14.00	.....	.....
4	LR107	12.00	LR1097	16.50	.....	.....



## Obround Series Condulets

Obround Condulets of the same size take the same covers and wiring devices.

## Type LL



Size In.	Threaded Thick Wall		Threadless		Thin Wall	
	No.	Each	No.	Each	No.	Each
1/8	LL187	\$ .30	.....	.....	.....	.....
1/4	LL287	.30	.....	.....	.....	.....
3/8	LL387	.35	.....	.....	.....	.....
1/2	LL17	.40	LL197	\$ .50	LL17-MT	\$ .50
3/4	LL27	.45	LL297	.60	LL27-MT	.60
1	LL37	.65	LL397	.90	LL37-MT	.90
1 1/4	LL47	1.05	LL497	1.50	LL47-MT	1.50
1 1/2	LL57	1.40	LL597	2.10	LL57-MT	2.10
2	LL67	2.40	LL697	3.50	LL67-MT	3.50
2 1/2	LL777	5.00	LL797	7.00	.....	.....
3	LL87	6.50	LL897	9.00	.....	.....
3 1/2	LL97	10.50	LL997	14.00	.....	.....
4	LL107	12.00	LL1097	16.50	.....	.....

## Type LF



Size In.	Threaded Thick Wall		Threadless		Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	LF17	\$ .40	LF197	\$ .50	LF17-MT	\$ .50
3/4	LF27	.45	LF297	.60	LF27-MT	.60
1	LF37	.65	LF397	.90	LF37-MT	.90
1 1/4	LF47	1.05	LF497	1.50	LF47-MT	1.50
1 1/2	LF57	1.40	LF597	2.10	LF57-MT	2.10
2	LF67	2.40	LF697	3.50	LF67-MT	3.50
2 1/2	LF777	5.00	.....	.....	.....	.....
3	LF87	6.50	.....	.....	.....	.....
3 1/2	LF97	10.50	.....	.....	.....	.....
4	LF107	12.00	.....	.....	.....	.....

## Type L



Type L is a double-faced Condulet which may be used either as an LL or LR Condulet. It has two openings, one of which is furnished with a blank sheet steel cover.

Size In.	Threaded Thick Wall		Threadless		Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	L17	\$ .40	L197	\$ .50	L17-MT	\$ .50
3/4	L27	.45	L297	.60	L27-MT	.60
1	L37	.65	L397	.90	L37-MT	.90
1 1/4	L47	1.05	L497	1.50	L47-MT	1.50
1 1/2	L57	1.40	L597	2.10	L57-MT	2.10
2	L67	2.40	L697	3.50	L67-MT	3.50

## Type LBD



For use when it is necessary to make a 90° bend in the conduit system. Condulet is split, permitting a straight pull on the wires. Furnished with blank cast Feraloy cover.

Size In.	No.		Size In.	No.	
	No.	Each		No.	Each
1/2	LBD1100	\$ .65	3	LBD8800	\$14.25
3/4	LBD2200	.80	3 1/2	LBD9900	23.25
1	LBD3300	1.20	4	LBD10900	26.00
1 1/4	LBD4400	3.25	4 1/2	LBD011	35.00
1 1/2	LBD5500	5.75	5	LBD012	40.00
2	LBD6600	6.25	6	LBD014	75.00
2 1/2	LBD7700	11.75	.....	.....	.....

## Obround Series Condulets

Obround Condulets of the same size take the same covers and wiring devices.

Size of cover or wiring device is the same as size of hubs at ends of cover opening.

## Type T



Size Inches	Threaded Thick Wall		Threadless		Thin Wall	
	No.	Each	No.	Each	No.	Each
1/8	T187	\$ .33	.....	.....	.....	.....
1/4	T287	.33	.....	.....	.....	.....
3/8	T387	.40	.....	.....	.....	.....
1/2	T17	.48	T197	\$ .65	T17-MT	\$ .65
3/4	T127	.56	.....	.....	.....	.....
1	T137	.63	.....	.....	.....	.....
1 1/2	T217	.57	T2197	.84	T217-MT	.84
2	T27	.57	T297	.80	T 27-MT	.80
2 1/2	T237	.65	.....	.....	.....	.....
3	T257	.90	.....	.....	.....	.....
3 1/2	T317	.80	T3197	1.19	T317-MT	1.19
4	T327	.80	T3297	1.19	T327-MT	1.19
4 1/2	T37	.80	T397	1.10	T 37-MT	1.10
5	T367	1.45	.....	.....	.....	.....
5 1/2	T417	1.22	T4197	1.91	T417-MT	1.91
6	T427	1.22	T4297	1.91	T427-MT	1.91
6 1/2	T437	1.22	T4397	1.91	T437-MT	1.91
7	T47	1.22	T497	1.90	T 47-MT	1.90
7 1/2	T457	1.50	.....	.....	.....	.....
8	T467	1.96	.....	.....	.....	.....
8 1/2	T517	1.69	.....	.....	.....	.....
9	T527	1.69	.....	.....	.....	.....
9 1/2	T537	1.69	.....	.....	.....	.....
10	T547	1.69	.....	.....	.....	.....
10 1/2	T57	1.69	T597	2.70	T 57-MT	2.70
11	T567	2.52	.....	.....	.....	.....
11 1/2	T617	2.55	.....	.....	.....	.....
12	T627	2.55	.....	.....	.....	.....
12 1/2	T637	2.55	.....	.....	.....	.....
13	T647	2.55	.....	.....	.....	.....
13 1/2	T657	2.55	.....	.....	.....	.....
14	T67	2.55	T697	4.30	T 67-MT	4.30
14 1/2	T7577	5.00	.....	.....	.....	.....
15	T7677	5.00	.....	.....	.....	.....
15 1/2	T77	5.00	T797	8.00	.....	.....
16	T867	7.50	.....	.....	.....	.....
16 1/2	T87	7.50	T897	11.00	.....	.....
17	T977	11.00	.....	.....	.....	.....
17 1/2	T97	11.00	T997	16.00	.....	.....
18	T107	13.00	T10097	19.00	.....	.....

## Type TB



Size Inches	Threaded Thick Wall		Threadless		Thin Wall	
	No.	Each	No.	Each	No.	Each
1/8	TB187	\$ .33	.....	.....	.....	.....
1/4	TB287	.33	.....	.....	.....	.....
3/8	TB387	.40	.....	.....	.....	.....
1/2	TB17	.48	TB197	\$ .65	TB17-MT	\$ .65
3/4	TB27	.57	TB297	.80	TB27-MT	.80
1	TB237	.65	.....	.....	.....	.....
1 1/2	TB317	.80	.....	.....	.....	.....
2	TB327	.80	.....	.....	.....	.....
2 1/2	TB37	.80	TB397	1.10	TB37-MT	1.10
3	TB47	1.22	TB497	1.90	TB47-MT	1.90
3 1/2	TB57	1.69	TB597	2.70	TB57-MT	2.70
4	TB67	2.55	TB697	4.30	TB67-MT	4.30
4 1/2	TB77	5.00	TB797	8.00	.....	.....
5	TB87	7.50	TB897	11.00	.....	.....
5 1/2	TB97	11.00	TB997	16.00	.....	.....
6	TB107	13.00	TB10097	19.00	.....	.....

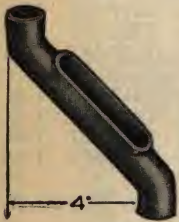


**Obround Series Condulets**

Obround Condulets of the same size take the same covers and wiring devices.

**Type U**

Size A-B-C	Threaded Thick Wall		Threadless			
	No.	Each	Thick Wall No.	Each	Thin Wall No.	Each
1/8	U187	\$ .33	.....	.....	.....	.....
1/4	U287	.33	.....	.....	.....	.....
3/8	U387	.40	.....	.....	.....	.....
1/2	U17	.48	U197	\$ .58	U17-MT	\$ .58
3/4	U27	.54	U297	.72	U27-MT	.72
1	U37	.78	U397	1.04	U37-MT	1.04
1 1/4	U47	1.26	U497	1.72	U47-MT	1.72
1 1/2	U57	1.68	U597	2.36	U57-MT	2.36
2	U67	3.00	U697	4.20	U67-MT	4.20
2 1/2	U777	6.00	.....	.....	.....	.....
3	U87	7.80	.....	.....	.....	.....
3 1/2	U97	12.60	.....	.....	.....	.....

**Type CO**

Type CO Condulet provides an offset of 4 inches in a conduit system.

Size In.	Threaded Thick Wall		Threadless			
	No.	Each	Thick Wall No.	Each	Thin Wall No.	Each
1/2	CO17	\$ .50	CO197	\$ .60	CO17-MT	\$ .60
3/4	CO27	.65	CO297	.83	CO27-MT	.83
1	CO37	.75	CO397	1.01	CO37-MT	1.01
1 1/4	CO47	1.25	CO497	1.71	CO47-MT	1.71
1 1/2	CO57	1.60	CO597	2.28	CO57-MT	2.28
2	CO67	3.25	CO697	4.45	CO67-MT	4.45
2 1/2	CO777	5.20	.....	.....	.....	.....
3	CO87	7.90	.....	.....	.....	.....
3 1/2	CO97	12.60	.....	.....	.....	.....
4	CO107	13.80	.....	.....	.....	.....

**Type COV**

Type COV Condulets connected by a nipple of suitable length form a convenient cross-over for two or more pipes or conduits.



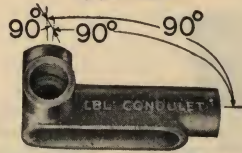
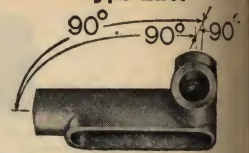
Size In.	Pipe Crossed In.	Threaded Thick Wall		Threadless			
		No.	Each	Thick Wall No.	Each	Thin Wall No.	Each
1/2	1 1/4	COV147	\$ .50	.....	.....	.....	.....
3/4	1 1/4	COV247	.65	.....	.....	.....	.....
1	1 1/4	COV347	.75	.....	.....	.....	.....
1 1/4	1 1/2	COV457	1.25	.....	.....	.....	.....
1 1/2	2	COV567	1.60	.....	.....	.....	.....
2	2 1/2	COV677	3.25	.....	.....	.....	.....
2 1/2	3 1/2	Use CO777	.....	.....	.....	.....	.....
3	3 1/2	Use CO87	.....	.....	.....	.....	.....
3 1/2	3 1/2	Use CO97	.....	.....	.....	.....	.....
4	3 1/2	Use CO107	.....	.....	.....	.....	.....

**Type CUB**

Size In.	Size In.	No.	Each	.....	.....	.....	.....
1/2	3/4	CUB127	\$ .75	.....	.....	.....	.....
1/2	1 1/4	CUB147	.85	.....	.....	.....	.....
3/4	1 1/4	CUB247	.95	.....	.....	.....	.....
1	1 1/4	CUB347	1.40	.....	.....	.....	.....
1 1/4	1 1/2	CUB457	1.90	.....	.....	.....	.....
1 1/2	2	CUB567	2.40	.....	.....	.....	.....
2	2 1/2	CUB677	4.80	.....	.....	.....	.....

**Obround Series Condulets**

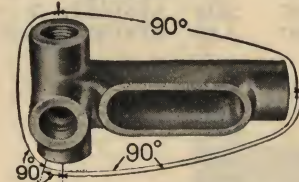
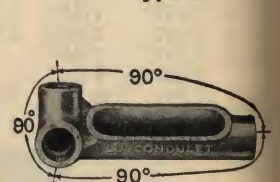
Obround Condulets of the same size take the same covers and wiring devices.

**Type LBL****Type LBR**

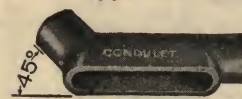
Size In.	Threaded Thick Wall		Threadless Thin Wall		Threaded Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each	No.	Each
1/2	LBL17	\$ .65	LBL17-MT	\$ .80	LBR17	\$ .65	LBR17-MT	\$ .80
3/4	LBL27	.80	LBL27-MT	1.07	LBR27	.80	LBR27-MT	1.07
1	LBL37	.95	LBL37-MT	1.34	LBR37	.95	LBR37-MT	1.34
1 1/4	LBL47	1.25	LBL47-MT	2.15	LBR47	1.25	LBR47-MT	2.15
1 1/2	LBL57	2.00	LBL57-MT	2.35	LBR57	2.00	LBR57-MT	3.35
2	LBL67	2.65	LBL67-MT	4.45	LBR67	2.65	LBR67-MT	4.45
2 1/2	LBL77	6.55	.....	.....	LBR77	6.55	.....	.....

**Type TA****Type XA**

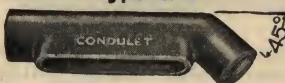
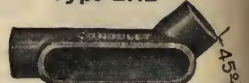
Size In.	No.	Each	.....	No.	Each	.....	No.	Each	.....	No.	Each
1/2	TA17	\$ .70	TA17-MT	\$ .90	XA17	\$1.00	XA17-MT	\$1.25			
3/4	TA27	.75	TA27-MT	1.11	XA27	1.15	XA27-MT	1.65			
1	TA37	1.00	TA37-MT	1.52	XA37	1.45	XA37-MT	2.20			
1 1/4	TA47	1.55	TA47-MT	2.75	.....	.....	.....	.....			
1 1/2	TA57	2.30	TA57-MT	4.10	.....	.....	.....	.....			
2	TA67	3.95	TA67-MT	6.35	.....	.....	.....	.....			

**Type LFT****Type LU**

Size In.	No.	Each	.....	No.	Each	.....	No.	Each	.....	No.	Each
1/2	LFT17	\$1.05	LFT17-MT	\$1.25	LU17	\$ .65	LU17-MT	\$ .80			
3/4	LFT27	1.15	LFT27-MT	1.55	LU27	.80	LU27-MT	1.10			
1	LFT37	1.30	LFT37-MT	1.90	LU37	.95	LU37-MT	1.40			

**Type LBB****Type LLB**

Size In.	Threaded Thick Wall		Threaded Thick Wall	
	No.	Each	No.	Each
1/2	LBB17	\$ .40	LLB17	\$ .40
3/4	LBB27	.45	LLB27	.45
1	LBB37	.65	LLB37	.65
1 1/4	LBB47	1.05	LLB47	1.05
1 1/2	LBB57	1.40	LLB57	1.40
2	LBB67	2.50	LLB67	2.50
2 1/2	LBB777	5.00	LLB777	5.00
3	LBB87	6.50	LLB87	6.50
3 1/2	LBB97	10.50	LLB97	10.50
4	LBB107	12.00	LLB107	12.00

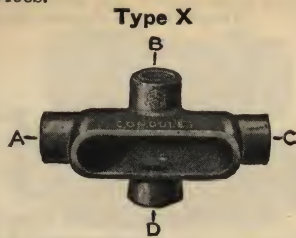
**Type LFB****Type LRB**

Size In.	No.	Each	.....	No.	Each	.....	No.	Each	.....	No.	Each
1/2	LFB17	\$ .40		1/2	LRB17	\$ .40					
3/4	LFB27	.45		3/4	LRB27	.45					
1	LFB37	.65		1	LRB37	.65					
1 1/4	LFB47	1.05		1 1/4	LRB47	1.05					
1 1/2	LFB57	1.40		1 1/2	LRB57	1.40					
2	LFB67	2.50		2	LRB67	2.50					
2 1/2	LFB777	5.00		2 1/2	LRB777	5.00					
3	LFB87	6.50		3	LRB87	6.50					
3 1/2	LFB97	10.50		3 1/2	LRB97	10.50					
4	LFB107	12.00		.....	.....	.....					



## Obround Series Condulets

Obround Condulets of the same size take the same covers and wiring devices.



The size of the cover or wiring device for a Type X Condulet is the same as the size of the hubs at the ends of the cover opening.

Sizes of hubs are indicated by sequence of letters.

Size Inches				Threaded		Threadless		
A	B	C	D	No.	Each	No.	Each	
1/2	1/2	1/2	1/2	X17	\$ .60	X197	X17-MT	\$ .80
3/4	1/2	1/2	1/2	X21117	.77	.....	X21117-MT	1.02
3/4	1/2	3/4	1/2	X217	.77	.....	X217-MT	1.07
3/4	3/4	3/4	3/4	X27	.77	X297	X27-MT	1.10
1	1/2	1	1/2	X317	1.05	X3197	X317-MT	1.57
1	3/4	1	3/4	X327	1.05	.....	X327-MT	1.55
1	1	1	1	X37	1.05	X397	X27-MT	1.50
1 1/4	1/2	1 1/4	1/2	X417	1.40	.....	X417-MT	2.10
1 1/4	3/4	1 1/4	3/4	X427	1.40	.....	X427-MT	2.20
1 1/4	1 1/4	1 1/4	1 1/4	X47	1.40	X497	X47-MT	2.30
1 1/2	3/4	1 1/2	3/4	X527	1.78	.....	X527-MT	2.88
1 1/2	1 1/2	1 1/2	1 1/2	X57	1.78	X597	X57-MT	3.10
2	2	2	2	X67	3.50	X697	X67-MT	5.50
2 1/2	2 1/2	2 1/2	2 1/2	X77	6.00	.....	.....	.....
3	3	3	3	X87	10.00	.....	.....	.....

## Covers for Obround Series Condulets

## Standard Porcelain or Composition Covers

		5-Wire Standard			
Size In.	Diam. Hole In.	Porcelain No.	Each	Composition No.	Each
3/4	5/16	275	\$ .15	2775	\$ .15
1	13/32	375	.25	3775	.25
1 1/4	17/32	475	.36	4775	.50
1 1/2	5/8	575	.36	5775	.50
2	13/16	675	.60	6775	.60
2 1/2, 3	1 1/16	875	.80	8775	1.60
3 1/2, 4	1 1/2	...	...	9775	2.50
4 1/2, 5, 6	1 5/8	...	...	14775	4.00

		6-Wire			
Size In.	Diam. Hole In.	Porcelain No.	Each	Composition No.	Each
3/4	5/16	276	\$ .15	2776	\$ .15
1	3/8	376	.25	3776	.25
1 1/4	1/2	476	.36	4776	.50
1 1/2	17/32	576	.36	5776	.50
2	5/8	676	.60	6776	.60
2 1/2, 3	7/8	876	.80	8776	1.60
3 1/2, 4	1 1/8	...	...	9776	2.50
4 1/2, 5, 6	1 1/16	...	...	14776	4.00

## Blank Composition Covers

Special drilling at slight additional charge: up to 1/2" diam., 5 cents per hole; over 1/2", less than 1", 15 cents per hole; 1" and over, 20 cents per hole.

Size In.	Porcelain No.	Each	Composition No.	Each
1/8	...	...	18770	\$ .20
1/4	...	...	28770	.20
3/8	...	...	38770	.20
1/2	...	...	1770	.10
3/4	...	...	2770	.15
1	...	...	3770	.25
1 1/4	...	...	4770	.50
1 1/2	...	...	5770	.50
2	...	...	6770	.60
2 1/2, 3	...	...	8770	1.60
3 1/2, 4	...	...	9770	2.50
4 1/2, 5, 6	...	...	14770	4.00

## Covers for Obround Series Condulets

## Standard Porcelain or Composition Covers

		1-Wire Standard			
Size In.	Diam. Hole In.	Porcelain No.	Each	Composition No.	Each
1/2	3/16	171 and 1771	Use 1773		
3/4	1/16	271 and 2771	Use 2773		
1	1/16	371 and 3771	Use 3773		
1 1/4	3/16	471	\$ .36	4771	\$ .50
1 1/2	13/8	571	.36	5771	.50
2	13/4	671	.60	6771	.60
2 1/2, 3	2 3/16	871	.80	8771	1.60
3 1/2, 4	3 1/4	971	.90	9771	2.50
4 1/2, 5, 6	3 1/4	...	...	14771	4.00

		2-Wire			
Size In.	Diam. Hole In.	Porcelain No.	Each	Composition No.	Each
1/2	3/8	172 and 1772	Use 1773		
3/4	15/32	272 and 2772	Use 2773		
1	1/2	372 and 3772	Use 3773		
1 1/4	11/16	472	\$ .36	4772	\$ .50
1 1/2	13/16	572	.36	5772	.50
2	1	672	.60	6772	.60
2 1/2, 3	1 1/16	872	.80	8772	1.60
3 1/2, 4	1 15/16	972	.90	9772	2.50
4 1/2, 5, 6	2 1/4	...	...	14772	4.00

		3-Wire			
Size In.	Diam. Hole In.	Porcelain No.	Each	Composition No.	Each
1/2	3/8	173	Use 1773		\$ .10
3/4	15/32	273	Use 2773		.15
1	1/2	373	Use 3773		.25
1 1/4	11/16	473	.36	4773	.50
1 1/2	13/16	573	.36	5773	.50
2	1	673	.60	6773	.60
2 1/2, 3	1 1/16	873	.80	8773	1.60
3 1/2, 4	1 15/16	973	.90	9773	2.50
4 1/2, 5, 6	2 1/4	...	...	14773	4.00

		4-Wire			
Size In.	Diam. Hole In.	Porcelain No.	Each	Composition No.	Each
1/2	5/16	174	\$ .10	1774	\$ .10
3/4	5/16	274	.15	2774	.15
1	13/32	374	.25	3774	.25
1 1/4	17/32	474	.36	4774	.50
1 1/2	5/8	574	.36	5774	.50
2	1	674	.60	6774	.60
2 1/2, 3	1 1/16	874	.80	8774	1.60
3 1/2, 4	1 15/16	974	.90	9774	2.50
4 1/2, 5, 6	1 7/8	...	...	14774	4.00

## Blank Metal Covers

Size In.	Sheet Steel No.	Each	Cast Feraloy No.	Each
1/8	1870	\$ .06	...	...
1/4	2870	.06	...	...
3/8	3870	.06	...	...
1/2	170	.06	170f	\$ .16
3/4	270	.08	270f	.22
1	370	.17	370f	.35
1 1/4	470	.24	470f	.50
1 1/2	570	.24	570f	.50
2	670	.42	670f	.70
2 1/2, 3	870	.56	870f	.75
3 1/2, 4	970	.60	970f	.80

## Cast Feraloy Covers with Nipples

		With 1/4-Inch Nipple			
		Male		Female	
Size In.	No.	Each	No.	Each	
1/2	1721	\$ .20	1731	\$ .20	
3/4	2721	.25	2731	.25	
1	3721	.35	3731	.35	
		With 3/4-Inch Nipple			
Size In.	No.	Each	No.	Each	
1/2	1722	\$ .23	1732	\$ .23	
3/4	2722	.28	2732	.28	
1	3722	.38	3732	.38	
		With 1-Inch Nipple			
Size In.	No.	Each	No.	Each	
1/2	1723	\$ .25	1733	\$ .25	
3/4	2723	.30	2733	.30	
1	3723	.40	3733	.40	
		With 1 1/2-Inch Nipple			
Size In.	No.	Each	No.	Each	
1/2	1724	\$ .30	1734	\$ .30	
3/4	2724	.35	2734	.35	
1	3724	.45	3734	.45	
1 1/4	4724	.56	4734	.56	
1 1/2	5724	.56	5734	.56	



## Covers for Obround Series Condulets

## Sheet Steel Covers with Cord Clamps

Provided with cord clamp and bushed hole which safeguards the drop cord. Takes cord  $\frac{1}{4}$  to  $\frac{3}{8}$ -inch diameter.

Size In.	No.	Each
$\frac{1}{2}$	1972	\$ .30
$\frac{3}{4}$	2972	.35

## Porcelain Covers

For Drop Cords and Fixture Pull Switches

With 1-wire hole and  $\frac{1}{8}$ -inch male nipple.

Size In.	Diam. Hole In.	No.	Each
$\frac{1}{2}$	$\frac{13}{32}$	1782	\$ .35
$\frac{3}{4}$	$\frac{13}{32}$	2782	.40

## For Weatherproof Sockets—2-Wire

Size In.	Diam. Hole In.	No.	Each
$\frac{1}{2}$	$\frac{5}{16}$	1781	\$ .16
$\frac{3}{4}$	$\frac{5}{16}$	2781	.25

## Aluminum Covers

Takes P&S-Despard, Bryant IL, Hubbell, Arrow-H&H TS and G-E TS wiring devices. Mounting bridge required to install wiring device; furnished with each cover listed below.

Without Guard			
Size In.	No.	Each	
$\frac{1}{2}$	1755	\$ .20	
$\frac{3}{4}$	2755	.30	

With Guard			
Size In.	No.	Each	
$\frac{1}{2}$	1785	\$ .20	

For switches only.






## Vaportight Switch Covers

With gasket and mounting strap for switches. Takes P&S-Despard, Bryant IL and Hubbell tumbler switches.


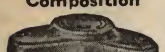
Size In.	No.	Each
$\frac{1}{2}$	1766	\$1.40
$\frac{3}{4}$	2766	1.50
1	3766	1.60

## Wiring Devices for Obround Series Condulets

## 2-Pole Attachment Plug Receptacles

		15 Amperes, 125 Volts or 10 Amperes, 250 Volts Single, with Double T Slots						
<b>Composition</b>		Size In.	Composition			Porcelain		
			No.	Each	No.	Each		
			$\frac{1}{2}$	1715	\$ .40	1705	\$ .60	
			$\frac{3}{4}$	2715	.45	2705	.70	
<b>Porcelain</b>		1	3715	.70	3705	.90		
			<b>Duplex, with Parallel Slots</b>					
			$\frac{1}{2}$	1748	\$ .60	....	....	
			$\frac{3}{4}$	2748	.70	....	....	
<b>Composition</b>		1	3748	.90	....	....		
			<b>Duplex, with Double T Slots</b>					
			$\frac{1}{2}$	1725	\$ .60	....	....	
			$\frac{3}{4}$	2725	.70	....	....	
<b>Porcelain</b>		1	3725	.90	....	....		

## 2-Pole Polarity Plug Receptacles

		15 Amperes, 125 Volts or 10 Amperes, 250 Volts			
Composition	Size	Composition		Porcelain	
	In.	No.	Each	No.	Each
	1/2	*1728	\$ .40	*1708	\$ .60
Composition	3/4	*2728	.45	*2708	.70
	1	*3728	.70	*3708	.90
		20 Amperes, 250 Volts			
	1/2	1738	\$ .55	1718	\$ .70
	3/4	2738	.60	2718	.80
Porcelain	1	3738	.85	3718	1.00

\*Takes Hubbell No. 5567 polarized plug. For parallel blade polarity plugs, use Nos. 1705, 1715, 1725, 2705, 2715, 2725, 3705, 3715, and 3725 receptacles.

Prices listed for receptacles listed above do not include attachment plugs.

If specified, lamp receptacle with lamp grip will be furnished at an advance in price of 10 cents.

## Wiring Devices for Obround Series Condulets

3-Pole Attachment Plug Receptacles  
3-Wire

Size In.	Composition	No.	Each	Porcelain	No.	Each
$\frac{1}{2}$		1709	\$ .75			
$\frac{3}{4}$		2709	.80			



Porcelain  
3-Wire

Size In.	Composition	No.	Each	Porcelain	No.	Each
$\frac{1}{2}$		1719	\$ .90			
$\frac{3}{4}$		2719	1.00			

## 2-Wire, Extra Pole Grounded

15 Amperes, 125 Volts or 10 Amperes, 250 Volts					
Size In.	Composition		Porcelain		
	No.	Each	No.	Each	
1/2	....	....	1729	\$ .85	
3/4	....	....	2729	.90	

20 Amperes, 250 Volts					
Size In.	Composition		Porcelain		
	No.	Each	No.	Each	
1/2	....	....	1739	\$1.00	
3/4	....	....	2739	1.10	

## Lamp Receptacles

660 Watts, 600 Volts With Shade Holder Groove					
Size In.	Composition			Porcelain	
	No.	Each		No.	Each
1/2	1726	\$ .35		1706	\$ .45
3/4	2726	.40		2706	.50
1	3726	.60		3706	.70

Without Shade Holder Groove					
Size In.	Composition		Porcelain		
	No.	Each	No.	Each	
1/2	1727	\$ .35	1707	\$ .45	
3/4	2727	.40	2707	.50	
1	3727	.60			

## Cord Rosettes

660 Watts, 250 Volts					
Size	Composition			Porcelain	
In.	No.	Each	No.	Each	
1/2	1720	\$ .75	1700	\$ .60	
3/4	2720	.80	2700	.70	
1	3720	1.00	3799	.90	



Composition,  
With Groove



Porcelain,  
with Groove



Composition



Porcelain

Prices for receptacles listed above do not include attachment plugs.

If specified on the order, lamp receptacle with lamp grip will be furnished at an advance in price of 10 cents.

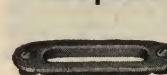
## Gaskets for Obround Series Condulets



For use between Condulets, and metal covers or Obround adapters.

Size Inches	Rubber	No.	Cork	No.	Vellumoid	No.	Each
$\frac{1}{2}$	Gask 571		Gask 671		Gask 771		\$1.10
$\frac{3}{4}$	Gask 572		Gask 672		Gask 772		.10
1	Gask 573		Gask 673		Gask 773		.15
$1\frac{1}{4}$	Gask 574		Gask 674		Gask 774		.20
$1\frac{1}{2}$	Gask 575		Gask 675		Gask 775		.20
2	Gask 576		Gask 676		Gask 776		.25
$2\frac{1}{2}$ , 3	Gask 578		Gask 678		Gask 778		.40
$3\frac{1}{2}$ , 4	Gask 579		Gask 679		Gask 779		.50

## Adapters for Obround Series Condulets



Size In.	No.	Each
1	731	\$ .35
$1\frac{1}{4}$	741	.50
$1\frac{1}{2}$	751	.70

## Gaskets for LBD Condulets

Size In.	No.	Each	Size In.	No.	Each
$\frac{1}{2}$	Gask 680R	\$ .10	$2\frac{1}{2}$ or 3	Gask 685R	\$1.50
$\frac{3}{4}$	Gask 681R	.15	$3\frac{1}{2}$ or 4	Gask 686R	1.75
1	Gask 682R	.20	$4\frac{1}{2}$ or 5	Gask 687R	3.50
$1\frac{1}{4}$	Gask 683R	.30	6	Gask 688R	5.00
$1\frac{1}{2}$	Gask 684R	.60			



## Form 8 Series Condulets

Threaded for Thick Wall Conduit

Relative Sizes of 2-Inch Type C,  
Forms 7 and 8 Condulets

Form 8 series Condulets are for use where sizes of conductors, number of splices or tapping and pulling requirements necessitate more room than provided in the Oround series Form 7.

Type C

Type LR



Size In.	No.	Each	Size In.	No.	Each
1/2	Use Form 7 Condulets		1/2	Use Form 7 Condulets	
3/4			3/4		
1	C48	\$1.05	1	LR48	\$1.05
1 1/4	C58	1.40	1 1/4	LR58	1.40
1 1/2	C68	2.40	1 1/2	LR68	2.40
2	C78	5.00	2	LR78	5.00
2 1/2	C88	6.50	2 1/2	LR888	6.50
3	C98	10.50	3	LR98	10.50
3 1/2	C108	12.00	3 1/2	LR108	10.50
4			4	LR108	12.00

Type E

Type T



Size In.	No.	Each	Size In.	No.	Each
1/2	Use Form 7 Condulets		1/2	Use Form 7 Condulets	
3/4			3/4		
1	E48	\$ .80	1	T48	\$1.22
1 1/4	E58	1.04	1 1/4	T58	1.69
1 1/2	E68	2.14	1 1/2	T68	2.55
2	E78	4.20	2	T78	5.00
2 1/2	E88	5.00	2 1/2	T88	7.50
3	E98	7.00	3	T98	11.00
3 1/2	E108	9.00	3 1/2	T108	13.00
4			4		

Type LB

Type TB



Size In.	No.	Each	Size In.	No.	Each
1/2	Use Form 7 Condulets		1/2	Use Form 7 Condulets	
3/4			3/4		
1	LB48	\$1.05	1	TB48	\$1.22
1 1/4	LB58	1.40	1 1/4	TB58	1.69
1 1/2	LB68	2.40	1 1/2	TB68	2.55
2	LB78	5.00	2	TB78	5.00
2 1/2	LB888	6.50	2 1/2	TB88	7.50
3	LB98	10.50	3	TB98	11.00
3 1/2	LB108	12.00	3 1/2	TB108	13.00
4			4		

Form 8 Series Condulets  
Threaded for Thick Wall Conduit

Type LL

Type X



Size In.	No.	Each	Size In.	No.	Each
1/2	Use Form 7 Condulets		1/2	Use Form 7 Condulets	
3/4			3/4		
1	LL48	\$1.05	1	X48	\$1.40
1 1/4	LL58	1.40	1 1/4	X58	1.78
1 1/2	LL68	2.40	1 1/2	X68	3.50
2	LL78	5.00	2	X78	6.00
2 1/2	LL888	6.50	2 1/2	X88	10.00
3	LL98	10.50	3	X98	13.00
3 1/2	LL108	12.00	3 1/2	X108	16.00
4			4		

## Covers for Form 8 Series Condulets

Blank  
Sheet Steel

Size In.	No.	Each
1 1/4 or 1 1/2	580	\$ .32
2	680	.56
2 1/2 or 3	880	.75
3 1/2 or 4	980	.80

Cast Feraloy



Size In.	No.	Each
1 1/4 or 1 1/2	580F	\$ .50
2	680F	.70
2 1/2 or 3	880F	.75
3 1/2 or 4	980F	.80

Bakelite



Size In.	No.	Each
1 1/4 or 1 1/2	5870	\$1.00
2	6870	1.20
2 1/2 or 3	8870	1.60
3 1/2 or 4	9870	2.50

If specified on order, blank bakelite cover will be furnished with special drilling at an advance in list price as follows: Up to 1/2 inch diameter, 5 cents list per hole; over 1/2 inch but less than 1 inch, 15 cents list per hole; 1 inch and over, 20 cents list per hole.

2, 3, 4, or 5-Wire  
Bakelite

Size In.	DIAMETER, INCHES			No.	Each
	A	B	C		
1 1/4 or 1 1/2	1 1/16	5/8	1 1/16	5875	\$1.00
2	1 1/16	1 1/16	1 1/16	6875	1.20
2 1/2 or 3	1 1/16	1 1/16	1 1/16	8875	1.60
3 1/2 or 4	1 1/16	1 1/16	1 1/16	9875	2.50

## Gaskets for Form 8 Series



For use between Condulets and metal covers.

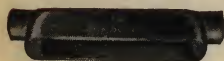
Size In.	Rubber	Cork	Vellumoid	Each
1 1/4 or 1 1/2	Gask 805R	Gask 805C	Gask 805V	\$ .20
2	Gask 806R	Gask 806C	Gask 806V	.25
2 1/2 or 3	Gask 808R	Gask 808C	Gask 808V	.40
3 1/2 or 4	Gask 809R	Gask 809C	Gask 809V	.50



## Mogul Series Condulets

Take Mogul Covers

## Type BC



Size In.	No.	Each
1	BC3	\$1.90
1 1/4	BC4	2.15
1 1/2	BC5	4.15
2	BC6	5.00
2 1/2	BC7	7.40
3	BC8	9.90
3 1/2	BC9	14.85
4	BC10	18.00

## Type BT



Size In.	No.	Each
1	BT3	\$2.25
1 1/4	BT4	2.50
1 1/2	BT5	4.65
2	BT6	5.60
2 1/2	BT7	7.80
3	BT8	11.20
3 1/2	BT9	16.85
4	BT10	20.00

## Type BEE



Size In.	No.	Each
1	BEE3	\$1.70
1 1/4	BEE4	1.90
1 1/2	BEE5	3.70
2	BEE6	4.50
2 1/2	BEE7	6.80
3	BEE8	8.70
3 1/2	BEE9	14.00
4	BEE10	16.00

## Type BTB



Size In.	No.	Each
1	BTB3	\$2.25
1 1/4	BTB4	2.50
1 1/2	BTB5	4.65
2	BTB6	5.60
2 1/2	BTB7	7.80
3	BTB8	11.20
3 1/2	BTB9	16.85
4	BTB10	20.00

## Type BLB



Size In.	No.	Each
1	BLB3	\$1.90
1 1/4	BLB4	2.15
1 1/2	BLB5	4.15
2	BLB6	5.00
2 1/2	BLB7	7.60
3	BLB8	10.20
3 1/2	BLB9	16.35
4	BLB10	19.00

## Type BX



Size In.	No.	Each
1	BX3	\$1.90
1 1/4	BX4	2.15
1 1/2	BX5	4.15
2	BX6	5.00
2 1/2	BX7	7.60
3	BX8	10.20
3 1/2	BX9	16.35
4	BX10	19.00

## Type BUB



Size In.	No.	Each
1	BUB3	\$1.90
1 1/4	BUB4	2.15
1 1/2	BUB5	4.15
2	BUB6	5.00
2 1/2	BUB7	7.60
3	BUB8	10.20
3 1/2	BUB9	16.35
4	BUB10	19.00

## Covers for Mogul Series Condulets

Blank



Bakelite



Cast Feraloy

Size In.	Bakelite		Cast Feraloy			
	No.	Each	Without Gasket	Each	With Gasket	Each
1 or 1 1/4	CF534	\$1.25	BG47	\$1.10	BG48	\$1.50
1 1/2 or 2	CF536	3.00	BG67	1.75	BG68	2.40
2 1/2 or 3	CF538	4.00	BG87	3.50	BG88	5.00
3 1/2 or 4	CF539	6.80	BG97	5.50	BG98	7.00

## Gaskets for Mogul Series Condulets

For use between condulets and covers; except No. BG48, BG68, BG88 and BG98 covers, which have round gaskets.

Size In.	No.	Each
1 or 1 1/4	Gask271	\$ .25
1 1/2 or 2	Gask272	.35
2 1/2 or 3	Gask273	.45
3 1/2 or 4	Gask274	.65

## FS Series Shallow Type Condulets

Take covers and shallow flush rectangular wiring devices, or receptacles with housings.

Overall dimensions of body, exclusive of hubs: length, 4 1/2 inches; width, 2 3/4 inches; depth, 1 1/8 inches.

For wiring devices exceeding 1 5/8 inches in depth under the fastening ears, use Condulets of the FD series.



Type FS



Type FSA



Type FSC



Type FSL



Type FSR



Type FSS



Type FSCA



Type FS CC

## Type FS

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
1 1/2	FS1	\$.65	FS191	\$.70	FS1-MT	\$.70
3/4	FS2	.75	FS291	.85	FS2-MT	.85
1	FS3	.85	FS391	1.00	FS3-MT	1.00

## Type FSA

Size In.	No.	Each	No.	Each	No.	Each
1 1/2	FSA1	\$.65	FSA191	\$.70	FSA1-MT	\$.70
3/4	FSA2	.75	FSA291	.85	FSA2-MT	.85
1	FSA3	.85	FSA391	1.00	FSA3-MT	1.00

## Type FSC

Size In.	No.	Each	No.	Each	No.	Each
1 1/2	FSC1	\$.75	FSC191	\$.85	FSC1-MT	\$.85
3/4	FSC2	.90	FSC291	1.10	FSC2-MT	1.10
1	FSC3	1.10	FSC391	1.40	FSC3-MT	1.40

## Type FSL

Size In.	No.	Each	No.	Each	No.	Each
1 1/2	FSL1	\$.75	FSL191	\$.85	FSL1-MT	\$.85
3/4	FSL2	.90	FSL291	1.10	FSL2-MT	1.10
1	FSL3	1.10	FSL391	1.40	FSL3-MT	1.40

## Type FSR

Size In.	No.	Each	No.	Each	No.	Each
1 1/2	FSR1	\$.75	FSR191	\$.85	FSR1-MT	\$.85
3/4	FSR2	.90	FSR291	1.10	FSR2-MT	1.10
1	FSR3	1.10	FSR391	1.40	FSR3-MT	1.40

## Type FSS

Size In.	No.	Each	No.	Each	No.	Each
1 1/2	FSS1	\$.75	FSS191	\$.85	FSS1-MT	\$.85
3/4	FSS2	.90	.....	.....	.....	.....
1	FSS3	1.10	.....	.....	.....	.....

## Type FSCA

Size In.	No.	Each	No.	Each	No.	Each
1 1/2	FSCA1	\$1.00	FSCA191	\$1.15	FSCA1-MT	\$1.15
3/4	FSCA2	1.25	FSCA291	1.55	FSCA2-MT	1.55
1	FSCA3	1.45	FSCA391	1.90	FSCA3-MT	1.90

## Type FS CC

The hubs at the right in the illustration are 1/2 inch.

Size In.	No.	Each	No.	Each	No.	Each
1 1/2	FS CC1	\$1.00	FS CC191	\$1.15	FS CC1-MT	\$1.15
3/4	FS CC21	1.25	.....	.....	.....	.....
1	FS CC31	1.45	.....	.....	.....	.....



## FS Series Shallow Type Condulets

Take covers and shallow flush rectangular wiring devices, or receptacles with housings.

Overall dimensions of body, exclusive of hubs: length,  $4\frac{1}{2}$  inches; width,  $2\frac{3}{4}$  inches; depth,  $1\frac{1}{8}$  inches.

For wiring devices exceeding  $1\frac{5}{8}$  inches in depth under the fastening ears, use Condulets of the FD series.



Type FSCT



Type FSX



Type FS  
Double Face



Type FSC  
Double Face

### Type FSCT

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FSCT1	\$1.00	FSCT191	\$1.15
$\frac{3}{4}$	FSCT2	1.25	FSCT291	1.55
1	FSCT3	1.45	FSCT391	1.90

### Type FSX

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FSX1	\$1.20	FSX191	\$1.40
$\frac{3}{4}$	FSX2	1.50	FSX291	1.90
1	FSX3	1.70	FSX391	2.30

### Type FS, Double Face

Size In.	No.	Each	No.	Each	No.	Each
$\frac{1}{2}$	FS152	\$1.15	FS159	\$1.25	FS152-MT	\$1.25

### Type FSC, Double Face

Size In.	No.	Each	No.	Each	No.	Each
$\frac{1}{2}$	FSC152	\$1.25	FSC159	\$1.45	FSC152-MT	\$1.45

## FD Series Deep Type Condulets

Take covers and deep or shallow flush rectangular wiring devices, or receptacles with housings.

Overall dimensions of body, exclusive of hubs: length,  $4\frac{1}{2}$  inches; width,  $2\frac{3}{4}$  inches; depth,  $2\frac{3}{4}$  inches.



Type FD



Type FDA



Type FDC

### Type FD

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FD1	\$0.75	FD191	\$0.80
$\frac{3}{4}$	FD2	.85	FD291	.95
1	FD3	1.00	FD391	1.15

### Type FDA

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FDA1	\$0.75	FDA191	\$0.80
$\frac{3}{4}$	FDA2	.85	FDA291	.95
1	FDA3	1.00	FDA391	1.15

### Type FDC

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FDC1	\$0.85	FDC191	\$0.95
$\frac{3}{4}$	FDC2	1.05	FDC291	1.25
1	FDC3	1.25	FDC391	1.55

## FD Series Deep Type Condulets

Take covers and deep or shallow flush rectangular wiring devices, or receptacles with housings.

Overall dimensions of body, exclusive of hubs: length,  $4\frac{1}{2}$  inches; width,  $2\frac{3}{4}$  inches; depth,  $2\frac{3}{4}$  inches.



Type FDL



Type FDR



Type FDCA



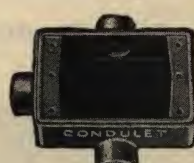
Type FDD



Type FDCC



Type FDCT



Type FDT



Type FDX

### Type FDL

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FDL1	\$0.85	FDL191	\$0.95
$\frac{3}{4}$	FDL2	1.05	FDL291	1.25
1	FDL3	1.25	FDL391	1.55

### Type FDR

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FDR1	\$0.85	FDR191	\$0.95
$\frac{3}{4}$	FDR2	1.05	FDR291	1.25
1	FDR3	1.25	FDR391	1.55

### Type FDCA

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FDCA1	\$1.10	FDCA191	\$1.25
$\frac{3}{4}$	FDCA2	1.35	FDCA291	1.65
1	FDCA3	1.55	FDCA391	2.00

### Type FDD

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FDD1	\$0.85	FDD191	\$0.95
$\frac{3}{4}$	FDD2	1.05	FDD291	1.25
1	FDD3	1.25	FDD391	1.55

### Type FDCC

The hubs at the right in the illustration are  $\frac{1}{2}$  inch.

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FDCC1	\$1.10	FDCC191	\$1.25
$\frac{3}{4}$	FDCC21	1.35	FDCC21-MT	1.55
1	FDCC31	1.55	FDCC31-MT	1.80

### Type FDCT

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FDCT1	\$1.10	FDCT191	\$1.25
$\frac{3}{4}$	FDCT2	1.35	FDCT291	1.65
1	FDCT3	1.55	FDCT391	2.00

### Type FDT

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FDT1	\$1.10	FDT191	\$1.25
$\frac{3}{4}$	FDT2	1.35	FDT291	1.65
1	FDT3	1.55	FDT391	2.00

### Type FDX

Size In.	Threaded		Threadless	
	Thick Wall	Thin Wall	Thick Wall	Thin Wall
No.	No.	No.	No.	No.
Each	Each	Each	Each	Each
$\frac{1}{2}$	FDX1	\$1.30	FDX191	\$1.50
$\frac{3}{4}$	FDX2	1.60	FDX291	2.00
1	FDX3	1.80	FDX391	2.40



## FS Series Shallow Type Condulets

## Type FS, 2-Gang Tandem



Size In.	Threaded— Thick Wall		Threadless		Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	FS17	\$1.65	FS197	\$1.70	FS17-MT	\$1.70
3/4	FS27	1.75	FS297	1.85	FS27-MT	1.85
1	FS37	1.85	FS397	2.00	FS37-MT	2.00

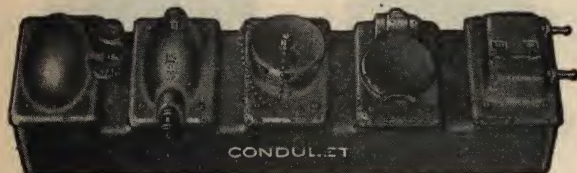
## Type FSC, 2-Gang Tandem



Size In.	No.	Each	No.	Each	No.	Each
1/2	FSC17	\$1.75	FSC197	\$1.85	FSC17-MT	\$1.85
3/4	FSC27	1.85	FSC297	2.05	FSC27-MT	2.05
1	FSC37	1.95	FSC397	2.25	FSC37-MT	2.25

## Types FS and FD Multiple Gang Condulets

## Without Hubs



Type FS, Five-Gang

With Push Button and Tumbler Switch Covers, and Threaded Cap and Spring Door Housings



Type FS, Two-Gang Tandem



Type FS, Three-Gang

Can be furnished with welded conduit hubs complete with integral bushings or can be drilled on the job and used with locknut and bushing.

Takes all individual covers to make up combination of several devices in one Condulet.

When ordering with welded hubs, specify type (threaded, union, threadless thin wall or threadless thick wall), size, and location of each hub. Furnish description or sketch of hub layout desired.

Number of Gangs	Type FS		Type FD	
	No.	Each	No.	Each
Single	FS01	\$ .50	FD01	\$ .60
Two-Gang Tandem	FS097	1.25	FD097	1.45
Two-Gang	FS02	1.25	FD02	1.45
Three-Gang	FS03	2.00	FD03	2.30
Four-Gang	FS04	2.75	FD04	3.15
Five-Gang	FS05	3.50	FD05	4.00

## Welded Hubs

Size Inches	Threaded		Threadless, Thick Wall or Thin Wall	
	Each	Union Each	Each	
1/2	\$ .55	\$ .90	\$ .75	
3/4	.60	.90	.85	
1	.70	1.10	1.00	
*1 1/4	.85	1.60	1.20	
*1 1/2	1.00	....	....	

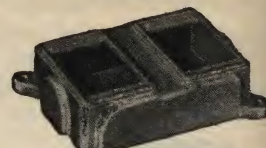
\*For FD Series only.

## Type FS Condulets

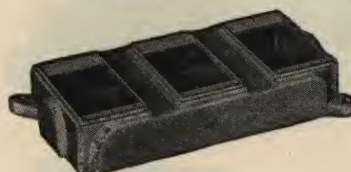
## With Bosses For Tapping



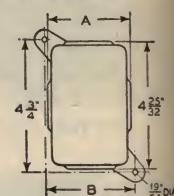
Type FS



Type FS, Two-Gang



Type FS, Three-Gang



No.	Each	Number of Gangs	DIMENSIONS, IN.		
			A	B	Depth
FS019	\$ .75	Single	3 1/4	3 1/4	1 1/2
FS029	1.50	Two-Gang	7	7	1 1/2
FS039	2.25	Three-Gang	10 3/4	10 3/4	1 1/2

## Drilling and Tapping

Condulets can be drilled and tapped on the job or, if specified, will be drilled and tapped at the factory for the following prices per opening: 1/2 or 3/4-inch, 5 cents; 1-inch, 10 cents.

Type ExF Extensions  
For FS and FD Series ConduletsNo.  
ExF11No.  
ExF41

No.	Each	Depth Inches
ExF11	\$ .50	1
ExF21	1.75	2 1/2
ExF41	2.00	4 5/8

## Gaskets for FS and FD Series Condulets

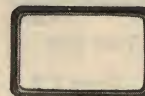
## For Use Between Condulets and Covers

Not recommended as watertight.



No. of Gangs	No.		Each
	Rubber	Vellumoid	
1	Gask 91	Gask 412	\$ .20
2	Gask 145	Gask 343	.25
3	Gask 135	.....	.30
4	Gask 146	.....	.40

## For Use Between Condulets and Vaportight Covers



No.	Gask	Each
1	Gask 425	\$ .20
2	Gask 434	.25
3	Gask 460	.30
4	Gask 461	.40

For Use in Threaded Cap of Type BRD  
Plug Receptacle Housings

No. of Poles	No.	Rubber Each
2	Gask 173	\$ .10
3	Gask 144	.10
4	Gask 144	.10





**Condulet Covers**

For Condulets of the FS and FD Series, and

FS Series 2-Gang Tandem



For Double Push Button, Double Push Button  
Momentary Contact, and Double Push Lock Switches

	Sheet Steel		Style
	No.	Each	
	DS8	\$ .15	Surface
	DSS8	.15	Flush
	DS8g	\$ .35	Surface
	DS8g	.35	Flush

Cast Feraloy—Guarded

For G-E, Arrow-H &amp; H, Bryant, and

Hubbell Tumbler Flush Switches with Square Handles


	Sheet Steel		Style
	No.	Each	
	DS32	\$ .15	Surface
	DSS32	.15	Flush
	DS32g	\$ .35	Surface
	DS32g	.35	Flush

Cast Feraloy—Guarded

**For Round Flush Receptacles**


Sheet Steel—Spring Hinge Lid

Diameter opening,  $1\frac{1}{8}$  inches.

	Sheet Steel		Style
	No.	Each	
	DS10	\$ .60	Surface
	DSS10	.60	Flush


Cast Feraloy—With Spring Door

Diameter opening,  $1\frac{1}{16}$  inches.


	Sheet Steel		Style
	No.	Each	
	DS10g	\$ 1.25	Surface
	DS10g	1.25	Flush

Sheet Steel

Diameter opening,  $1\frac{1}{32}$  inches.

	Sheet Steel		Style
	No.	Each	
	DS21	\$ .15	Surface
	DSS21	.15	Flush


**For Standard Duplex Flush Receptacles**

	Sheet Steel		Style
	No.	Each	
	DS23	\$ .15	Surface
	DSS23	.15	Flush

**For Dugle Tumbler Switches**

	Sheet Steel		Style
	No.	Each	
	DS63	\$ .15	Surface
	DSS63	.15	Flush

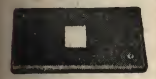
**For Trigle Tumbler Switches**

	Sheet Steel		Style
	No.	Each	
	DS65	\$ .15	Surface
	DSS65	.15	Flush

**For Despard Wiring Devices**

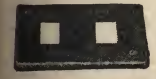
With 1 Opening—Sheet Steel

Furnished with mounting bridge.

	Sheet Steel		Style
	No.	Each	
	DS71	\$ .25	Surface
	DSS71	.25	Flush


With 2 Openings—Sheet Steel

Furnished with mounting bridge.

	Sheet Steel		Style
	No.	Each	
	DS72	\$ .25	Surface
	DSS72	.25	Flush

With 3 Openings—Sheet Steel

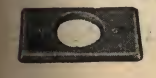
Furnished with mounting bridge.

	Sheet Steel		Style
	No.	Each	
	DS73	\$ .25	Surface
	DSS73	.25	Flush

**For 30-Ampere Flush Plug Receptacles**

Sheet Steel

Diameter cover opening,  $1\frac{1}{8}$  inches.

	Sheet Steel		Style
	No.	Each	
	DS35	\$ .15	Surface
	DSS35	.15	Flush


**Condulet Covers**

For Condulets of the FS and FD Series, and

FS Series 2-Gang Tandem


With Female Brass Nipple

Sheet Steel— $\frac{3}{8}$ -Inch Nipple


	Sheet Steel		Style
	No.	Each	
	DS18	\$ .40	Surface
	DS18	.40	Flush
	DS116	\$ .45	Surface

**Blank Covers**

Sheet Steel

	Sheet Steel		Style
	No.	Each	
	DS100	\$ .10	Surface
	DSS100	.10	Flush

Cast Feraloy—With Gasket

	Cast Feraloy		Style
	No.	Each	
	DS100g	\$ .25	Surface
	DS100g	.25	Flush

**For Pilot Lamp Flush Receptacles**

Sheet Steel

Cast Feraloy

Furnished with clear or colored jewels.

Style	Sheet Steel				Cast Feraloy	
	Surface		Flush		Surface or Flush	Watertight
	No.	Each	No.	Each	No.	Each
Ruby.....	DS24	\$ 1.00	DSS24	\$ 1.00	DS24g	\$ 1.25
Olive Green...	DS34	1.00	DSS34	1.00	DS34g	1.25
Emerald.....	DS41	1.00	DSS41	1.00	DS41g	1.25
Canary.....	DS42	1.00	DSS42	1.00	DS42g	1.25
Amethyst.....	DS43	1.00	DSS43	1.00	DS43g	1.25
Amber.....	DS44	1.00	DSS44	1.00	DS44g	1.25
Topaz.....	DS45	1.00	DSS45	1.00	DS45g	1.25
Opal.....	DS46	1.00	DSS46	1.00	DS46g	1.25
Frosted.....	DS47	1.00	DSS47	1.00	DS47g	1.25
Clear.....	DS48	1.00	DSS48	1.00	DS48g	1.25
Blue.....	DS49	1.00	DSS49	1.00	DS49g	1.25

**Vaportight Covers**

For Condulets of the FS and FD Series, and

FS Series 2-Gang Tandem

With Switch Operating Mechanism

Surface or Flush. Furnished with gasket.

\*For External Operation of Double Push Button  
Switches

Furnished with Handle



No. DS108, Cast Feraloy.....each \$1.75

\*For Momentary Contact Switches  
Furnished with Handle

No. DS107, Cast Feraloy.....each \$1.75

\*For External Operation of Tumbler Switches  
For Standard Operation, On or Off

No. DS128, Cast Feraloy.....each \$1.75

For Momentary Contact Operation, Normally On



No. DS126, Cast Feraloy.....each \$1.75

For Momentary Contact Operation, Normally Off

No. DS127, Cast Feraloy.....each \$1.75

\*Where the temperature exceeds 125°F., switches furnished  
with heat-resisting buttons should be used.



### Vaportight Covers

For Condulets of the FS and FD Series, and  
FS Series 2-Gang Tandem  
With Switch Operating Mechanism

Surface or flush. Furnished with gasket.

**\*For Standard Tumbler Switches**  
For Standard Operation On or Off

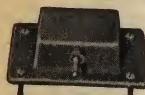


No. DS181, Cast Feraloy.....each **\$1.75**  
For Momentary Contact Switches

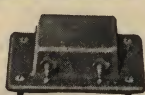


No. DS183, Cast Feraloy.....each **\$1.75**

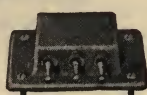
**For External Operation of Tumbler Switches**  
For Standard Operation On or Off



No. DS101



No. DS102



No. DS103

Furnished with switch operating mechanism but without switches. Surface or flush. Furnished with gasket and switch mounting plates.

No.	Each	No. of Switches	Material
DS101	<b>\$1.75</b>	1	Cast Feraloy
DS102	<b>2.50</b>	2	Cast Feraloy
DS103	<b>3.25</b>	3	Cast Feraloy

**For Motor Control Push Button Switches**



Furnished with buttons for operating motor. Control push button. Standard push.

Button switches, surface or flush.

Furnished with gasket.

No.	Each	Description	Switch Markings
DS171F	<b>\$1.75</b>	1 Button, Normally Open...	Start
DS171G	<b>1.75</b>	1 Button, Normally Closed..	Stop
DS171	<b>1.75</b>	2 Button, 1 Normally Open, 1 Normally Closed.....	Start, Stop

**For Standard Flush Push Button Switches**

DS171C **\$1.75** 2 Button, On and Off..... On, Off

### Type DS Receptacles with Housings

For Condulets of the FS and FD Series, and  
FS Series 2-Gang Tandem  
Take Standard Attachment Plugs

Surface or flush.

Housings are furnished with receptacles for standard attachment plug caps.

#### With Spring Door

15 Amperes, 125 Volts or  
10 Amperes, 250 Volts



No.	Each	Material
DS83	<b>\$3.20</b>	Feraloy
DS84	<b>\$3.90</b>	Feraloy
DS91	<b>\$3.90</b>	Feraloy

#### Without Spring Door

15 Amperes, 125 Volts or  
10 Amperes, 250 Volts



No.	Each	Material
DS85	<b>\$1.60</b>	Feraloy
DS86	<b>\$2.30</b>	Feraloy
DS92	<b>\$2.30</b>	Feraloy

\*Where the temperature exceeds 125°F., switches furnished with heat-resisting buttons should be used.

†Third pole grounded.

Receptacles for housings listed above are furnished with fastening strap and screws.

### Type DS Receptacles with Housings

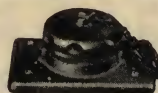
For Condulets of the FS and FD Series, and  
FS Series 2-Gang Tandem

Surface or flush.

Housings are furnished with receptacles for standard attachment plug caps.

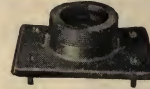
#### With Threaded Cap

15 Amperes, 125 Volts or  
10 Amperes, 250 Volts



#### Without Threaded Cap

15 Amperes, 125 Volts or  
10 Amperes, 250 Volts



Takes Crouse-Hinds Type WP Plug.  
Furnished with gasket.

No.	Each	Material	No.	Each	Material
DS81	<b>\$2.50</b>	Feraloy	DS87	<b>\$1.75</b>	Feraloy
DS82	<b>\$3.45</b>	Feraloy	DS88	<b>\$2.70</b>	Feraloy
DS90	<b>\$3.45</b>	Feraloy	DS93	<b>\$2.70</b>	Feraloy

### Type WP Watertight Plugs



For use with Type DS and Type GS threaded receptacle housings, 15 amperes 125 volts, or 10 amperes 250 volts.

No.	Each	Style	Cord Size Inches
WP721	<b>\$1.50</b>	2-Pole, Tandem Blade.....	.375 to .500
WP821	<b>1.50</b>	2-Pole, Tandem Blade.....	.500 to .625
WP722	<b>1.50</b>	2-Pole, Parallel Blade.....	.375 to .500
WP822	<b>1.50</b>	2-Pole, Parallel Blade.....	.500 to .625
WP731	<b>1.75</b>	3-Pole.....	.375 to .500
WP831	<b>1.75</b>	3-Pole.....	.500 to .625

### Plug Receptacle Housing with Receptacle



Plain Housing  
With Receptacle



Spring Door Housing  
With Receptacle



Threaded Cap Housing  
With Receptacle

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Hole in cover, 1 1/16 inches in diameter.

Receptacle Poles	Style	Plain No.	Each	Door No.	Each	Cap No.	Each
2-W., 2-P.	Double T	DS325	<b>\$1.00</b>	DS332	<b>\$1.75</b>	DS339	<b>\$1.50</b>
2-W., 2-P.	Polarized	DS326	<b>1.40</b>	DS333	<b>2.15</b>	DS340	<b>1.70</b>
*2-W., 3-P.	Polarized	DS327	<b>1.75</b>	DS334	<b>2.50</b>	DS341	<b>2.25</b>
3-W., 3-P.	Polarized	DS328	<b>2.00</b>	DS335	<b>2.75</b>	DS342	<b>2.50</b>
2-W., 2-P.	Twistlock	DS329	<b>1.30</b>	DS336	<b>2.05</b>	DS343	<b>1.80</b>
*2-W., 3-P.	Twistlock	DS330	<b>1.90</b>	DS337	<b>2.65</b>	DS344	<b>2.40</b>
3-W., 3-P.	Twistlock	DS331	<b>2.15</b>	DS338	<b>2.90</b>	DS345	<b>2.65</b>

20 Amperes, 125 or 250 Volts

Hole in cover, 1 1/16 inches in diameter.

Receptacle Poles	Style	Plain No.	Each	Door No.	Each	Cap No.	Each
2-W., 2-P.	Polarized	DS346	<b>\$1.80</b>	DS354	<b>\$2.55</b>	DS362	<b>\$2.55</b>
*2-W., 3-P.	Polarized	DS347	<b>2.10</b>	DS355	<b>2.85</b>	DS365	<b>4.00</b>
3-W., 3-P.	Polarized	DS348	<b>2.10</b>	DS356	<b>2.85</b>	DS366	<b>4.00</b>
*3-W., 4-P.	Polarized	DS349	<b>2.50</b>	DS357	<b>3.25</b>	.....	.....
4-W., 4-P.	Polarized	DS350	<b>2.50</b>	DS358	<b>3.25</b>	.....	.....
2-W., 2-P.	Twistlock	DS351	<b>1.45</b>	DS359	<b>2.20</b>	DS365	<b>2.20</b>
*2-W., 3-P.	Twistlock	DS352	<b>2.30</b>	DS360	<b>3.05</b>	DS366	<b>4.00</b>
3-W., 3-P.	Twistlock	DS353	<b>2.30</b>	DS361	<b>3.05</b>	DS367	<b>4.00</b>

20 Amperes, 125 or 250 Volts

Hole in cover, 1 1/16 inches in diameter.

Receptacle Poles	Style	Plain No.	Each	Door No.	Each	Cap No.	Each
3-W., 4-P.	Twistlock	DS366	<b>\$2.90</b>	DS368	<b>\$3.65</b>	.....	.....
4-W., 4-P.	Twistlock	DS367	<b>2.90</b>	DS369	<b>3.65</b>	.....	.....

\*Third pole grounded.

Receptacles for housings listed above are furnished with fastening strap and screws.



## FS Series Push Button Station Condulets

Vaportight and Weather Resistant (Raintight)

Furnished with motor control push button switches.

Dimensions over all, exclusive of hubs: Length, 4 $\frac{1}{2}$  inches; width, 2 $\frac{3}{4}$  inches; and depth, 4 inches.

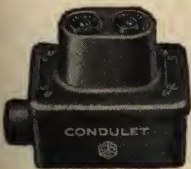
600 Volts, A.C. Maximum  
With Rocker Type Operating Handles



Size Hub In.	Type FS		Type FSC		Plate Marking
	No.	Each	No.	Each	
1/2	D120 Standard Duty		D113 Heavy Duty		Start
	No.	Each	No.	Each	
1/2	FS1810F	\$5.15	FS1813F	\$7.90	Start
3/4	FS2810F	5.25	FS2813F	8.00	
1/2	One Circuit—Closed		One Circuit—Closed		Stop
	No.	Each	No.	Each	
1/2	FS1810G	\$5.15	FS1813G	\$7.90	Stop
3/4	FS2810G	5.25	FS2813G	8.00	
1/2	Two Circuits—One Open, One Closed		Two Circuits—One Open, One Closed		{Start Stop}
	No.	Each	No.	Each	
1/2	FS1810	\$6.15	FS1813	\$8.90	{Start Stop}
3/4	FS2810	6.25	FS2813	9.00	
1/2	Two Circuits—Universal		Two Circuits—Universal		{Must be Specified}
	No.	Each	No.	Each	
1/2	FS1810U	\$6.90	FS1813U	\$9.65	{Must be Specified}
3/4	FS2810U	7.00	FS2813U	9.75	

Size Hub In.	Type FS		Type FSC		Plate Marking
	No.	Each	No.	Each	
1/2	D120 Standard Duty		D113 Heavy Duty		Start
	No.	Each	No.	Each	
1/2	FSC1810F	\$5.25	FSC1813F	\$8.00	Start
3/4	FSC2810F	5.40	FSC2813F	8.15	
1/2	One Circuit—Closed		One Circuit—Closed		Stop
	No.	Each	No.	Each	
1/2	FSC1810G	\$5.25	FSC1813G	\$8.00	Stop
3/4	FSC2810G	5.40	FSC2813G	8.15	
1/2	Two Circuits—One Open, One Closed		Two Circuits—One Open, One Closed		{Start Stop}
	No.	Each	No.	Each	
1/2	FSC1810	\$6.25	FSC1813	\$9.00	{Start Stop}
3/4	FSC2810	6.40	FSC2813	9.15	
1/2	Two Circuits—Universal		Two Circuits—Universal		{Must be Specified}
	No.	Each	No.	Each	
1/2	FSC1810U	\$7.00	FSC1813U	\$9.75	{Must be Specified}
3/4	FSC2810U	7.15	FSC2813U	9.90	

With Front Operated Push Buttons



Size Hub In.	Type FS		Type FSC		Plate Marking
	No.	Each	No.	Each	
1/2	D120 Standard Duty		D113 Heavy Duty		Start
	No.	Each	No.	Each	
1/2	FS1910F	\$5.15	FS1913F	\$7.90	Start
3/4	FS2910F	5.25	FS2913F	8.00	
1/2	One Circuit—Closed		One Circuit—Closed		Stop
	No.	Each	No.	Each	
1/2	FS1910G	\$5.15	FS1913G	\$7.90	Stop
3/4	FS2910G	5.25	FS2913G	8.00	
1/2	Two Circuits—One Open, One Closed		Two Circuits—One Open, One Closed		{Start Stop}
	No.	Each	No.	Each	
1/2	FS1910	\$6.15	FS1913	\$8.90	{Start Stop}
3/4	FS2910	6.25	FS2913	9.00	
1/2	Two Circuits—Universal		Two Circuits—Universal		{Must be Specified}
	No.	Each	No.	Each	
1/2	FS1910U	\$6.90	FS1913U	\$9.65	{Must be Specified}
3/4	FS2910U	7.00	FS2913U	9.75	

Size Hub In.	Type FS		Type FSC		Plate Marking
	No.	Each	No.	Each	
1/2	D120 Standard Duty		D113 Heavy Duty		Start
	No.	Each	No.	Each	
1/2	FSC1910F	\$5.25	FSC1913F	\$8.00	Start
3/4	FSC2910F	5.40	FSC2913F	8.15	
1/2	One Circuit—Closed		One Circuit—Closed		Stop
	No.	Each	No.	Each	
1/2	FSC1910G	\$5.25	FSC1913G	\$8.00	Stop
3/4	FSC2910G	5.40	FSC2913G	8.15	
1/2	Two Circuits—One Open, One Closed		Two Circuits—One Open, One Closed		{Start Stop}
	No.	Each	No.	Each	
1/2	FSC1910	\$6.25	FSC1913	\$9.00	{Start Stop}
3/4	FSC2910	6.40	FSC2913	9.15	
1/2	Two Circuits—Universal		Two Circuits—Universal		{Must be Specified}
	No.	Each	No.	Each	
1/2	FSC1910U	\$7.00	FSC1913U	\$9.75	{Must be Specified}
3/4	FSC2910U	7.15	FSC2913U	9.90	

## FS and FD Series Pilot Light Condulets

Vaportight and Weather Resistant (Raintight)

With Cast Feraloy Cover



Single Pilot Light

Furnished with jewel cover, candelabra type lamp receptacle. 120-volt, 6-watt, S-6 clear lamp, and 50-60 cycle transformer for circuit voltage above 110.

Size Hub Inches	Type FS		Type FSC		Circuit Voltage
	No.	Each	No.	Each	
1/2	*FS180	\$3.25	*FSC180	\$3.35	110
3/4	*FS280	3.35	*FSC280	3.50	110
Size Hub In.	Type FD		Type FDC		Circuit Voltage
	No.	Each	No.	Each	
1/2	*FD181	\$6.35	*FDC181	\$6.45	220
3/4	*FD281	6.45	*FDC281	6.65	220
1/2	*FD182	6.35	*FDC182	6.45	440
3/4	*FD282	6.45	*FDC282	6.65	440
1/2	*FD183	6.35	*FDC183	6.45	550
3/4	*FD283	6.45	*FDC283	6.65	550

\*Add the following suffixes to number for jewel color: J1 for ruby; J3 for emerald; J4 for canary; J6 for amber; J10 for clear; J11 for blue; J12 for milky white; J13 for orange.

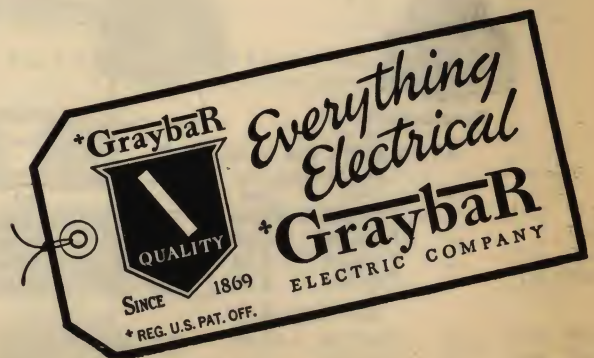
## FS and FD Series Two-Gang Combination Push Button Station and Pilot Light Condulets



Furnished with D120 standard duty, 600-volt, a.c. maximum, start-stop push button switch with front operated push button cover; pilot light receptacle with jewel cover; candelabra type lamp receptacle, 120-volt, 6-watt, S-6 clear lamp; and 50-60 cycle transformer for circuit voltage above 110.

Size Hub Inches	Type FS		Type FSC		Circuit Voltage
	No.	Each	No.	Each	
1/2	*FS1635	\$9.90	*FSC1635	\$10.45	110
3/4	*FS2635	9.95	*FSC2635	10.55	110
Size Hub Inches	Type FD		Type FDC		Circuit Voltage
	No.	Each	No.	Each	
1/2	*FD1637	\$13.10	*FDC1637	\$13.65	220
3/4	*FD2637	13.15	*FDC2637	13.75	220
1/2	*FD1638	13.10	*FDC1638	13.65	440
3/4	*FD2638	13.15	*FDC2638	13.75	440
1/2	*FD1639	13.10	*FDC1639	13.65	550
3/4	*FD2639	13.15	*FDC2639	13.75	550

\*Add the following suffixes to number for jewel color: J1 for ruby; J3 for emerald; J4 for canary; J6 for amber; J10 for clear; J11 for blue; J12 for milky white; J13 for orange.





## FD Series Vaportight Secondary Breaker Condulets

**Rocker Type Operation**  
For D.C. or Single Phase A.C. Motors



**For Arrow-H. & H.**

Size Hub In.	Single Pole No.	Each	Double Pole No.	Each	Single Pole No.	Each	Double Pole No.	Each
1/2	*FD1031	\$6.50	*FD1032	\$7.00	*FDC1031	\$6.60	*FDC1032	\$7.10
3/4	*FD2031	6.60	*FD2032	7.10	*FDC2031	6.80	*FDC2032	7.30
1	*FD3031	6.75	*FD3032	7.25	*FDC3031	7.00	*FDC3032	7.50

**For Bryant Type H**

Size Hub In.	Single Pole No.	Each	Double Pole No.	Each	Single Pole No.	Each	Double Pole No.	Each
1/2	†FD1091	\$6.50	†FD1092	\$7.00	†FDC1091	\$6.60	†FDC1092	\$7.10
3/4	†FD2091	6.60	†FD2092	7.10	†FDC2091	6.80	†FDC2092	7.30
1	†FD3091	6.75	†FD3092	7.25	†FDC3091	7.00	†FDC3092	7.50

**For Westinghouse Type H**

Size Hub In.	Single Pole No.	Each	Double Pole No.	Each	Single Pole No.	Each	Double Pole No.	Each
1/2	†FD1021	\$6.50	†FD1022	\$7.00	†FDC1021	\$6.60	†FDC1022	\$7.10
3/4	†FD2021	6.60	†FD2022	7.10	†FDC2021	6.80	†FDC2022	7.30
1	†FD3021	6.75	†FD3022	7.25	†FDC3021	7.00	†FDC3022	7.50

\*Price includes breaker with integral heater.

†Price includes breaker with one interchangeable heater.

## Type FAR Arktite Plug Receptacle Housings

For FS and FD Series Condulets, and FS Series 2-Gang Tandem

**Take Types AP and APJ Plugs**

30 Amperes, 250 Volts D.C., 600 Volts A.C.

Style 1, grounded through shell.

Style 2, grounded through extra pole and shell.



**Spring Door**



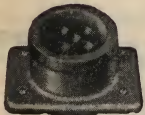
**Plain**

**30 Amperes, 250 Volts, D. C.**

Receptacle Poles	Style	Spring Door No.	Each	Plain No.	Each
2-W., 2-P.	1	FAR321	\$6.25	FAR323	\$5.55
3-W., 3-P.	1	FAR331	6.75	FAR333	6.05
4-W., 4-P.	1	FAR341	7.55	FAR343	6.85
5-W., 5-P.	1	FAR351	8.75	FAR353	8.05

**600 Volts A.C.**

Receptacle Poles	Style	Spring Door No.	Each	Plain No.	Each
2-W., 3-P.	2	FAR332	\$7.75	FAR334	\$7.05
3-W., 4-P.	2	FAR342	8.55	FAR344	7.85
4-W., 5-P.	2	FAR352	10.30	FAR354	9.60



**Threaded**



**With Cap**

**30 Amperes, 250 Volts, D. C.**

Receptacle Poles	Style	Threaded No.	Each	With Cap No.	Each
2-W., 2-P.	1	FAR325	\$5.80	FAR327	\$6.60
3-W., 3-P.	1	FAR335	6.30	FAR334	7.10
4-W., 4-P.	1	FAR345	7.10	FAR347	7.90
5-W., 5-P.	1	FAR355	8.30	FAR357	9.10

**600 Volts A.C.**

Receptacle Poles	Style	Threaded No.	Each	With Cap No.	Each
2-W., 3-P.	2	FAR336	\$7.30	FAR338	\$8.10
3-W., 4-P.	2	FAR346	8.10	FAR348	8.90
4-W., 5-P.	2	FAR356	9.75	FAR358	10.55

## Type BRD Plug Receptacle Housings

For Condulets of the FS and FD Series, and

**FS Series 2-Gang Tandem**

**Take Type BP Plugs**

\*30 Amperes, 250 Volts, A.C.

Can be used on Condulets mounted either on the surface or flush with the wall.

Two-pole housings are furnished with 30-ampere, 250-volt receptacle No. BR302; 3-pole housings are furnished with 30-ampere, 250-volt receptacle No. BR303; and 4-pole housings are furnished with 30-ampere, 250-volt receptacle No. BR304.

**With Spring Door**



No.	Each	Material
2-Pole BRD6302	\$4.20	Feraloy
3-Pole BRD6303	\$4.90	Feraloy
4-Pole BRD6304	\$5.60	Feraloy

**Without Spring Door**



No.	Each	Material
2-Pole BRD302	\$2.60	Feraloy
3-Pole BRD303	\$3.10	Feraloy
4-Pole BRD304	\$3.60	Feraloy

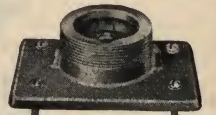
**With Threaded Cap**



Furnished with gaskets.

No.	Each	Material
2-Pole BRD8302	\$3.75	Feraloy
3-Pole BRD8303	\$4.70	Feraloy
4-Pole BRD8304	\$5.65	Feraloy

**Without Threaded Cap**



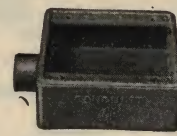
No.	Each	Material
2-Pole BRD7302	\$2.80	Feraloy
3-Pole BRD7303	\$3.35	Feraloy
4-Pole BRD7304	\$3.90	Feraloy

\*Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

## FS Series 2-Gang Shallow Type Condulets



**Type FS**



**Type FSE**



**Type FSC**

Take covers and shallow flush rectangular wiring devices. Overall dimensions of body, exclusive of hubs: length, 4 1/2 inches; width, 4 5/8 inches; depth, 1 7/8 inches.

For wiring devices exceeding 1 5/8 inches in depth under the fastening ears, use Condulets of the FD series, 2-gang.

Condulets listed can be furnished with flat face (4 1/2 x 4 5/8 x 2 1/8 inches) to take standard wall plates at the same list prices; add suffix S24 to number.

**Type FS**

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	FS12	\$1.20	FS192	\$1.25	FS12-MT	\$1.25
3/4	FS22	1.30	FS292	1.40	FS22-MT	1.40
1	FS32	1.40	FS392	1.55	FS32-MT	1.55

Size In.	Type FSE		Type FSC	
	No.	Each	No.	Each
1/2	FSE12	\$1.30	FSE192	\$1.40
3/4	FSC12	\$1.30	FSC192	\$1.40
1	FSC22	1.40	FSC292	1.60
	FSC32	1.55	FSC392	1.85



## FS Series 2-Gang Shallow Type Condulets

Continued



Type FSA



Type FSD



Type FSS

Take covers and shallow flush rectangular wiring devices. Overall dimensions of body, exclusive of hubs: length,  $4\frac{1}{2}$  inches; width,  $4\frac{5}{8}$  inches; depth,  $1\frac{1}{8}$  inches.

For wiring devices exceeding  $1\frac{5}{8}$  inches in depth under the fastening ears, use Condulets of the FD series, 2-gang.

Condulets listed can be furnished with flat face ( $4\frac{1}{2} \times 4\frac{5}{8} \times 1\frac{1}{8}$  inches) to take standard wall plates at the same list prices; add suffix S24 to number.

## Type FSA

Size In.	Type A					
	Threaded		Threadless			
	Thick Wall		Thick Wall		Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	FSA12	\$1.20	FSA192	\$1.25	FSA12-MT	\$1.25
3/4	FSA22	1.30	FSA292	1.40	FSA22-MT	1.40
	FSA32	1.40	FSA392	1.55	FSA32-MT	1.55

## Type FSD

1/2	FSD12	\$1.45	FSD192	\$1.60	FSD12-MT	\$1.60
3/4	FSD212	1.55	FSD2192	1.75	FSD212-MT	1.75
1	FSD312	1.65	FSD3192	1.90	FSD312-MT	1.90

## Type FSS

$\frac{3}{4}$	FSS222	\$1.40	FSS292	\$1.60	FSS22-MT	\$1.60
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\*The hubs at the top in the illustration are  $\frac{1}{2}$  inch.

## FD Series 2-Gang Deep Type Condulets



Type FD



Type FDA



Type FDE



Type FDC



Type FDS



Type FDB

Take covers and deep or shallow flush rectangular wiring devices, or receptacles with housings.

Overall dimensions of body, exclusive of hubs: length,  $4\frac{1}{2}$  inches; width,  $2\frac{3}{4}$  inches; depth,  $2\frac{3}{4}$  inches.

## Type FD

Size In.	Threaded		Threadless			
	Thick Wall		Thick Wall		Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	FD12	\$1.40	FD192	\$1.45	FD12-MT	\$1.45
3/4	FD22	1.50	FD292	1.60	FD22-MT	1.60
	FD32	1.60	FD392	1.75	FD32-MT	1.75

## Type FDA

1/2	FDA12	\$1.40	FDA192	\$1.45	FDA12-MT	\$1.45
3/4	FDA22	1.50	FDA292	1.60	FDA22-MT	1.60
1	FDA32	1.60	FDA392	1.75	FDA32-MT	1.75

## Type FDE

$\frac{1}{2}$	FDE12	\$1.50	FDE192	\$1.60	FDE12-MT	\$1.60
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## Type FDC

1/2	FDC12	\$1.50	FDC192	\$1.60	FDC12-MT	\$1.60
3/4	FDC222	1.60	FDC292	1.80	FDC222-MT	1.80
1	FDC32	1.75	FDC392	2.05	FDC32-MT	2.05

## Type FDS

$\frac{3}{4}$	FDS222	\$1.60	FDS292	\$1.80	FDS222-MT	\$1.80
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## Type FDB

1/2	FDB12	\$1.65	FDB192	\$1.80	FDB12-MT	\$1.80
*3/4	FDB212	1.75	FDB2192	1.95	FDB212-MT	1.95
*1	FDB312	1.85	GDB3192	2.10	FDB312-MT	2.10

\*The hubs at the top in the illustration are  $\frac{1}{2}$  inch.

## 2-Gang Condulet Covers

For FS and FD Series Condulets, 2-Gang  
For Tumbler Flush Switches with Square Handles



No.	Sheet Steel Each	Style
S322	\$.30	Surface
SS322	.30	Flush



No.	Cast Feraloy—Guarded	Style
S322g	\$.65	Surface
SS322g	.65	Flush



No.	For Standard Duplex Flush Receptacles Sheet Steel	Style
S32232	\$.50	Surface
SS32232	.50	Flush



No.	For Round Plug Flush Receptacles Sheet Steel	Style
S32212	\$.50	Surface
SS32212	.50	Flush



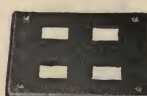
No.	For Pilot Lamp Flush Receptacles Sheet Steel	Style
S32242	\$1.20	Surface
SS32242	1.20	Flush



No.	For Round Flush Receptacles and Pilot Lamp Flush Receptacles Sheet Steel	Style
S21242	\$1.25	Surface
SS21242	1.25	Flush



No.	For P & S Despard Wiring Devices Sheet Steel	Style
S712	\$.50	Surface
SS712	.50	Flush



No.	With 2 Openings	Style
S722	\$.50	Surface
SS722	.50	Flush



No.	With 4 Openings	Style
S732	\$.50	Surface
SS732	.50	Flush



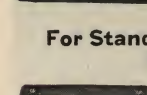
No.	With 6 Openings	Style
S732	\$.50	Surface
SS732	.50	Flush



No.	For Round Flush Receptacles Sheet Steel	Style
S212	\$.30	Surface
SS212	.30	Flush



No.	For Standard Duplex Flush Receptacles Sheet Steel	Style
S232	\$.30	Surface
SS232	.30	Flush



No.	For Round Flush Receptacles and Standard Duplex Flush Receptacles Sheet Steel	Style
S21232	\$.50	Surface
SS21232	.50	Flush



No.	For Standard Duplex Flush Receptacles, and for Pilot Lamp Flush Receptacles Sheet Steel	Style
S23242	\$1.25	Surface
SS23242	1.25	Flush



No.	Blank Metal Covers Sheet Steel	Style
S1002	\$.20	Surface
SS1002	.20	Flush



No.	Cast Feraloy—With Gasket	Style
S1002g	\$.50	Surface
SS1002g	.50	Flush



## 2-Gang Vaportight Covers

For FS and FD Series Condulets, 2-Gang With Switch Operating Mechanism

Surface or flush. Furnished with gasket.

**\*For External Operation of Double Push Button Switches**



Furnished with Handle

No.	Each	Material
DS1082	\$3.00	Feraloy



**\*For Momentary Contact Switches**

No.	Each	Material
DS1072	\$3.00	Feraloy



**For External Tumbler Switches**

For Standard Operation, On or Off

No.	Each	Material
DS1282	\$3.00	Feraloy



**For Momentary Contact Operation Normally On**

No.	Each	Material
DS1262	\$3.00	Feraloy

**For Momentary Contact Operation Normally Off**

No.	Each	Material
DS1272	\$3.00	Feraloy



**\*For Standard Tumbler Switches**

For Standard Operation, On or Off

No.	Each	Material
DS1812	\$3.00	Feraloy



**For Momentary Contact Switches**

No.	Each	Material
DS1832	\$3.00	Feraloy

**\*For Standard Tumbler Switches**



No. DS1012, Feraloy, For 2 Switches.....	each	\$3.00
No. DS1022, Feraloy, For 4 Switches.....	each	4.50
No. DS1032, Feraloy, For 6 Switches.....	each	6.00

## Type ExF 2-Gang Extensions

For FS and FD Series Condulets, 2-Gang



No. ExF 12

No.	Extension Depth Inches	Each
ExF12	1	\$1.05
ExF42	4 5/8	2.85

\*Where the temperature exceeds 125°F., switches furnished with heat-resisting buttons should be used.



No. ExF 42

## FS Series 3-Gang Shallow Type Condulets

Take covers and shallow flush rectangular wiring devices. Overall dimensions of body, exclusive of hubs: length, 4 3/32 inches; width, 6 1/2 inches; depth, 1 1/8 inches.

Condulets listed can be furnished with flat face (4 1/2 x 6 1/2 x 2 1/8 inches) to take standard wall plates at the same list prices; add suffix "S24" to number.

For wiring devices exceeding 1 5/8 inches in depth under the fastening ears, with Condulets of the FD series, 3 gang.



Type FS



Type FSC

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
3/4	FS23	\$1.80	FS293	\$1.90	FS23-MT	\$1.90
1	FS33	1.95	FS393	2.10	FS33-MT	2.10

## Type FS

## Type FSC

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
3/4	FSC23	\$1.90	FSC293	\$2.10	FSC23-MT	\$2.10
1	FSC333	2.05	FSC393	2.35	FSC333-MT	2.35
1 1/4	FSC43	2.20	.....	.....	.....	.....



Type FSA



Type FSS

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
3/4	FSA23	\$1.80	FSA293	\$1.90	FSA23-MT	\$1.90
1	FSA33	1.95	FSA393	2.10	FSA33-MT	2.10

## Type FSA

## Type FSS

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
3/4	FSS23	\$2.05	FSS293	\$2.35	FSS23-MT	\$2.35

## FD Series 3-Gang Deep Type Condulets

Take covers and deep or shallow flush rectangular wiring devices.

Overall dimensions of body, exclusive of hubs: length, 4 3/32 inches; width, 6 1/2 inches; depth, 2 3/4 inches.



Type FD



Type FDC

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
3/4	FD23	\$2.10	FD293	\$2.20	FD23-MT	\$2.20
1	FD33	2.25	FD393	2.40	FD33-MT	2.40

## Type FD

## Type FDC

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
3/4	FDC23	\$2.20	FDC293	\$2.40	FDC 23-MT	\$2.40
1	FDC333	2.35	FDC393	2.65	FDC333-MT	2.65



**FD Series 3-Gang Deep Type Condulets**

Continued



Type FDA



Type FDS

**Type FDA**

Threaded Thick Wall		Thick Wall		Threadless Thin Wall	
No.	Each	No.	Each	No.	Each
FDA23	\$2.10	FDA293	\$2.20	FDA23-MT	\$2.20
FDA33	2.25	FDA393	2.40	FDA33-MT	2.40

**Type FDS**

FDS223	\$2.45	FDS293	\$2.75	FDS223-MT	\$2.75
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**3-Gang Condulet Covers**

For FS and FD Series, Condulets, 3-Gang  
For Tumbler Flush Switches with Square Handles

**Sheet Steel**

No.	Each	Style
S323	\$ .45	Surface
SS323	.45	Flush

**Cast Feraloy—Guarded**

No.	Each	Style
S323g	\$1.00	Surface
SS323g	1.00	Flush

**Blank Metal Covers****Sheet Steel**

No.	Each	Style
S1003	\$ .40	Surface
SS1003	.40	Flush

**Cast Feraloy—with Gasket**

No.	Each	Style
S1003g	\$ .75	Surface
SS1003g	.75	Flush

**3-Gang Vaportight Covers**

For FS and FD Series Condulets, 3-Gang  
With Switch Operating Mechanism  
For External Operation of Tumbler Switches



Surface or flush; furnished with gasket.

Where the temperature exceeds 125°F., switches with heat-resisting buttons should be used.

**Cast Feraloy**

For Standard Operation  
"On" and "Off"

No.	Each
DS1283	\$4.25

For Momentary  
Contact Operation

No.	Each	Normally
DS1263	\$4.25	"On"
DS1273	4.25	"Off"

**Type ExF 3-Gang Extensions**

For FS and FD Series Condulets, 3-Gang



No. ExF13



No. ExF 43

No.	Each	ExF13	ExF43
Each		\$1.45	3.75
Extension Depth		1	4 5/8

**FS Series 4-Gang Shallow Type Condulets**

Take covers and shallow flush rectangular wiring devices.  
Overall dimensions of body, exclusive of hubs: Length, 4 3/32 inches; width, 8 3/8 inches; depth, 1 7/8 inches.

Condulets listed can be furnished with flat face (4 1/2 x 8 3/16 x 2 1/16 inches) to take standard wall plates at the same list prices; add suffix "S24" to number.

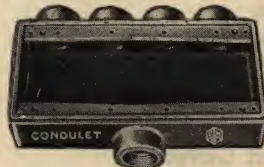
For wiring devices exceeding 1 3/4 inches in depth under the fastening ears, use Condulets of the FD series, 4 gang.



Type FS



Type FSC



Type FSD



Type FSA

**Type FS**

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
3/4	FS24	\$2.20	FS294	\$2.30	FS24-MT	\$2.30
1	FS34	2.40	FS394	2.55	FS34-MT	2.55

**Type FSC**

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
3/4	FSC24	\$2.35	FSC294	\$2.55	FSC24-MT	\$2.55
1	FSC34	2.50	FSC394	2.80	FSC34-MT	2.80

**\*Type FSD**

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	FSD14	\$2.60	FSD194	\$2.85	FSD14 -MT	\$2.85
3/4	FSD214	2.85	FSD2194	3.15	FSD214-MT	3.15
1	FSD314	3.10	FSD3194	3.45	FSD314-MT	3.45

**Type FSA**

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
3/4	FSA24	\$2.20	FSA294	\$2.30	FSA24-MT	\$2.30
1	FSA34	2.40	FSA394	2.55	FSA34-MT	2.55

\*The hubs at the top in the illustration are 1/2-inch.

**FD Series 4-Gang Deep Type Condulets**

Take covers and deep or shallow flush rectangular wiring devices.

Overall dimensions of body, exclusive of hubs: length, 4 3/32 inches; width, 8 3/8 inches; depth, 2 3/4 inches.



Type FD



Type FDC

**Type FD**

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
3/4	FD24	\$2.60	FD294	\$2.70	FD24-MT	\$2.70
1	FD34	2.80	FD394	2.95	FD34-MT	2.95

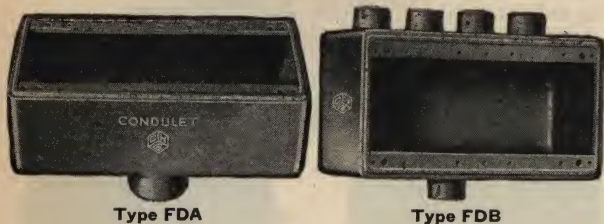
**Type FDC**

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
3/4	FDC24	\$2.75	FDC294	\$2.95	FDC24-MT	\$2.95
1	FDC34	2.90	FDC394	3.20	FDC34-MT	3.20



## FD Series 4-Gang Deep Type Condulets

Continued



Type FDA

Type FDB

## Type FDA

Size In.	Threaded			Threadless		
	Thick Wall No.	Each		Thick Wall No.	Each	Thin Wall No.
3/4	FDA24	\$2.60		FDA294	\$2.70	FDA24-MT
1	FDA34	2.80		FDA394	2.95	FDA34-MT

## \*Type FDB

1/2	FDB14	\$3.00	FDB194	\$3.25	FDB14-MT	\$3.25
3/4	FDB214	3.25	FDB2194	3.55	FDB214-MT	3.55
1	FDB314	3.50	FDB3194	3.85	FDB314-MT	3.85

\*The hubs at the top in the illustration are 1/2-inch.

## 4-Gang Condulet Covers

For FS and FD Series Condulets, 4-Gang  
Tumbler Flush Switches with Square Handles

Sheet Steel

No.	Each	Style
S324	\$ .60	Surface
SS324	.60	Flush

Cast Feraloy—Guarded

No.	Each	Style
S324g	\$1.40	Surface
S324g	1.40	Flush

Blank Metal Covers

Sheet Steel

No.	Each	Style
S1004	\$ .60	Surface
SS1004	.60	Flush

Cast Feraloy—With Gasket

No.	Each	Style
S1004g	\$1.00	Surface
S1004g	1.00	Flush

## 4-Gang Vaportight Covers

Surface or flush; furnished with  
gasket.Where the temperature exceeds  
125°F., switches with heat-resist-  
ing buttons should be used.For External Operation of Tumbler Switches  
Cast Feraloy

For Standard Operation "On" and "Off"			For Momentary Contact Operation		
No.	Each		No.	Each	Normally "On"
DS1284	\$5.00		DS1264	\$5.00	"On"
			DS1274	5.00	"Off"

Type ExF 4-Gang Extensions  
For FS and FD Series Condulets 4-Gang

No. ExF14



No. ExF44

No.	Each	ExF14	ExF44
Extension Depth		\$1.65	4.50
		1	4 5/8

## G-H Series Condulets

With Adjustable Bar

Take covers or round base wiring devices.



Type G



Type GL



Type GT



Type H

Type G  
Form 5

Size In.	Threaded			Threadless		
	Thick Wall No.	Each		Thick Wall No.	Each	Thin Wall No.
1/2	G151	\$ .55		G159	\$ .65	G151-MT
3/4	G252	.65		G259	.85	G252-MT
1	G353	.90				

## Form 10

1/2	G1101	\$ .55	G119	\$ .65	G1101-MT	\$ .65
3/4	G2102	.65	G219	.85	G2102-MT	.85
1	G3103	.90				

## Form 20

1/2	G1201	\$ .90				
3/4	G2202	.95				
1	G3203	1.20				

Type GL  
Form 5

Size In.	Threaded			Threadless		
	Thick Wall No.	Each		Thick Wall No.	Each	Thin Wall No.
1/2	GL151	\$ .60		GL159	\$ .70	GL151-MT
3/4	GL252	.70				
1	GL353	.95				

## Form 10

1/2	GL1101	\$ .60	GL119	\$ .70	GL1101-MT	\$ .70
3/4	GL2102	.70				
1	GL3103	.95				

## Form 20

1/2	GL1201	\$ .95				
3/4	GL2202	1.05				
1	GL3203	1.35				

Type GT  
Form 5

Size In.	Threaded			Threadless		
	Thick Wall No.	Each		Thick Wall No.	Each	Thin Wall No.
1/2	GT151	\$ .75		GT159	\$ .90	GT151-MT
3/4	GT252	.85		GT259	1.15	GT252-MT
1	GT353	1.10				

## Form 10

1/2	GT1101	\$ .75				
3/4	GT2102	.85				
1	GT3103	1.10				

## Form 20

1/2	GT1201	\$1.10				
3/4	GT2202	1.20				
1	GT3203	1.50				

Type H  
Form 5

Size In.	Threaded			Threadless		
	Thick Wall No.	Each		Thick Wall No.	Each	Thin Wall No.
1/2	H15	\$ .45		H159	\$ .50	H15-MT
3/4	H25	.55		H259	.65	
1	H35	.80				

## Form 10

1/2	H110	\$ .45	H119	\$ .50	H110-MT	\$ .50
3/4	H210	.55				
1	H310	.80				

## Form 20

1/2	H120	\$ .80				
3/4	H220	.85				
1	H320	1.10				

Forms 5, 10, and 20 indicate sizes of Condulets which take  
covers and wiring devices correspondingly classified.



### G-H Series Condulets With Adjustable Bar

Take covers or round base wiring devices.

Type GX

Type HA



Form 5

Form 5

#### Threaded Thick Wall

Size In.	No.	Each
1/2	GX151	\$ .90
3/4	GX252	1.00
1	GX353	1.35

Form 10

Size In.	No.	Each
1/2	GX1101	\$ .90
3/4	GX2102	1.00
1	GX3103	1.35

Form 20

Size In.	No.	Each
1/2	GX1201	\$1.25
3/4	GX2202	1.40
1	GX3203	1.80

#### Threaded Thick Wall

Size In.	No.	Each
1/2	HA15	\$ .50
3/4	HA25	.60
1	HA35	.85

Form 10

Size In.	No.	Each
1/2	HA110	\$ .50
3/4	HA210	.60
1	HA310	.85

Form 20

Size In.	No.	Each
1/2	HA120	\$ .85
3/4	HA220	.90
1	HA320	1.20

#### Covers and Accessories

##### For G-H Series—With Adjustable Bar

Cover

Gasket



Forms 5 and 10

No.	Each	Material
51000	\$ .10	Sheet Steel
51000g	.20	Feraloy

Form 20

No.	Each	Material
2000	\$ .25	Sheet Steel
2000g	.35	Feraloy

Gaskets for use between Condulets or adapters, and wiring devices or covers.

### G-H Series Condulets Without Adjustable Bar

Take covers or wiring devices.



Type G

Type GL

Type G  
Form 5

Size In.	Threaded Thick Wall		Threadless	
	No.	Each	No.	Each
1/2	G157	\$ .40	G1597	\$ .50
3/4	G257	.50	G2597	.70
1	G357	.75		

Form 10

Size In.	No.	Each	No.	Each
1/2	G117	\$ .40	G1197	\$ .50
3/4	G217	.50	G2197	.70
1	G317	.75		

Form 20

Size In.	No.	Each	No.	Each
1/2	G127	\$ .70	G127-MT	\$ .80
3/4	G227	.75	G227-MT	.90
1	G327	1.00	G327-MT	1.20

Type GL  
Form 5

Size In.	No.	Each	No.	Each
1/2	GL157	\$ .45	GL157-MT	\$ .55
3/4	GL257	.55	GL257-MT	.75
1	GL357	.80	GL357-MT	1.10

Form 10

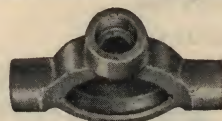
Size In.	No.	Each	No.	Each
1/2	GL117	\$ .45	GL117-MT	\$ .55
3/4	GL217	.55	GL217-MT	.75
1	GL317	.80	GL317-MT	1.10

Form 20

Size In.	No.	Each	No.	Each
1/2	GL127	\$ .75	GL127-MT	\$ .85
3/4	GL227	.85	GL227-MT	1.05
1	GL327	1.15	GL327-MT	1.45

### G-H Series Condulets Without Adjustable Bar

Take covers or wiring devices.



Type GT



Type H



Type GX



Type HA

Type GT  
Form 5

Size In.	Threaded Thick Wall		Threadless	
	No.	Each	No.	Each
1/2	GT157	\$ .60	GT1597	\$ .75
3/4	GT257	.70	GT2597	1.00
1	GT357	.95		

Form 10

Size In.	No.	Each	No.	Each
1/2	GT117	\$ .60	GT117-MT	\$ .75
3/4	GT217	.70	GT217-MT	1.00
1	GT317	.95	GT317-MT	1.40

Form 20

Size In.	No.	Each	No.	Each
1/2	GT127	\$ .90	GT127-MT	\$1.05
3/4	GT227	1.00	GT227-MT	1.30
1	GT327	1.30	GT327-MT	1.75

Type H  
Form 5

Size In.	No.	Each	No.	Each
1/2	H157	\$ .30	H1597	\$ .35
3/4	H257	.40	H2597	.50
1	H357	.65		

Form 10

Size In.	No.	Each	No.	Each
1/2	H117	\$ .30	H1197	\$ .35
3/4	H217	.40		
1	H317	.65		

Form 20

Size In.	No.	Each	No.	Each
1/2	H127	\$ .60	H127-MT	\$ .65
3/4	H227	.65	H227-MT	.75
1	H327	.90	H327-MT	1.05

Type GX  
Form 5

Size In.	Threaded Thick Wall		Threadless	
	No.	Each	No.	Each
1/2	GX157	\$ .75	HA157	\$ .35
3/4	GX257	.85	HA257	.45
1	GX357	1.20	HA357	.70

Form 10

Size In.	No.	Each	No.	Each
1/2	GX117	\$ .75	HA117	\$ .35
3/4	GX217	.85	HA217	.45
1	GX317	1.20	HA317	.70

Form 20

Size In.	No.	Each	No.	Each
1/2	GX127	\$1.05	HA127	\$ .65
3/4	GX227	1.20	HA227	.70
1	GX327	1.60	HA327	1.00

#### Covers and Accessories

##### For G-H Series Condulets—Without Adjustable Bar



Forms 5 and 10

No.	Each	Material	No.	Each	Material
51000	\$ .10	Sheet Steel	2000	\$ .25	Sheet Steel
51000g	.20	Feraloy	2000g	.35	Feraloy

Gaskets

For use between Condulets or adapters, and wiring devices or covers.

Forms 5 and 10

No.	Each	Material	No.	Each	Material
Gask21	\$ .10		Gask22	\$ .15	

Forms 5, 10 and 20 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.



## Covers and Accessories for G-H Series Condulets

### Without Adjustable Bar Cast Feraloy Receptacle Covers



No. H558

No. H559  
For 2½-Inch Shades

Takes lamp receptacle No. H557.

No.	Each	Description	Form
H558	\$ .50	No Shade Holder	5
H559	\$ .80	With Shade Holder	5

### No. H557 Lamp Receptacles Without Connection Block Without Shade Holder Groove



No.	Each	Watts	RATING	Volts
H557	\$ .25	660		600

One-piece porcelain. Gasket, No. Gask182, can be used between the Condulet and lamp receptacle, and when so used makes installation weatherproof.

### Gaskets



For use between Condulets and wiring devices or covers.

Form 5		Form 10		Form 20	
No.	Each	No.	Each	No.	Each
Gask120	\$ .10	Gask121	\$ .10	Gask107	\$ .15
Gask182	.15				



### Midget Guard Fixtures Complete Form 20 Weatherproof

Consists of holder, GH20; guard receptacle, C337; and gaskets.

No.	Each	Length Guard Inches	Size Lamps Watts
GH25	\$2.65	5¼	60
GH26	3.10	6	100

### Type H Flexible Fixture Hangers For Form 10 G-H Series Condulets Without Adjustable Bar For Pendant Fixtures



Size of fixture stem, ½-inch.

No.	Each	Weight Pounds	No.	Each	Weight Pounds
H1064	\$ .65	2-4	H1102	\$ .90	2-4
H1066	.65	4-8	H1103	.90	4-8
H1067	.65	8-16	H1104	.90	8-16
H1068	.65	16-30	H1111	.90	16-30

## GS Series Condulets

With Fastening Strap for Wiring Devices

Take covers, fixtures, round base snap switches, vapor-tight fixtures, receptacles with housings, or connection blocks.

### Type GS



Form 5

Size In.	No.	Each
1/2	GS15	\$ .90
3/4	GS25	1.05
1	GS35	1.25
Form 10		
1/2	GS110	\$ .90
3/4	GS210	1.05
1	GS310	1.25
Form 20		
1/2	GS120	\$1.50
3/4	GS220	1.65
1	GS320	1.85

### Type GSA



Form 5

Size In.	No.	Each
1/2	GSA15	\$ .90
3/4	GSA25	1.05
1	GSA35	1.25
Form 10		
1/2	GSA110	\$ .90
3/4	GSA210	1.05
1	GSA310	1.25
Form 20		
1/2	GSA120	\$1.50
3/4	GSA220	1.65
1	GSA320	1.85

### Type GSC



Form 5

Size In.	No.	Each
1/2	GSC15	\$1.00
3/4	GSC25	1.15
1	GSC35	1.35
Form 10		
1/2	GSC110	\$1.00
3/4	GSC210	1.15
1	GSC310	1.35
Form 20		
1/2	GSC120	\$1.60
3/4	GSC220	1.75
1	GSC320	1.95

### Type GSL



Form 5

Size In.	No.	Each
1/2	GSL15	\$1.00
3/4	GSL25	1.15
1	GSL35	1.35
Form 10		
1/2	GSL110	\$1.00
3/4	GSL210	1.15
1	GSL310	1.35
Form 20		
1/2	GSL120	\$1.60
3/4	GSL220	1.75
1	GSL320	1.95

### Type GST



Form 5

Size In.	No.	Each
1/2	GST15	\$1.20
3/4	GST25	1.35
1	GST35	1.55
Form 10		
1/2	GST110	\$1.20
3/4	GST210	1.35
1	GST310	1.55
Form 20		
1/2	GST120	\$1.80
3/4	GST220	2.00
1	GST320	2.30

### Type GSX



Form 5

Size In.	No.	Each
1/2	GSX15	\$1.35
3/4	GSX25	1.50
1	GSX35	1.80
Form 10		
1/2	GSX110	\$1.35
3/4	GSX210	1.50
1	GSX310	1.80
Form 20		
1/2	GSX120	\$1.95
3/4	GSX220	2.20
1	GSX320	2.70

Forms 5, 10, and 20 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.

If specified on order, GS Series Condulets will be furnished with lugs, 15 cents extra.

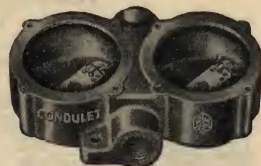


### GS Series 2-Gang Condulets with Lugs

Take covers, fixtures, round base snap switches, vapor-tight fixtures, plug receptacle housings, or connection blocks. Furnished with fastening straps for wiring devices.



Type GSB



Type GSD



Type GSE



Type GSC

#### Type GSB 2-Gang

	No.	Each	Size Inches
Form 5	GSB1529	\$2.10	1/2
	GSB2529	2.40	3/4
	GSB3529	2.80	1
Form 10	GSB1129	2.10	1/2
	GSB2129	2.40	3/4
	GSB3129	2.80	1
Form 20	GSB1229	3.30	1/2
	GSB2229	3.60	3/4
	GSB3229	4.00	1

#### Type GSD 2-Gang

	No.	Each	Size Inches
Form 5	GSD1529	\$2.30	1/2
	GSD2529	2.60	3/4
	GSD3529	3.00	1
Form 10	GSD1129	2.30	1/2
	GSD2129	2.60	3/4
	GSD3129	3.00	1
Form 20	GSD1229	3.50	1/2
	GSD2229	3.80	3/4
	GSD3229	4.20	1

#### Type GSE 2-Gang

	No.	Each	Size Inches
Form 5	GSE1529	\$2.10	1/2
	GSE2529	2.40	3/4
	GSE3529	2.80	1
Form 10	GSE1129	2.10	1/2
	GSE2129	2.40	3/4
	GSE3129	2.80	1
Form 20	GSE1229	3.30	1/2
	GSE2229	3.60	3/4
	GSE3229	4.00	1

#### Type GSC 2-Gang

	No.	Each	Size Inches
Form 5	GSC1529	\$2.30	1/2
	GSC2529	2.60	3/4
	GSC3529	3.00	1
Form 10	GSC1129	2.30	1/2
	GSC2129	2.60	3/4
	GSC3129	3.00	1
Form 20	GSC1229	3.50	1/2
	GSC2229	3.80	3/4
	GSC3229	4.20	1

### Covers for GS Series Condulets

#### Vaportight Switch Covers

Furnished with gasket.



No.	Each	Form	Max. Diam. Base In.
GS58	\$1.30	5	2 1/16
GS108	1.30	10	2 1/16
GS208	2.00	20	3 7/8

Forms 5, 10 and 20 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.  
Also available in GS 3-gang series.

### Covers for GS Series Condulets

#### Blank Covers

Furnished with gasket.

No.	Each	Form
GS50	\$1.50	5
GS100	.50	10
GS200	.90	20
Without Gasket		
GS50a	\$.40	5
GS100a	.50	10
GS200a	.75	20

Forms 5, 10, and 20 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.

### Lamp Receptacles for GS Series Condulets

#### Keyless—Composition

660 Watts, 600 Volts

No.	Without Lamp Grip Each	With Lamp Grip Each	Form
GS59	\$.50	....	5
GS569	....	\$.60	5

#### No. GS549 Key Receptacle

#### Armored—With Lamp Grip

250 Watts, 250 Volts

No.	Each	Form
GS549	\$2.00	5

### No. GS1631 Midget Guard Fixtures

#### For GS Series Condulets

Consists of holder, guard, receptacle and gaskets.



No.	Each	Length Guard In.	Form
GS1631	\$3.40	5 1/4	10

### Connection Blocks

#### For GS Series Condulets

#### Composition

20 Amperes, 125 Volts

No.	Each	Form	
CF210	\$.65	10 and 20	
CF209	\$.85	20	
			5-Wire
			2-Wire

### No. GS34 Fuse Block

#### For GS Series Condulets

#### Composition

Main Line, Two-Pole

30 Amperes, 250 Volts



No.	Each	Form
GS34	\$.75	20

### Type GS Flexible Fixture Hangers

#### For GS Series Condulets

#### For Pendant Fixtures



Size of fixture stem, 1/2-inch.

No.	Each	Weight Pounds	No.	Each	Weight Pounds
GS1302	\$1.20	2-4	GS1064	\$.85	2-4
GS1303	1.20	4-8	GS1066	.85	4-8
GS1304	1.20	8-16	GS1067	.85	8-16
GS1311	1.20	16-30	GS1068	.85	16-30

Forms 5, 10, and 20 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.



## Type GS Plug Receptacles with Housings

Cast Feraloy  
For GS Series Condulets

15 Amperes, 125 Volts or 10 Amperes, 250 Volts

For standard attachment plug caps.



With  
Spring Door



Without  
Spring Door



With  
Threaded Cap

### With Spring Door

Form	2-Wire, 2-Pole No.	Each	2-Wire, 3-Pole No.	Each	3-Wire, 3-Pole No.	Each
5	GS583	\$3.10	GS584	\$3.80	GS591	\$3.80
10	GS183	3.10	GS184	3.80	GS191	3.80
20	GS283	3.70	GS284	4.40	GS291	4.40

### Without Spring Door

5	GS585	\$1.50	GS586	\$2.20	GS592	\$2.20
10	GS185	1.50	GS186	2.20	GS192	2.20
20	GS285	2.10	GS286	2.80	GS292	2.80

### With Threaded Cap

Furnished with gasket.

5	GS581	\$2.65	GS582	\$3.35	GS590	\$3.35
10	GS181	2.65	GS182	3.35	GS190	3.35
20	GS281	3.25	GS282	3.95	GS290	3.95

\*Third pole grounded.

†Take Type WP watertight plug.

## Type BRG Plug Receptacle Housings

For GS Series Condulets

\*30 Amperes, 250 Volts A.C.

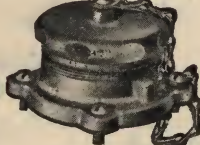
These housings take type BP plugs.



With  
Spring Door



Without  
Spring Door



With  
Threaded Cap

### With Spring Door

Form	2-Pole No.	Each	3-Pole No.	Each	4-Pole No.	Each
5	BRG56302	\$4.10				
10	BRG16302	4.10	BRG16303	\$5.05	BRG16304	\$5.90
20	BRG26302	4.70	BRG26303	5.55	BRG26304	6.40

### Without Spring Door

10	BRG1302	\$2.50	BRG1303	\$3.25	BRG1304	\$3.90
20	BRG2302	3.10	BRG2303	3.75	BRG2304	4.40

### With Threaded Cap

Furnished with gasket.

10	BRG18302	\$3.65	BRG18303	\$4.85	BRG18304	\$5.95
20	BRG28302	4.25	BRG28303	5.35	BRG28304	6.45

For Flexible Conductor, Flexible Conduit, or

Armored Conductor

†Without Clamping Nut

\*30 Amperes, 250 Volts A.C.



Furnished with cable clamp, cast aluminum handle (non-watertight).

Diam. Opening in Cable Clamp, Inches	2-Pole No.	Each	3-Pole No.	Each	4-Pole No.	Each
.500 to .875	BP532	\$2.85				
.625 to 1.125			BP533	\$3.75	BP534	\$4.50

\*Can be used on 25-ampere, 125-volt, d.c. circuits; or on 30-ampere, 250-volt, d.c. circuits if circuit is broken before plug is withdrawn.

†Also available with clamping nut.

## Type GS Vaportight Fixtures For GS Series Form 20 Condulets

Screw Guard Type

Form 100 is furnished with No. V75 and No. V911 guard, and takes 50, 60, 75, or 100-watt lamps.

Form 200 is furnished with No. V200 globe and No. V912 guard, and takes 150 or 200-watt lamps.



Pendent Type

### Pendent Type

Form	No.	Each	Without Globe and Guard	Each
100	GS675	\$4.75	GS6	\$2.15
200	GS8200	5.50	GS8	2.45
100	GS775	\$4.75	GS7	\$2.15
200	GS9200	5.50	GS9	2.45

Bracket Type

## SE Series Condulets

Take 3/4-inch outlet box round base wiring devices.

### Type SE



Size In.	No.	Each
1/2	SE1	\$ .80
3/4	SE2	.90
1	SE3	1.10

### Type SEC



Size In.	No.	Each
1/2	SEC1	\$ .95
3/4	SEC2	1.05
1	SEC3	1.25

### Type SET



Size In.	No.	Each
1/2	SET1	\$1.05
3/4	SET2	1.15
1	SET3	1.35

### Type SEX



Size In.	No.	Each
1/2	SEX1	\$1.15
3/4	SEX2	1.25
1	SEX3	1.45

## SEH Series Condulets

Take 4-inch outlet box round base wiring devices or SEH covers.

### Type SEH



Size In.	No.	Each
1/2	SEH1	\$ .80
3/4	SEH2	.90
1	SEH3	1.10

### Type SEHC



Size In.	No.	Each
1/2	SEHC1	\$ .95
3/4	SEHC2	1.05
1	SEHC3	1.25

### Type SEHT



Size In.	No.	Each
1/2	SEHT1	\$1.05
3/4	SEHT2	1.15
1	SEHT3	1.35

### Type SEHX



Size In.	No.	Each
1/2	SEHX1	\$1.15
3/4	SEHX2	1.25
1	SEHX3	1.45



## Covers and Gaskets

## For SE and SEH Series Condulets

Covers can be used with or without gaskets.

## Blank Covers

No.	Each	No.	Each	Material	Size Hub In.
SE000	\$.65	SEH000	\$.15	Sheet Steel	..
SE00		SEH00	.30	Feraloy	..

## Hub Covers

SE83	\$.70	SEH83	\$.65	Feraloy	3/8
SE84	.70	SEH84	.65	Feraloy	1/2

## Gaskets

For use between condulets and covers or wiring devices.

Gask156	\$.20	Gask202	\$.20	.....	..
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## SK Series Condulets

## For Concealed Installations in Concrete

Take covers, vaportight fixtures, or 3/4-inch outlet box around base wiring devices with 2 3/4-inch screw centers.

A gasket is made for use with blank covers, so that when used with SK Series Condulets, an excellent watertight junction is provided.

## Type SK

Size In.	2-Inch Depth		3-Inch Depth	
	No.	Each	No.	Each
1/2	SK12	\$1.00	SK13	\$1.15
3/4	SK22	1.10	SK23	1.25
1	SK32	1.20	SK33	1.35

## Type SKC

1/2	SKC12	\$1.10	SKC13	\$1.25
3/4	SKC22	1.20	SKC23	1.35
1	SKC32	1.30	SKC33	1.45

## Type SKL

1/2	SKL12	\$1.10	SKL13	\$1.25
3/4	SKL22	1.20	SKL23	1.35
1	SKL32	1.30	SKL33	1.45

## Type SKT

1/2	SKT12	\$1.20	SKT13	\$1.35
3/4	SKT22	1.30	SKT23	1.45
1	SKT32	1.40	SKT33	1.55

## Type SKX

1/2	SKX12	\$1.30	SKX13	\$1.45
3/4	SKX22	1.40	SKX23	1.55
1	SKX32	1.50	SKX33	1.65

## Covers and Gaskets

## For SK Series Condulets

## Blank Covers

No.	Each	Material	Size Hub In.
SK809	\$.30	Cast Feraloy	..

## Hub Covers

SK83	\$.65	Cast Feraloy	3/8
SK84	.65	Cast Feraloy	1/2
SK86	.75	Cast Feraloy	3/4

## Gaskets

For use between Condulets and wiring devices or covers.

Gask208	\$.25	.....	..
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## Type ARB Vaportight Industrial Lighting Fixtures

## For SK Series Condulets, or 3/4 or 4-Inch Outlet Boxes

## Screw Guard Type



Form 100 is furnished with No. V75 globe and No. V911 guard, and takes 50, 60, 75 or 100-watt lamps.

Form 200 is furnished with No. V200 globe and No. V912 guard, and takes 150 or 200-watt lamps.

Form	With Globe and Guard		Without Globe and Guard	
	No.	Each	No.	Each
100	ARB31	\$4.10	ARB32	\$1.50
200	ARB33	4.75	ARB34	1.70

Forms 100 and 200 indicate sizes of vaportight fixtures. Accessories and parts are correspondingly classified.

If specified, lamp receptacle with lamp grip will be furnished at an advance of 10 cents in list price.

If specified, pigtail receptacle will be furnished at an advance of 45 cents in list price.

## GRF Series Condulets



Body Only With Lugs

GRF Series Condulets take flush or surface covers, vaportight lighting fixtures, fixture hangers and receptacles with housings.



Body Only Without Lugs

## Bodies Only—Without Tapping Cast Feraloy

Inside Depth In.	Without Lugs		With Lugs	
	No.	Each	No.	Each
1 1/2	GRF1	\$.50	GRF19	\$.60
2 1/4	GRF2	.70	GRF29	.80
3	GRF3	1.20	GRF39	1.30

## Brass

1 1/2	GRF1B	\$1.45	GRF19B	\$1.70
2 1/4	GRF2B	2.00	GRF29B	2.25
3	GRF3B	3.50	GRF39B	3.75

Indicate size and location of holes to be drilled and tapped. Add 5 cents each for 1/2 or 3/4-in. holes and 10 cents for 1-inch holes.

## Covers for GRF Series Condulets

## Blank Metal Covers

No.	Surface		No.	Flush		Material
	Each			Each		
GRF10	\$.30		GRF50	\$.40		Feraloy
GRF10B	.60		GRF50B	.80		Brass

## Hub Covers

No.	Surface		No.	Flush		Material	Size Hub In.
	Each			Each			
GRF11	\$.40		GRF51	\$.50		Feraloy	1/2
GRF11B	.90		GRF51B	1.10		Brass	1/2
GRF12	.50		GRF52	.60		Feraloy	3/4
GRF12B	1.10		GRF52B	1.35		Brass	3/4


## Gaskets

Gask643	\$.10	GRF643	\$.10	Rubber	..
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## Type ARB Flexible Fixture Hangers

For Pendant Fixtures with 1/2-Inch Stems  
Cushion Hanger

	Surface		Flush		Weight Pounds
	No.	Each	No.	Each	
	ARB142	\$ .75	ARB144	\$ .85	2 to 4
	ARB82	.75	ARB84	.85	4 to 8
	ARB102	.75	ARB104	.85	8 to 16
	ARB122	.75	ARB124	.85	16 to 30

## Type ARB Receptacles with Housings



Take Type BP plugs.

## With Spring Door

2-pole		3-pole		4-pole		Material
No.	Each	No.	Each	No.	Each	
ARB321	\$4.45	ARB331	\$5.40	ARB341	\$6.25	Feraloy
ARB3021	8.00	ARB3031	9.50	ARB3041	10.80	Brass

ARB221	\$4.55	ARB231	\$5.50	ARB241	\$6.35	Feraloy
ARB2021	8.25	ARB2031	9.75	ARB2041	11.05	Brass

## Without Spring Door

ARB323	\$2.85	ARB333	\$3.60	ARB343	\$4.25	Feraloy
ARB3023	4.40	ARB3033	5.50	ARB3043	6.30	Brass

ARB223	\$2.95	ARB233	\$3.70	ARB243	4.35	Feraloy
ARB2023	4.65	ARB2033	5.75	ARB2043	6.55	Brass

## With Threaded Cap

Surface						Material
No.	Each	No.	Each	No.	Each	
ARB327	\$4.00	ARB337	\$5.20	ARB347	\$6.30	Feraloy
ARB3027	5.85	ARB3037	7.40	ARB3047	8.95	Brass

ARB227	\$4.10	ARB237	\$5.30	ARB247	\$6.40	Feraloy
ARB2027	6.10	ARB2037	7.65	ARB2047	9.20	Brass

Type ARB Vaportight Industrial Lighting  
FixturesFor Surface or Flush Mounted GRF Series Condulets  
Screw Guard Type

Pendant Type

Bracket Type

Form 100 is furnished with No. V75 globe and No. V911 guard, and takes 50, 60, 75, or 100-watt lamps.

Form 200 is furnished with No. V200 globe and No. V912 guard, and takes 150 or 200-watt lamps.

Made of cast Feraloy.

Form	Style	Pendant Type		Bracket Type	
		No.	Each	No.	Each
100	Surface	ARB91	\$4.75	ARB95	\$4.50
100	Flush	ARB58	4.75	ARB54	4.50
200	Surface	ARB93	5.50	ARB97	5.15
200	Flush	ARB59	5.50	ARB56	5.15

## J-K Series Condulets



Type J

Type K

Take wiring devices or blank covers.

## Type J

Size In.	Threaded Thick Wall		Threadless Thick Wall		Threadless Thin Wall	
	No.	Each	No.	Each	No.	Each
1/2	J1	\$ .60	J19	\$ .80	J1MT	\$ .80
3/4	J2	.75	J29	1.00	J2MT	1.00
1	J3	1.05	...	...	...	...
1/2	K1	\$ .50	Type K			
3/4	K2	.65	K19	\$ .60	K1MT	\$ .60
1	K3	.95	...	...	...	...

## Wiring Devices for J-K Series Condulets

2-Pole Attachment Plug Receptacles  
15 Amperes, 125 Volts or 10 Amperes, 250 Volts

No.	Double T-Slots		Material
	Each		
CC5	\$ .50	IT-Slots	Porcelain
CC35	\$ .50		Porcelain

2-Pole Polarity Plug Receptacles  
20 Amperes, 250 Volts

No.	Each	Material
CC20	\$ .65	Porcelain

\*3-Pole Attachment Plug Receptacles  
15 Amperes, 125 Volts or 10 Amperes, 250 Volts

No.	3-Wire		Material
	Each		
CC13	\$ .70	2-Wire	Porcelain
CC17	\$ .75		Porcelain

2-Pole Twist Lock Receptacles  
20 Amperes, 250 Volts

No.	Each	Material
CC16	\$ .75	Porcelain

Lamp Receptacles  
660 Watts, 600 Volts  
With Shade Holder Groove

No.	Each	Material
CC227g	\$ .45	Porcelain

Without Shade Holder  
Groove

CC227	\$ .40	Porcelain
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Cord Rosettes  
660 Watts, 250 Volts

No.	Each	Material
CC332	\$ .50	Porcelain

\*Extra pole grounded.

For lamp receptacle with lamp grip, add 10 cents.

## Cover—Twistlock

15 Amperes, 125 Volts, or 10 Amperes, 250 Volts



No.	Each	Description
CC22	\$1.50	Cast aluminum cover, composition receptacle.
CC24	1.50	3-Wire, 3-Pole
		2-Wire, 3-Pole
		(Extra pole grounded)

## Cover—Blank

Feraloy.  
J100\$ .30  
GasketFor use between Condulets and wiring devices or covers.  
Gask71 \$ .10



## Vaportight Industrial Lighting Condulets

## V and VH Series—Clamp Guard Type

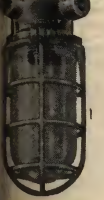
Cast aluminum guards. Cast Feraloy Condulets.  
Form 100 is furnished with No. V75 globe and No. V97 guard, and takes 50, 60, 75, or 100-watt lamps.  
Form 200 is furnished with No. V200 globe and No. VH99 guard, and takes 150 or 200-watt lamps.



Size In.	Type V Form 100			
	With Globe and Guard		Without Globe and Guard	
	No.	Each	No.	Each
1/2	V189	\$4.50	V1	\$1.90
3/4	V289	4.55	V2	1.95
1	V389	4.60	V3	2.00

Types V  
and VH

Size In.	Type VH Form 200			
	No.	Each	No.	Each
1/2	VH189	\$5.40	VH1	\$2.35
3/4	VH289	5.45	VH2	2.40
1	VH389	5.50	VH3	2.45

Types VC  
and VHC

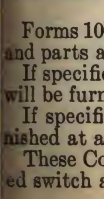
Size In.	Type VC Form 100			
	No.	Each	No.	Each
1/2	VC1189	\$4.60	VC11	\$2.00
3/4	VC2289	4.70	VC22	2.10
1	VC3389	4.80	VC33	2.20

Types VHC  
and VHL

Size In.	Type VHC Form 200			
	No.	Each	No.	Each
1/2	VHC1189	\$5.50	VHC11	\$2.45
3/4	VHC2289	5.60	VHC22	2.55
1	VHC3389	5.65	VHC33	2.60

Types VL  
and VHL

Size In.	Type VL Form 100			
	No.	Each	No.	Each
1/2	VL1189	\$4.60	VL11	\$2.00
3/4	VL2289	4.70	VL22	2.10
1	VL3389	4.80	VL33	2.20

Types VHL  
and VHT

Size In.	Type VHL Form 200			
	No.	Each	No.	Each
1/2	VHL1189	\$5.50	VHL11	\$2.45
3/4	VHL2289	5.60	VHL22	2.55
1	VHL3389	5.65	VHL33	2.60

Size In.	Type VT Form 100			
	No.	Each	No.	Each
1/2	VT11189	\$4.75	VT111	\$2.15
3/4	VT22289	4.85	VT222	2.25
1	VT33389	5.05	VT333	2.45

Size In.	Type VHT Form 200			
	No.	Each	No.	Each
1/2	VHT11189	\$5.60	VHT111	\$2.55
3/4	VHT22289	5.75	VHT222	2.70
1	VHT33389	5.85	VHT333	2.80

Size In.	Type VDA Form 100			
	No.	Each	No.	Each
1/2	VDA189	\$4.50	VDA1	\$1.90
3/4	VDA289	4.55	VDA2	1.95
1	VDA389	4.60	VDA3	2.00

Size In.	Type VHDA Form 200			
	No.	Each	No.	Each
1/2	VHDA189	\$5.40	VHDA1	\$2.35
3/4	VHDA289	5.45	VHDA2	2.40
1	VHDA389	5.50	VHDA3	2.45

Forms 100 and 200 indicate sizes of condulets. Accessories and parts are correspondingly classified.

If specified on the order, lamp receptacle with lamp grip will be furnished at an advance of 10 cents in the list price.

If specified on the order, pigtail receptacle will be furnished at an advance of 45 cents in the list price.

These Condulets can be equipped with externally operated switch at an advance of \$1.00 in the list price.

## Vaportight Industrial Lighting Condulets

## V and VH Series—Clamp Guard Type

Continued

Types VJ  
and VHJTypes VG  
and VHJTypes VE  
and VHE

Type V



Type VC



Type VL

Cast aluminum guards. Cast Feraloy Condulets.

Form 100 is furnished with No. V75 globe and No. V97 guard, and takes 50, 60, 75, or 100-watt lamps.

Form 200 furnished with No. V200 globe and No. VH99 guard, takes 150 or 200-watt lamps.

Size In.	Type VJ Form 100			
	With Globe and Guard		Without Globe and Guard	
	No.	Each	No.	Each
1/2	VJ1189	\$5.15	VJ11	\$2.55
3/4	VJ2289	5.25	VJ22	2.65
1	VJ3389	5.35	VJ33	2.75

Size In.	Type VHJ Form 200			
	No.	Each	No.	Each
1/2	VHJ1189	\$5.90	VHJ11	\$2.85
3/4	VHJ2289	6.00	VHJ22	2.95
1	VHJ3389	6.10	VHJ33	3.05

Size In.	Type VG Form 100			
	No.	Each	No.	Each
1/2	VG189	\$4.75	VG1	\$2.15
3/4	VG289	4.85	VG2	2.25
1	VG389	4.95	VG3	2.35

Size In.	Type VHJ Form 200			
	No.	Each	No.	Each
1/2	VHJ1189	\$5.50	VHJ11	\$2.45
3/4	VHJ2289	5.60	VHJ22	2.55
1	VHJ3389	5.70	VHJ33	2.65

Size In.	Type VE Form 100			
	No.	Each	No.	Each
1/2	VE189	\$4.75	VE1	\$2.15
3/4	VE289	4.85	VE2	2.25
1	VE389	4.95	VE3	2.35

Size In.	Type VHE Form 200			
	No.	Each	No.	Each
1/2	VHE189	\$5.50	VHE1	\$2.45
3/4	VHE289	5.60	VHE2	2.55
1	VHE389	5.70	VHE3	2.65

## V Series—Screw Guard Type

Form 100 is furnished with No. V75 globe and No. V911 guard, and takes 50, 60, 75, or 100-watt lamps.

Form 200 furnished with No. V200 globe and No. V912 guard, takes 150 or 200-watt lamps.

Size In.	Type V Form 100			
	No.	Each	No.	Each
1/2	V1759	\$4.50	V175	\$1.90
3/4	V2759	4.55	V275	1.95
1	V3759	4.60	V375	2.00

Size In.	Form 200			
	No.	Each	No.	Each
1/2	V12009	\$5.40	V1200	\$2.35
3/4	V22009	5.45	V2200	2.40
1	V32009	5.50	V3200	2.45

Size In.	Type VC Form 100			
	No.	Each	No.	Each
1/2	VC1759	\$4.60	VC175	\$2.00
3/4	VC2759	4.70	VC275	2.10
1	VC3759	4.80	VC375	2.20

Size In.	Form 200			
	No.	Each	No.	Each
1/2	VC12009	\$5.50	VC1200	\$2.45
3/4	VC22009	5.60	VC2200	2.55
1	VC32009	5.65	VC3200	2.60

Size In.	Type VL Form 100			
	No.	Each	No.	Each
1/2	VL1759	\$4.60	VL175	\$2.00
3/4	VL2759	4.70	VL275	2.10
1	VL3759	4.80	VL375	2.20

Size In.	Form 200			
	No.	Each	No.	Each
1/2	VL12009	\$5.50	VL1200	\$2.45
3/4	VL22009	5.60	VL2200	2.55
1	VL32009	5.65	VL3200	2.60



## Vaportight Industrial Lighting Condulets

## Accessories and Parts

## V Series—Screw Guard Type

Continued



Type VT



Type VX



Type VDA



Type VJ



Type VG



Type VE

## Type VT

## Form 100

Size In.	With Globe and Guard		Without Globe and Guard	
	No.	Each	No.	Each
1/2	VT1759	\$4.75	VT175	\$2.15
3/4	VT2759	4.85	VT275	2.25
1	VT3759	5.05	VT375	2.45

## Form 200

1/2	VT12009	\$5.60	VT1200	\$2.55
3/4	VT22009	5.75	VT2200	2.70
1	VT32009	5.85	VT3200	2.80

## Type VX

## Form 100

1/2	VX1759	\$4.85	VX175	\$2.25
3/4	VX2759	5.05	VX275	2.45
1	VX3759	5.20	VX375	2.60

## Form 200

1/2	VX12009	\$5.70	VX1200	\$2.65
3/4	VX22009	5.90	VX2200	2.85
1	VX32009	6.05	VX3200	3.00

## Type VDA

## Form 100

1/2	VDA1759	\$4.50	VDA175	\$1.90
3/4	VDA2759	4.55	VDA275	1.95
1	VDA3759	4.60	VDA375	2.00

## Form 200

1/2	VDA12009	\$5.40	VDA1200	\$2.35
3/4	VDA22009	5.45	VDA2200	2.40
1	VDA32009	5.50	VDA3200	2.45

## Type VJ

## Form 100

1/2	VJ1759	\$5.15	VJ175	\$2.55
3/4	VJ2759	5.25	VJ275	2.65
1	VJ3759	5.35	VJ375	2.75

## Form 200

1/2	VJ12009	\$5.90	VJ1200	\$2.85
3/4	VJ22009	6.00	VJ2200	2.95
1	VJ32009	6.10	VJ3200	3.05

## Type VG

## Form 100

1/2	VG1759	\$4.75	VG175	\$2.15
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## Form 200

1/2	VG12009	\$5.50	VG1200	\$2.45
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## Type VE

## Form 100

1/2	VE1759	\$4.75	VE175	\$2.15
3/4	VE2759	4.85	VE275	2.25

## Form 200

1/2	VE12009	\$5.50	VE1200	\$2.45
3/4	VE22009	5.60	VE2200	2.55

For V and VH Series Condulets, Clamp Guard Type  
and V Series Condulets, Screw Guard Type

## Globes



Description	Form 100 5 3/8 In. Long		Form 100 6 3/4 In. Long		Form 200 9 1/4 In. Long	
	No.	Each	No.	Each	No.	Each
Clear	V15	\$ .80	V75	\$ .80	V200	\$ .80
Opal	VN51	1.10	VN71	1.10	VO201	1.70
Green	VN52	1.70	VN72	1.70	VO202	2.35
Blue	VN53	1.70	VN73	1.70	VO203	2.35
Orange	VN54	1.70	VN74	1.70	VO204	2.35
Ruby	VN55	1.70	VN75	1.70	VO205	2.35
Amber	VN56	1.70	VN76	1.70	VO206	2.35

## Prismatic Diffusing Globes

Clear	V103	\$ .80	V93	\$2.00
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## Heat Resisting Globes

Clear	V153	\$1.25	V63	\$1.25	V93	\$2.00
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For V and VH Series  
Clamp Guard Type

## Guards



Cast aluminum.

No.	Each	Form	For Globe In.	No.	Each	Form	For Globe In.
V95	\$1.80	100	5 3/8	V910	\$1.80	100	5 3/8
V97	1.80	100	6 3/4	V911	1.80	100	6 3/4
VH99	2.25	200	9 1/4	V912	2.25	200	9 1/4

Guards for Use with  
Pear-Shaped Globes

Steel, tinned finish.

V948	\$1.80	100	...	V946	\$1.80	100	...
VH949	2.25	200	...	V947	2.25	200	...

Guards with Reflector  
Holders

Cast aluminum.

V913	\$1.80	100	6 3/4	V911	\$1.80	100	6 3/4
VH914	2.25	200	9 1/4	V912	2.25	200	9 1/4

\*Reflector Holders



V625	\$ .50	100	...	V623	\$ .50	100	...
VH626	.65	200	...	V624	.65	200	...

\*For clamping reflector to Condulet when guard is not used.



## Accessories and Parts

Continued

For V and VH Series Condulets, Clamp Guard Type  
and V Series Condulets, Screw Guard Type

## Half Shades

Made of sheet aluminum.

## Form 100

Clamp Guard Type		Screw Guard Type	
No.	Each	No.	Each
SH1	\$ .50	V97	....
SH7	.50	V95	....
....	....	V910	\$ .50
....	....	V911	.50
SH2	1.00	Form 200	
....	....	VH99	....
....	....	*V912	*V919 \$1.00

\*Made of sheet copper.

## Receptacles—Keyless

600 Watts, 600 Volts  
Forms 100 and 200

No.	Each	Material
V46	\$ .65	Porcelain
GS126M2	.65	Composition

## Receptacles—Shock-Absorbing

660 Watts, 600 Volts  
Forms 100 and 200

No.	Each	Material
V56	\$1.25	Composition
No. V56 for use with Pear-Shaped Globes V105 and V205 only.		

## Pear-Shaped Globes

Clear globes. Cannot be used with straight guards.

## Form 100

No.	Each	Lamp Size Watts
V105	\$ .80	50, 60, 75, 100
V205	\$ .80	150
V205	.80	200

## Form 200

## Dome Reflectors

## Form 100

No.	Each	Lamp Size Watts	Diam. In.	Depth In.
SH27	\$2.75	50, 60, 75, 100	12	5 1/8
SH28	\$3.25	150	14	6 1/4
SH29	3.75	200	16	7 3/8

## Form 200

## Shallow Bowl Reflectors

## Form 100

No.	Each	Lamp Size Watts	Diam. In.	Depth In.
SH57	\$2.25	50, 60, 75, 100	12	3 3/8
SH58	\$2.75	150	14	4 3/16
SH59	3.25	200	16	4 5/16

## Form 200

## Deep Bowl Reflectors

## Form 100

No.	Each	Lamp Size Watts	Diam. In.	Depth In.
SH47	\$2.75	50, 60, 75, 100	8	5 1/16
SH48	\$3.25	150	10	7
SH49	3.75	200	10	7 1/4

## Form 200

## 30° Angle Reflectors

## Form 100

No.	Each	Lamp Size Watts	Diam. In.	Depth In.
†SH67	\$2.00	50, 60, 75, 100	10	8 1/4
†SH68	\$3.50	150	12	10 3/4
†SH68	3.50	200	12	10 3/4

## Form 200

Type VDB Vaportight Industrial Lighting  
Fixtures with Reflectors

Type VDB is a cast aluminum fixture of the vaportight type, designed to meet the need for a simple, effective, and inexpensive vaportight industrial lighting fixture.

Made so that dust or vapor cannot enter the conduit system even if the globe is removed or broken. The opening into the conduit system is entirely closed by the lamp receptacle.

Furnished with a clear, plain pear-shaped globe, and a porcelain enameled reflector. The reflector is held to the body by four screws.

## Form 3

Furnished with No. VDB3 globe, reflector, and medium base lamp receptacle.



## With Shallow Bowl Reflectors

Lamp Size Watts	Size In.	No.	Each
150	1 1/2	VDB13	\$6.75
150	3/4	VDB23	6.75
200	1 1/2	VDB17	8.25
200	3/4	VDB27	8.25

## Reflectors Only

Lamp Size Watts	Size In.	No.	Each
150	14	VDB113	\$2.55
200	16	VDB117	4.05

## With Dome Reflectors

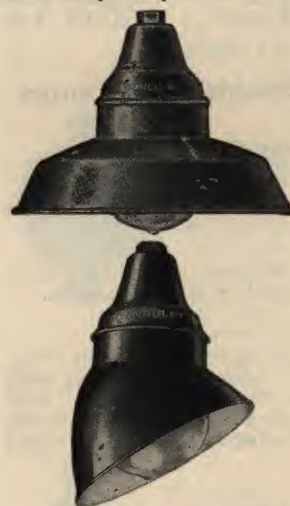
Lamp Size Watts	Size In.	No.	Each
150	1 1/2	VDB138	\$6.75
150	3/4	VDB238	6.75
200	1 1/2	VDB139	8.25
200	3/4	VDB239	8.25

## Reflectors Only

Lamp Size Watts	Size In.	No.	Each
150	14	VDB28	\$2.55
200	16	VDB29	4.05

## Form 5

Furnished with No. VDB5 globe, reflector, and mogul base lamp receptacle.



## With Dome Reflectors

Lamp Size Watts	Size In.	No.	Each
300, 500	1 1/2	VDB15	\$10.75
300, 500	3/4	VDB25	10.75

## Reflectors Only

Lamp Size Watts	Size In.	No.	Each
300, 500	18	VDB115	\$5.15

## With 30° Angle Reflectors

Lamp Size Watts	Size In.	No.	Each
300, 500	1 1/2	VDB145	\$10.00
300, 500	3/4	VDB245	10.00

## Reflectors Only

Lamp Size Watts	Size In.	No.	Each
300, 500	14	VDB215	\$4.40

Unless otherwise specified, fixtures are shipped completely assembled.

Accessories for Vaportight  
Industrial Lighting Fixtures

## Pear-Shaped Globes

## Clear

## Form 3

Lamp Size Watts	No.	Each	Heat Resisting No.	Each
150, 200	VDB3	\$1.20	VBD6	\$2.70
300, 500	VDB5	\$1.60	VDB8	\$3.60

## Form 5

## Basket Wire Guards

Steel, tinned finish.

For use with reflectors listed above; also with reflectors for V and VH series Condulets.



No.	V932	V934	V936	V938
Each	\$1.50	1.80	2.10	2.50
For Size Reflector.....inches	12	14	16	18

†Center line of Condulet must be located 4 5/8 inches from the wall for mounting angle reflector.

†Center line of Condulet must be located 4 7/8 inches from the wall for mounting angle reflector.

Reflectors are green porcelain enamel outside and white porcelain enamel inside.



## Type VXHA Vaportight Industrial Lighting Condulets

### Clamp Guard Type and Screw Guard Type

Has five hubs flush with the surface of the body. The hubs have integral bushings. Four of the hubs are spaced 90° apart around the side of the Condulet, while the fifth hub is placed in the center of the top of the Condulet. Condulet is furnished with four flush type threaded pipe plugs.

Furnished with V75 globe, and takes 50, 60, 75, or 100-watt lamps. Clamp guard type has V97 guard; and screw guard type, V911 guard.

Cast aluminum guards. Cast Feraloy condulets.



### Clamp Guard Type

#### Form 100

Size In.	With Globe and Guard		Without Globe and Guard	
	No.	Each	No.	Each
1/2	VXHA112	\$4.85	VXHA11	\$2.25
3/4	VXHA212	5.05	VXHA21	2.45
1	VXHA312	5.20	VXHA31	2.60

#### Form 200

Size In.	With Globe and Guard		Without Globe and Guard	
	No.	Each	No.	Each
1/2	VXHA152	\$5.70	VXHA151	\$2.65
3/4	VXHA252	5.90	VXHA251	2.85
1	VXHA352	6.05	VXHA351	3.00

### Screw Guard Type

#### Form 100

Size In.	With Globe and Guard		Without Globe and Guard	
	No.	Each	No.	Each
1/2	VXHA1199	\$4.85	VXHA119	\$2.25
3/4	VXHA2199	5.05	VXHA219	2.45
1	VXHA3199	5.20	VXHA319	2.60

#### Form 200

Size In.	With Globe and Guard		Without Globe and Guard	
	No.	Each	No.	Each
1/2	VXHA1299	\$5.70	VXHA129	\$2.65
3/4	VXHA2299	5.90	VXHA229	2.85
1	VXHA3299	6.05	VXHA329	3.00

## Guards for Type VS Vaportight Portable Hand Lamps

Made of steel wire.



Clamp Guard  
100-Watt Size

### Clamp Guard

No. ....	VS95	VS97
Each. ....	\$2.00	2.00
For Globe.....inches	5 3/8	6 3/4

## Globes for Type VS Vaportight Portable Hand Lamps

### Clear



Size Inches	Plain		Heat-Resisting	
	No.	Each	No.	Each
5 5/8	V18	\$ .80	V183	\$1.25
6 3/4	V75	.80	V63	1.25

## Safety Hand Lamps

### Types LPG and LPH

Takes 15 to 100-watt lamps.

Seasoned maple handle, black enameled.

Aluminum alloy guard and half shade.



Type  
LPG24



Type  
LPH24

No. LPG24, with Guard.....	each	\$3.00
No. LPH24, with Guard and Half-Shade.....	each	3.15

## Type VS Vaportight Portable Hand Lamps

### Clamp Guard Type

Made of cast aluminum, with rubber handle.

Furnished with globe, guard, receptacle, gasket, and vaportight gland in handle.



100-Watt Size

No.	Each	Size Lamp Watts	Size Cable Inches	Size Globe Inches
VS20	\$6.15	60	.250 to .625	5 5/8
VS30	6.15	100	.250 to .625	6 3/4

### Screw Guard Type

Made of cast aluminum with hardwood handle.

Furnished with globe, guard, receptacle, gasket, cord guard spring, and vaportight gland in handle.

Has additional binding screw terminal for grounding.



60-Watt Size

No.	Each	Size Lamp Watts	Size Cable Inches	Size Globe Inches
VS91	\$6.15	60	.250 to .625	5 5/8
VS92	6.15	100	.250 to .625	6 3/4

## Type VS Vaportight Portable Hand Lamps

Handle and globe holder made of moulded rubber in one piece.

One end of the handle is provided with a tapered rubber bushing and moulded composition gland nut. Bushing clamps the cord and protects it where it leaves the handle.



Lamp Watts	Cord Inches	Without Hook		With Interchangeable Hook	
		No.	Each	No.	Each
100	.250 to .625	VS121	\$11.25	VS120	\$11.50
60	.250 to .625	VS126	12.75	VS125	13.00

### Accessories

#### Clear Pear-Shaped Globes

Made of heat-resisting glass.

No. VS51, Heat-Resisting, For 100-Watt Lamps.....each \$2.00

No. VS52, Impact Resisting, For 60-Watt Lamps.....each 3.50

#### Guards

Made of steel wire with tinned finish. For 100 and 60-watt lamps.

No. VS931, Without Hook.....each \$2.25

No. VS930, With Interchangeable Hook.....each 2.50

No. VS110 Keyless Lamp Receptacles  
660 Watts, 600 Volts

Made of composition.

No. VS110.....each \$.65



If specified on order, lamp receptacle with lamp grip will be furnished at an advance of 10 cents in price.



## AL Series Flexible Fixture Hanger Condulets

### For Pendent Fixtures

AL series Condulets provide a flexible suspension for electrical fixtures. The fixtures are suspended from a universal joint which assures that the fixture will hang plumb. It also prevents breaking the fixture stem at the point of suspension, due to strains set up by the wind or by accidental impact. This universal joint permits the fixture to swing through an angle of about 20 degrees in any direction from the perpendicular.

### Type ALA Ball Hangers THREADED

No.	Thick Wall Each	Wt. Fixture Lbs	Size, In. Fixture Stem	Conduit
ALA1	\$ .65	.....	1/2	1/2
ALA21	.75	.....	1/2	3/4
ALA22	.85	.....	3/4	3/4

### Type ALA Cushion Hangers

ALA14	\$1.40	3	1/2	1/2
ALA214	1.50	to 6	1/2	3/4
ALA224	1.60		3/4	3/4
ALA18	1.40	6	1/2	1/2
ALA218	1.50	to 12	1/2	3/4
ALA228	1.60		3/4	3/4
ALA116	1.40	12	1/2	1/2
ALA2116	1.50	to 24	1/2	3/4
ALA2216	1.60		3/4	3/4

### Type ALC Ball Hangers

ALC1	\$ .75	.....	1/2	1/2
ALC21	.85	.....	1/2	3/4
ALC31	.95	.....	1/2	1
ALC22	.95	.....	3/4	3/4
ALC32	1.05	.....	3/4	1

### Type ALC Cushion Hangers

ALC14	\$1.50	3	1/2	1/2
ALC214	1.60	to 6	1/2	3/4
ALC314	1.70		1/2	1
ALC224	1.70		3/4	3/4
ALC324	1.80		3/4	1
ALC18	1.50	6	1/2	1/2
ALC218	1.60	to 12	1/2	3/4
ALC318	1.70		1/2	1
ALC228	1.70		3/4	3/4
ALC328	1.80		3/4	1
ALC116	1.50	12	1/2	1/2
ALC2116	1.60	to 24	1/2	3/4
ALC3116	1.70		1/2	1
ALC2216	1.70		3/4	3/4
ALC3216	1.80		3/4	1

### Type ALL Ball Hangers

ALL1	\$ .75	.....	1/2	1/2
ALL21	.85	.....	1/2	3/4
ALL22	.95	.....	3/4	3/4

### Type ALL Cushion Hangers

ALL14	\$1.50	3 to 6	1/2	1/2
ALL214	1.60	3 to 6	1/2	3/4
ALL224	1.70	3 to 6	3/4	3/4
ALL18	1.50	6 to 12	1/2	1/2
ALL218	1.60	6 to 12	1/2	3/4
ALL228	1.70	6 to 12	3/4	3/4
ALL216	1.50	12 to 24	1/2	1/2
ALL2116	1.60	12 to 24	1/2	3/4
ALL2216	1.70	12 to 24	3/4	3/4
ALL1132	1.50	24 to 48	1/2	1/2
ALL2132	1.60	24 to 48	1/2	3/4
ALL2232	1.70	24 to 48	3/4	3/4
ALL1164	1.50	48 to 64	1/2	1/2
ALL2164	1.60	48 to 64	1/2	3/4
ALL2264	1.70	48 to 64	3/4	3/4

## AL Series Flexible Fixture Hanger Condulets

### Type ALT Ball Hangers

No.	Each	Fixture Weight Pounds	Fixture Stem Inches	Conduit Inches
ALT1	\$ .85	.....	1/2	1/2
ALT21	.95	.....	1/2	3/4
ALT31	1.05	.....	1/2	1
ALT22	1.05	.....	3/4	3/4
ALT32	1.15	.....	3/4	1

### Type ALT Cushion Hangers

ALT14	\$1.60	3 to 6	1/2	1/2
ALT214	1.70	3 to 6	1/2	3/4
ALT314	1.80	3 to 6	1/2	1
ALT224	1.80	3 to 6	3/4	3/4
ALT324	1.90	3 to 6	3/4	1
ALT18	1.60	6 to 12	1/2	1/2
ALT218	1.70	6 to 12	1/2	3/4
ALT318	1.80	6 to 12	1/2	1
ALT228	1.80	6 to 12	3/4	1
ALT328	1.90	6 to 12	3/4	1
ALT116	1.60	12 to 24	1/2	1/2
ALT2116	1.70	12 to 24	1/2	3/4
ALT3116	1.80	12 to 24	1/2	1
ALT2216	1.80	12 to 24	3/4	3/4
ALT3216	1.90	12 to 24	3/4	1
ALT1132	1.60	24 to 48	1/2	1/2
ALT2132	1.70	24 to 48	1/2	3/4
ALT3132	1.80	24 to 48	1/2	1
ALT2232	1.80	24 to 48	3/4	3/4
ALT3232	1.90	24 to 48	3/4	1
ALT1164	1.60	48 to 64	1/2	1/2
ALT2164	1.70	48 to 64	1/2	3/4
ALT3164	1.80	48 to 64	1/2	1
ALT2264	1.80	48 to 64	3/4	3/4
ALT3264	1.90	48 to 64	3/4	1

### Connection Block

For AL Series Fixture Hanger Condulets

2-Wire, 20 Amperes, 125 Volts

No. CB308 Porcelain.....each \$.30

### Flexible Fixture Hangers

#### Type AHG Vaportight

##### Cushion Hangers

No.	Each	Fixture Weight Pounds	Fixture Stem Inches	Male Nipple Inches
AGH11102	\$1.45	2 to 4	1/2	1/2
AGH21102	1.50	2 to 4	1/2	3/4
AGH11103	1.45	4 to 8	1/2	1/2
AGH21103	1.50	4 to 8	1/2	3/4
AGH11104	1.45	8 to 16	1/2	1/2
AGH21104	1.50	8 to 16	1/2	3/4
AGH11111	1.45	16 to 30	1/2	1/2
AGH21111	1.50	16 to 30	1/2	3/4

#### Types UNJ and UNJC

For supporting pendent fixtures so that they will always hang plumb, even though supported from an inclined surface. The hangers can be used in conjunction with Condulets. They will allow the fixture to swing through an angle of 20° in any direction from the perpendicular.

##### Type UNJ Ball Hangers

No.	Each	Stem In.	Hub In.
UNJ1308	\$ .65	3/8	1/2
UNJ1	.65	1/2	1/2
UNJ2308	.75	3/8	3/4
UNJ21	.75	1/2	3/4
UNJ2	.75	3/4	3/4

##### Type UNJC Cushion Hangers

Provided with spring which carries the weight of the fixture and absorbs any shocks due to vibration or other causes.

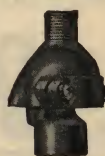
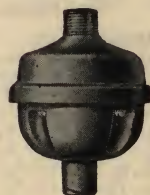
No.	Each	Stem In.	Hub In.	Fixture Weight Pounds
UNJC12	\$1.35	1/2	1/2	1 1/2-3
UNJC22	1.60	3/4	3/4	1 1/2-3
UNJC14	1.35	1/2	1/2	3-6
UNJC24	1.60	3/4	3/4	3-6
UNJC18	1.35	1/2	1/2	6-12
UNJC28	1.60	3/4	3/4	6-12
UNJC116	1.35	1/2	1/2	12-24
UNJC216	1.60	3/4	3/4	12-24
UNJC132	1.45	1/2	1/2	24-48
UNJC232	1.70	3/4	3/4	24-48



Ball



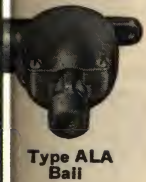
Cushion



Type UNJ  
Ball



Type UNJC  
Cushion



Type ALA  
Ball



Type ALA  
Cushion



Type ALC  
Ball



Type ALC  
Cushion



Ball



Cushion



## Type ARB Flexible Fixture Hangers

For use on concealed conduit systems. Provide flexible suspension for pendent fixtures with 1/2-inch conduit stem. Fastening screws spaced 3 1/2 inches center to center are provided for use on standard 4-inch outlet boxes.



Type ARB Ball



Type ARB Cushion

Ball Hangers			Size
No.	Each		In.
ARB6	\$ .55		1/2
Cushion Hangers			Fixture Weight Pounds
No.	Each		
ARB14	\$ .65		2-4
ARB8	.65		4-8
ARB10	.65		8-16
ARB12	.65		16-30

## Type OFH Flexible Fixture Cushion Hangers

## For Pendent Fixtures

Weatherproof

Has 1/2-inch hole for bolt or hook.



No.	Each	Weight Fixture Pounds	Size Fixture Stem, In.
OFH114	\$1.25	2 to 4	1/2
OFH124	1.25	2 to 4	3/4
OFH116	1.25	4 to 8	1/2
OFH126	1.25	4 to 8	3/4
OFH117	1.25	8 to 16	1/2
OFH127	1.25	8 to 16	3/4
OFH118	1.25	16 to 30	1/2
OFH128	1.25	16 to 30	3/4
OFH119	1.25	30 to 48	1/2
OFH129	1.25	30 to 48	3/4
OFH219	1.25	48 to 64	1/2
OFH229	1.25	48 to 64	3/4

Size Fix. Stem, In.  
1/2  
3/4  
Male

## Type UNH Rigid Hangers

Male		Female	
No.	Each	No.	Each
UNH16	\$ .30	UNH1	\$ .25
UNH26	.35	UNH2	.30



Female

## Type UNHC Cushion Hangers



No.	Each	Weight Fixture Pounds	Size Fixture Stem, In.
UNHC12	\$ .75	1 1/2 to 3	1/2
UNHC22	.80	1 1/2 to 3	3/4
UNHC14	.75	3 to 6	1/2
UNHC24	.80	3 to 6	3/4
UNHC18	.75	6 to 12	1/2
UNHC28	.80	6 to 12	3/4
UNHC116	.75	12 to 24	1/2
UNHC216	.80	12 to 24	3/4
UNHC132	.75	24 to 48	1/2
UNHC232	.80	24 to 48	3/4
UNHC164	.75	48 to 64	1/2
UNHC264	.80	48 to 64	3/4

Size Fix. Stem, In.  
1/2  
3/4  
Male

## Type UNE Fixture Loops

Male		Female	
No.	Each	No.	Each
UNE16	\$ .30	UNE1	\$ .25
UNE26	.35	UNE2	.30



Female

## Type OSA Suspension Hangers



No.	Each	Size Conduit Inches	Max. Diam. Span Wire Inches	Support Rod Tap Inches
OSA3	\$ .35	1/2	3/8	3/8-16
OSA3	.35	3/4	3/8	3/8-16
OSA3	.35	1	3/8	3/8-16
OSA4	.40	1 1/4	3/8	3/8-16

## Type CHS Suspension Clamps



No.	Each	Size Conduit Inches	Max. Diam. Span Wire Inches
CHS143	\$ .10	1/2	3/8
CHS243	.11	3/4	3/8
CHS343	.12	1	3/8

## AR Series Condulets

AR Series Condulets take Arktite receptacle housings.

## Type ARRH

Size In.	Form B Condulets Take 20 and 30-Ampere Housings		Form C Condulets Take 60-Ampere Housings	
	No.	Each	No.	Each
1/2	ARRH13	\$ .90	ARRH16	\$1.30
3/4	ARRH23	1.00	ARRH26	1.40
1	ARRH33	1.10	ARRH36	1.50
1 1/4	.....	.....	ARRH46	1.60
1 1/2	.....	.....	ARRH56	1.70

## Type ARRC

1/2	ARRC13	\$1.00	ARRC16	\$1.40
3/4	ARRC23	1.10	ARRC26	1.50
1	ARRC33	1.20	ARRC36	1.60
1 1/4	.....	.....	ARRC46	1.70
1 1/2	.....	.....	ARRC56	1.80

## Type ARE

1/2	ARE13	\$1.00	ARE16	\$1.45
3/4	ARE23	1.10	ARE26	1.55
1	ARE33	1.20	ARE36	1.65
1 1/4	.....	.....	ARE46	1.75
1 1/2	.....	.....	ARE56	1.85

## Type ARDF

1/2	ARDF13	\$1.15	ARDF16	\$1.60
3/4	ARDF23	1.25	ARDF26	1.70
1	ARDF33	1.35	ARDF36	1.80
1 1/4	.....	.....	ARDF46	1.90
1 1/2	.....	.....	ARDF56	2.00

## Type ARJ

1/2	ARJ13	\$1.30	ARJ16	\$1.75
3/4	ARJ23	1.40	ARJ26	1.85
1	ARJ33	1.50	ARJ36	1.95
1 1/4	.....	.....	ARJ46	2.05
1 1/2	.....	.....	ARJ56	2.15

## Type ARD

1/2	ARD13	\$1.45	ARD16	\$1.90
3/4	ARD23	1.55	ARD26	2.00
1	ARD33	1.65	ARD36	2.10
1 1/4	.....	.....	ARD46	2.20
1 1/2	.....	.....	ARD56	2.30

## Type ARJG

1/2	ARJG13	\$1.20	ARJG16	\$1.70
3/4	ARJG23	1.30	ARJG26	1.80
1	ARJG33	1.40	ARJG36	1.90
1 1/4	.....	.....	ARJG46	2.00
1 1/2	.....	.....	ARJG56	2.10

## Type ARJK

1/2	ARJK13	\$1.00	ARJK16	\$1.45
3/4	ARJK23	1.10	ARJK26	1.55
1	ARJK33	1.20	ARJK36	1.65
1 1/4	.....	.....	ARJK46	1.75
1 1/2	.....	.....	ARJK56	1.85

## Type ARJP

1/2	ARJP13	\$1.00	ARJP16	\$1.45
3/4	ARJP23	1.10	ARJP26	1.55
1	ARJP33	1.20	ARJP36	1.65
1 1/4	.....	.....	ARJP46	1.75
1 1/2	.....	.....	ARJP56	1.85

## Type ARRA

1/2	ARRA13	\$ .90	ARRA16	\$1.30
3/4	ARRA23	1.00	ARRA26	1.40
1	ARRA33	1.10	ARRA36	1.50
1 1/4	.....	.....	ARRA46	1.60
1 1/2	.....	.....	ARRA56	1.70

## 15° Angle Adapters

For types ARRA, ARRC, and ARRH Condulets. Adapters listed below are furnished with gaskets and take Arktite receptacle housings.

Types AJ, AJA, and AJC Condulets are square, and therefore types AJ and AJC can be mounted with the hubs at top, bottom, right, or left.

... AR30 \$1.50 AR60 \$2.00



## AJ Series Condulets and Conduit Hub Plates

## Type AJ With 60-Ampere Straight Adapter, Form C

Size, In.	No.	Each
3/4	AJ23	\$7.00
1	AJ33	7.05
1 1/4	AJ43	7.10
1 1/2	AJ53	7.15
2	AJ63	7.20

## Type AJC With 60-Ampere Straight Adapter, Form C

Size, In.	No.	Each
3/4	AJC23	\$7.15
1	AJC33	7.25
1 1/4	AJC43	7.35
1 1/2	AJC53	7.45
2	AJC63	7.55

## Type AJ With 100-Ampere Straight Adapter, Form D

Size, In.	No.	Each
3/4	AJ24	\$7.40
1	AJ34	7.45
1 1/4	AJ44	7.50
1 1/2	AJ54	7.55
2	AJ64	7.60

## Type AJC With 100-Ampere Straight Adapter, Form D

Size, In.	No.	Each
3/4	AJC24	\$7.55
1	AJC34	7.65
1 1/4	AJC44	7.75
1 1/2	AJC54	7.85
2	AJC64	7.95

## Type AJ With 60 and 100-Amperes, Angle Adapter, Forms C and D

Size, In.	No.	Each
3/4	AJ27	\$7.65
1	AJ37	7.70
1 1/4	AJ47	7.75
1 1/2	AJ57	7.80
2	AJ67	7.85

## Type AJC With 60 and 100-Amperes, Angle Adapter, Forms C and D

Size, In.	No.	Each
3/4	AJC27	\$7.80
1	AJC37	7.90
1 1/4	AJC47	8.00
1 1/2	AJC57	8.10
2	AJC67	8.20

## Type AJ With 200-Ampere Angle Adapter, Form E

Size, In.	No.	Each
1 1/2	AJ58	\$13.95
2	AJ68	14.05
2 1/2	AJ78	14.15

## Type AJ With 400-Ampere Angle Adapter, Form F

Size, In.	No.	Each
2	AJ69	\$31.55
2 1/2	AJ79	31.65
3	AJ89	31.75

## Type AJX



Condulet



Adapter

Furnished with gaskets for hub plates.  
Takes four hub plates.

## Condulet

No.	Each	Rating Amps.	Series
AJX88	\$9.55	200	YYP8
AJX99	18.95	400	YYP9

No.	Each
AJ45	\$6.05
AJ245	11.05

## Hub Plates



Hub Plate



Blank Plate

Hub Size	No.	Each
2 1/2	YYP87	\$1.15
2 1/2	YYP97	\$3.75
3	YYP98	4.00

No.	Each
YYP800	\$4.40
YYP900	\$2.75

## Arktype Extension Cable Connectors

Style 1—Grounded Through Shell With Rubber Bushing—Watertight  
20, 30, 60, 100, 200, and 400 Amperes  
\*250 Volts D.C., 600 Volts A.C.

20, 30, 60 or 100 Amperes



200 or 400 Amperes

Diam. Cable Inches		Complete		Receptacle Only		Plug Only	
		No.	Each	No.	Each	No.	Each
.250 to .500		APC2251	\$13.60	APR2251	\$7.00	AP2271	\$6.50
.500 to .875		APC2253	13.60	APR2253	7.00	AP2273	6.60
.500 to .875		APC3253	\$15.00	APR3253	\$7.75	AP3273	\$7.25
.500 to .875		APC3353	\$16.20	APR3353	\$8.30	AP3373	\$7.90
.500 to .875		APC3453	\$17.80	APR3453	\$9.10	AP3473	\$8.70
.500 to .875		APC3553	\$20.25	APR3553	\$10.30	AP3573	\$9.95
.500 to .875		APC6253	\$23.85	APR6253	\$13.10	AP6273	\$10.75
.875 to 1.375		APC6255	23.85	APR6255	13.10	AP6275	10.75
.500 to .875		APC6353	\$25.60	APR6353	\$14.10	AP6373	\$11.50
.875 to 1.375		APC6355	25.60	APR6355	14.10	AP6375	11.50
.500 to .875		APC6453	\$28.60	APR6453	\$16.10	AP6473	\$12.50
.875 to 1.375		APC6455	28.60	APR6455	16.10	AP6475	12.50
.500 to .875		APC10253	\$35.00	APR10253	\$19.50	AP10273	\$15.50
.875 to 1.375		APC10255	35.00	APR10255	19.50	AP10275	15.50
1.375 to 1.875		APC10257	35.00	APR10257	19.50	AP10277	15.50
.500 to .875		APC10353	\$37.00	APR10353	\$20.50	AP10373	\$16.50
.875 to 1.375		APC10355	37.00	APR10355	20.50	AP10375	16.50
1.375 to 1.875		APC10357	37.00	APR10357	20.50	AP10377	16.50
.500 to .875		APC10453	\$41.00	APR10453	\$22.50	AP10473	\$18.50
.875 to 1.375		APC10455	41.00	APR10455	22.50	AP10475	18.50
1.375 to 1.875		APC10457	41.00	APR10457	22.50	AP10477	18.50
.875 to 1.375		APC20215	\$87.50	APR20215	\$47.50	AP20255	\$40.00
1.375 to 1.875		APC20217	87.50	APR20217	47.50	AP20257	40.00
1.875 to 2.500		APC20218	87.50	APR20218	47.50	AP20258	40.00
.875 to 1.375		APC20315	\$93.75	APR20315	\$50.75	AP20355	\$43.00
1.375 to 1.875		APC20317	93.75	APR20317	50.75	AP20357	43.00
1.875 to 2.500		APC20318	93.75	APR20318	50.75	AP20358	43.00
.875 to 1.375		APC20415	\$111.00	APR20415	\$60.00	AP20455	\$51.00
1.375 to 1.875		APC20417	111.00	APR20417	60.00	AP20457	51.00
1.875 to 2.500		APC20418	111.00	APR20418	60.00	AP20458	51.00

## †200 Amperes

## 2-Wire, 2-Pole

## 3-Wire, 3-Pole

## 4-Wire, 4-Pole

## †400 Amperes

## 2-Wire, 2-Pole

## 3-Wire, 3-Pole

## 4-Wire, 4-Pole

\*Except 400-ampere size, which is rated at 200 amperes only, at 600 volts, a.c.

†The 20-ampere plugs and receptacles are interchangeable with former 15-ampere plugs and receptacles; 30-ampere (except the 2-wire, 2-pole), with former 15-ampere; 60-ampere, with former 30-ampere; 100-ampere, with former 60-ampere; 200-ampere, with former 100-ampere; 400 ampere, with former 200-ampere.

‡Has binding screw terminals, all others have soldered terminals.



## Arktite Receptacle Housings

20, 30, 60, and 100-Ampere  
250 Volts D.C., 600 Volts A.C.

## Arktite Receptacle Housings



Spring Door



Plain

## Types AP and APJ Plugs



With Cable Clamp



With Rubber Cable Grip

Receptacles will take any of the plugs grouped in the bracket opposite the receptacle listings.

*20-Ampere										
For AR Series—Form B										
Style 1—Grounded through Shell										
Description	Spring Door		Plain		Diam. Cable Inches		No.		With Rubber Cable Grip	
	No.	Each	No.	Each			No.		No.	Each
2-Wire, 2-Pole	AR221	\$5.45	AR223	\$4.75	.313 to .500	AP2211	\$4.85	.250 to .500	APJ2251	\$5.50
					.500 to .750	AP2212	4.85	.500 to .875	APJ2253	5.50
*30-Ampere										
For AR Series—Form B										
Style 1—Grounded through Shell										
2-Wire, 2-Pole	AR321	\$6.25	AR323	\$5.55	.438 to .750	AP3212	\$5.50	.500 to .875	APJ3253	\$6.15
					.688 to .938	AP3214	5.50			
3-Wire, 3-Pole	AR331	6.75	AR333	6.05	.438 to .750	AP3312	6.15	.500 to .875	APJ3353	6.80
					.688 to .938	AP3314	6.15			
					.875 to 1.188	AP3315	6.15			
4-Wire, 4-Pole	AR341	7.55	AR343	6.85	.438 to .750	AP3412	6.95	.500 to .875	APJ3453	7.60
					.688 to .938	AP3414	6.95			
					.875 to 1.188	AP3415	6.95			
5-Wire, 5-Pole	AR351	8.75	AR353	8.05	.500 to .875	AP3513	8.20	.500 to .875	APJ3553	8.85
Style 2—Grounded through Extra Pole and Shell										
2-Wire, 3-Pole	AR332	\$7.75	AR334	\$7.05	.438 to .750	AP3322	\$7.15	.500 to .875	APJ3363	\$7.80
					.688 to .938	AP3324	7.15			
					.875 to 1.188	AP3325	7.15			
3-Wire, 4-Pole	AR342	8.55	AR344	7.85	.438 to .750	AP3422	7.95	.500 to .875	APJ3463	8.60
					.688 to .938	AP3424	7.95			
					.875 to 1.188	AP3425	7.95			
4-Wire, 5-Pole	AR352	10.30	AR354	9.60	.500 to .875	AP3523	9.85	.500 to .875	APJ3563	10.50
*60-Ampere										
For AR and AJ Series—Form C										
Style 1—Grounded through Shell										
2-Wire, 2-Pole	AR621	\$10.00	AR623	\$8.75	.500 to .875	AP6213	\$7.75	.500 to .875	APJ6253	\$8.75
					.750 to 1.188	AP6215	7.75			
3-Wire, 3-Pole	AR631	11.00	AR633	9.75	.500 to .875	AP6313	8.50	.875 to 1.375	APJ6255	8.75
					.750 to 1.188	AP6315	8.50			
4-Wire, 4-Pole	AR641	13.00	AR643	11.75	.688 to 1.000	AP6414	9.50	.500 to .875	APJ6353	9.50
					.938 to 1.469	AP6416	9.50			
5-Wire, 5-Pole	AR651	15.00	AR653	13.75	.875 to 1.250	AP6513	10.50	.875 to 1.375	APJ6355	9.50
					1.250 to 1.625	AP6515	10.50			
Style 2—Grounded through Extra Pole and Shell										
2-Wire, 3-Pole	AR632	\$12.25	AR634	\$11.00	.500 to .875	AP6323	\$9.75	.500 to .875	APJ6363	\$10.75
					.750 to 1.188	AP6325	9.75			
3-Wire, 4-Pole	AR642	14.25	AR644	13.00	.688 to 1.000	AP6424	10.75	.875 to 1.375	APJ6365	10.75
					.938 to 1.469	AP6426	10.75			
4-Wire, 5-Pole	AR652	16.25	AR654	15.00	.875 to 1.250	AP6523	11.75	.500 to .875	APJ6463	11.75
					1.250 to 1.625	AP6525	11.75			
*100-Ampere										
For AJ Series—Form D										
Style 1—Grounded through Shell										
2-Wire, 2-Pole	AR1021	\$13.00	AR1023	\$11.50	.750 to 1.188	AP10215	\$12.50	.500 to .875	AP10253	\$14.00
					1.188 to 1.813	AP10217	12.50			
3-Wire, 3-Pole	AR1031	14.00	AR1033	12.50	.750 to 1.188	AP10315	13.50	.875 to 1.375	AP10255	14.00
					1.188 to 1.813	AP10317	13.50			
4-Wire, 4-Pole	AR1041	16.00	AR1043	14.50	.938 to 1.313	AP10416	15.50	1.375 to 1.875	AP10257	14.00
					1.313 to 2.063	AP10417	15.50			
Style 2—Grounded through Extra Pole and Shell										
2-Wire, 3-Pole	AR1032	\$15.50	AR1034	\$14.00	.750 to 1.188	AP10325	\$15.00	.500 to .875	AP10363	\$16.50
					1.188 to 1.813	AP10327	15.00			
3-Wire, 4-Pole	AR1042	17.50	AR1044	16.00	.938 to 1.313	AP10426	17.00	.875 to 1.375	AP10365	16.50
					1.313 to 2.063	AP10427	17.00			
4-Wire, 5-Pole	AR1052	19.50	AR1054	18.00	1.250 to 1.625	AP10523	18.50	1.375 to 1.875	AP10367	16.50
					1.625 to 2.125	AP10525	18.50			

\*20-ampere plugs and receptacles are interchangeable with former 15-ampere plugs and receptacles; 30-ampere (except the 2-wire, 2-pole), with former 15-ampere; 60-ampere, with former 30-ampere; 100-ampere, with former 60-ampere.

†100-ampere, also furnished with auxiliary metal cable clamp.

‡20-ampere, 2-pole plugs and receptacles have binding screw terminals, all others have soldered terminals.



## Arktime Receptacle Housings

20, 30, 60, and 100-Ampere  
250 Volts D.C., 600 Volts A.C.

## Arktime Receptacle Housings



Threaded



With Cap

Types AP and APJ Plugs  
With Fastening Ring

With Cable Clamp



With Rubber Cable Grip

Receptacles will take any of the plugs grouped in the bracket opposite the receptacle listings.

**\*20-Ampere**

For AR Series—Form B

## Style 1—Grounded through Shell

Description	Threaded		With Cap		With Cable Clamp			With Rubber Cable Grip		
	No.	Each	No.	Each	Diam. Cable Inches	No.	Each	Diam. Cable Inches	No.	Each
2-Wire, 2-Pole	AR 225	\$5.00	AR 227	\$5.80	.500 to .750	AP2232	\$5.45	.250 to .500	APJ2271	\$6.10
								.500 to .875	APJ2273	6.10

**\*30-Ampere**

For AR Series—Form B

## Style 1—Grounded through Shell

2-Wire, 2-Pole	AR 325	\$5.80	AR 327	\$6.60	.438 to .750	AP 3232	\$6.10	.500 to .875	APJ3273	\$6.75
					.688 to .938	AP 3234	6.10			
3-Wire, 3-Pole	AR 335	6.30	AR 337	7.10	.438 to .750	AP 3332	6.75	.500 to .875	APJ3373	7.40
					.688 to .938	AP 3334	6.75			
					.875 to 1.188	AP 3335	6.75			
4-Wire, 4-Pole	AR 345	7.10	AR 347	7.90	.438 to .750	AP 3432	7.55	.500 to .875	APJ3473	8.20
					.688 to .938	AP 3434	7.55			
					.875 to 1.188	AP 3435	7.55			
5-Wire, 5-Pole	AR 355	8.30	AR 357	9.10	.500 to .875	AP 3533	8.80	.500 to .875	APJ3573	9.45

## Style 2—Grounded through Extra Pole and Shell

2-Wire, 3-Pole	AR 336	\$7.30	AR 338	\$8.10	.438 to .750	AP 3342	\$7.75	.500 to .875	APJ3383	\$8.40
					.688 to .938	AP 3344	7.75			
					.875 to 1.188	AP 3345	7.75			
3-Wire, 4-Pole	AR 346	8.10	AR 348	8.90	.438 to .750	AP 3442	8.55	.500 to .875	APJ3483	9.20
					.688 to .938	AP 3444	8.55			
					.875 to 1.188	AP 3445	8.55			
4-Wire, 5-Pole	AR 356	9.75	AR 358	10.55	.500 to .875	AP 3543	10.45	.500 to .875	APJ3583	11.10

**\*60-Ampere**

For AR and AJ Series—Form C

## Style 1—Grounded through Shell

2-Wire, 2-Pole	AR 625	\$9.10	AR 627	\$10.20	.500 to .875	AP 6233	\$8.75	.500 to .875	APJ6273	\$9.75
					.750 to 1.188	AP 6235	8.75	.875 to 1.375	APJ6275	9.75
3-Wire, 3-Pole	AR 635	10.10	AR 637	11.20	.500 to .875	AP 6333	9.50	.500 to .875	APJ6373	10.50
					.750 to 1.188	AP 6335	9.50	.875 to 1.375	APJ6375	10.50
4-Wire, 4-Pole	AR 645	12.10	AR 647	13.20	.688 to 1.000	AP 6434	10.50	.500 to .875	APJ6473	11.50
					.938 to 1.469	AP 6436	10.50	.875 to 1.375	APJ6475	11.50

## Style 2—Grounded through Extra Pole and Shell

2-Wire, 3-Pole	AR 636	\$11.35	AR 638	\$12.45	.500 to .875	AP 6343	\$10.75	.500 to .875	APJ6383	\$11.75
					.750 to 1.188	AP 6345	10.75	.875 to 1.375	APJ6385	11.75
3-Wire, 4-Pole	AR 646	13.35	AR 648	14.45	.688 to 1.000	AP 6444	11.75	.500 to .875	APJ6483	12.75
					.938 to 1.469	AP 6446	11.75	.875 to 1.375	APJ6485	12.75

**\*100-Ampere**

For AJ Series—Form D

## Style 1—Grounded through Shell

2-Wire, 2-Pole	AR1025	\$12.00	AR1027	\$14.00	.750 to 1.188	AP10235	\$14.00	.500 to .875	AP10273	\$15.50
					1.188 to 1.813	AP10237	14.00	.875 to 1.375	AP10275	15.50
3-Wire, 3-Pole	AR1035	13.00	AR1037	15.00	.750 to 1.188	AP10335	15.00	1.375 to 1.875	AP10277	15.50
					1.188 to 1.813	AP10337	15.00	.500 to .875	AP10373	16.50
4-Wire, 4-Pole	AR1045	15.00	AR1047	17.00	.938 to 1.313	AP10436	17.00	.875 to 1.375	AP10375	16.50
					1.313 to 2.063	AP10437	17.00	1.375 to 1.875	AP10377	16.50
								.500 to .875	AP10473	18.50
								.875 to 1.375	AP10475	18.50
								1.375 to 1.875	AP10477	18.50

## Style 2—Grounded through Extra Pole and Shell

2-Wire, 3-Pole	AR1036	\$14.50	AR1038	\$16.50	.750 to 1.188	AP10345	\$16.50	.500 to .875	AP10383	\$18.00
					1.188 to 1.813	AP10347	16.50	.875 to 1.375	AP10385	18.00
3-Wire, 4-Pole	AR1046	16.50	AR1048	18.50	.938 to 1.313	AP10446	18.50	1.375 to 1.875	AP10387	18.00
					1.313 to 2.063	AP10447	18.50	.500 to .875	AP10483	20.00
								.875 to 1.375	AP10485	20.00
								1.375 to 1.875	AP10487	20.00

\*20-ampere plugs and receptacles are interchangeable with former 15-ampere plugs and receptacles; 30-ampere (except the 2-wire, 2-pole), with former 15-ampere; 60-ampere, with former 30-ampere; 100-ampere, with former 60-ampere.

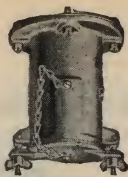
†100-ampere, also furnished with auxiliary metal cable clamp.

‡20-ampere, 2-pole plugs and receptacles have binding screw terminals, all others have soldered terminals.



## Arktype Receptacle Housings

200 and 400 Amperes—250 Volts D.C., 600 Volts A.C.



With Cover



AP Plug With Cable Clamp



AP Plug With Rubber Cable Grip

Receptacles will take any of the plugs grouped opposite the receptacle listings.  
Style 1, grounded through shell. Style 2, grounded through extra pole and shell.  
Plugs are made of cast aluminum.

Receptacle Housings					200 Amperes For AJ Series Form E			AP Plugs With Rubber Cable Grips		
DESCRIPTION			With Covers		AP Plugs With Cable Clamps			Diam. of Cable, In.		
Style	No. Wires	No. Poles	No.	Each	Diam. of Cable, In.	No.	Each	Diam. of Cable, In.	No.	Each
1	2	2	AR2021	\$40.00	.938 to 1.469	AP20216	\$30.00	.875 to 1.375	AP20255	\$40.00
					1.313 to 2.063	AP20217	30.00	1.375 to 1.875	AP20257	40.00
1	3	3	AR2031	41.70	.938 to 1.469	AP20316	33.00	1.875 to 2.500	AP20258	40.00
					1.313 to 2.063	AP20317	33.00	.875 to 1.375	AP20355	43.00
1	4	4	AR2041	48.25	1.188 to 1.813	AP20417	41.00	1.375 to 1.875	AP20357	43.00
					1.750 to 2.563	AP20418	41.00	1.875 to 2.500	AP20358	43.00
2	2	3	AR2032	46.70	.938 to 1.469	AP20326	38.00	.875 to 1.375	AP20455	51.00
					1.313 to 2.063	AP20327	38.00	1.375 to 1.875	AP20457	51.00
2	3	4	AR2042	54.00	1.188 to 1.813	AP20427	46.00	1.875 to 2.500	AP20458	51.00
					1.750 to 2.563	AP20428	46.00	.875 to 1.375	AP20365	48.00
400 Amperes—250 Volts D.C. or A.C., 200 Amperes—600 Volts A.C. For AJ Series Form F								1.375 to 1.875	AP20367	48.00
1	2	2	AR4021	\$90.00	1.188 to 1.813	AP40217	\$55.00	1.875 to 2.500	AP20368	48.00
					1.750 to 2.563	AP40218	55.00	.875 to 1.375	AP20465	56.00
1	3	3	AR4031	93.00	1.188 to 1.813	AP40317	60.00	1.375 to 1.875	AP20467	56.00
					1.750 to 2.563	AP40318	60.00	1.875 to 2.500	AP20468	56.00
1	4	4	AR4041	115.00	1.313 to 2.063	AP40417	72.00			
					2.000 to 3.250	AP40419	72.00			
2	2	3	AR4032	103.00	1.188 to 1.813	AP40327	70.00			
					1.750 to 2.563	AP40328	70.00			
2	3	4	AR4042	125.00	1.313 to 2.063	AP40427	82.00			
					2.000 to 3.250	AP40429	82.00			

## Dimension D—Outside Diameter of Plug in Inches

Present Rating.....	amperes	20	30	60	100	200	400
Former Rating.....	amperes	15	15	30	60	100	200
2-Wire, 2-Pole.....		1 1/16	1 1/8	2 1/4	2 1/2	3 3/4	4 1/16
2-Wire, 3-Pole; 3-Wire, 3-Pole.....			1 7/8	2 1/4	2 1/2	3 3/4	4 1/16
3-Wire, 4-Pole; 4-Wire, 4-Pole.....			1 7/8	2 3/16	2 3/4	4 1/8	5 1/16
4-Wire, 5-Pole; 5-Wire, 5-Pole.....			2 3/16				

\*Except 400-ampere size, which is rated at 200 amperes only at 600 volts a.c.  
†200-ampere plugs and receptacles are interchangeable with former 100-ampere plugs and receptacles; 400-ampere, with former 200-ampere.

## Type AEQ Receptacle Equipment with Caps

Take Type APJ Plugs with rubber cable grip and fastening ring.



DESCRIPTION			30 Amperes		Two-Gang	
Style	No. Wires	No. Poles	No.	Each	No.	Each
1	2	2	AEQ1327	\$14.50	AEQ2327	\$25.45
1	3	3	AEQ1337	15.00	AEQ2337	26.45
1	4	4	AEQ1347	15.80	AEQ2347	28.05
1	5	5	AEQ1357	17.00	AEQ2357	30.45
2	2	3	AEQ1338	16.00	AEQ2338	28.45
2	3	4	AEQ1348	16.80	AEQ2348	30.05
2	4	5	AEQ1358	18.45	AEQ2358	33.35
			60 Amperes			
1	2	2	AEQ1627	\$21.10	AEQ2627	\$35.90
1	3	3	AEQ1637	22.10	AEQ2637	37.90
1	4	4	AEQ1647	24.10	AEQ2647	41.90
2	2	3	AEQ1638	23.35	AEQ2638	40.40
2	3	4	AEQ1648	25.35	AEQ2648	44.40

## Covers

For Type AEQ Receptacle Equipment

Cast Ferrelloy—Blank

No.	30-Amperes	60-Amperes
No. AEQ011.....	each \$2.00	....
No. AEQ021.....	each 3.00	....
No. AEQ031.....	each	\$3.25
No. AEQ041.....	each	4.50



For use with types BRB, BRD, BRG, BRM, BRME, BRMF, BRP, BRY, GSP, and QE plug receptacle housings. The 30-ampere plugs are arranged for soldered terminals. The 20-ampere plugs are equipped with binding screw terminals. Plugs so equipped with binding screw will not take wires larger than No. 12; consequently, these plugs are rated at 20 amperes. Otherwise, the 20 and 30-ampere plugs are exactly alike.

**GROUNDING.**—Provision is made on these plugs for an extra grounding wire in the cable for grounding the frame of the portable device to the shell of the plug. The grounding or safety circuit is completed through the shell of the plug, the detent spring, the receptacle housing, and the conduit system. The detent spring in the receptacle has three branches, two of which make contact before and break contact after the main circuit contacts. This method of grounding is N. E. C. standard.

### Without Clamping Nut



*20 Amperes, 250 Volts A.C.		
Diam. Opening in Cable Clamp, In.	No.	Each
†.500 to .844	BP22	\$3.60
†.500 to .844	BP32	\$3.60

Furnished with cable clamp, cast aluminum handle (non-watertight).

Diam. Opening in Cable Clamp, In.		<b>*20 Amperes, 250 Volts A.C.</b>					
		<b>2-Pole</b>		<b>3-Pole</b>		<b>4-Pole</b>	
		No.	Each	No.	Each	No.	Each
\$ .500 to	.875	BP522	\$2.85	BP523	\$3.75	BP524	\$4.50
.625 to	1.125	.....		.....		.....	
		<b>30 Amperes,</b>		<b>250 Volts A.C.</b>			
\$ .500 to	.875	BP532	\$2.85	BP533	\$3.75	BP534	\$4.50
.625 to	1.125	.....		.....		.....	

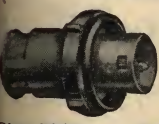


Furnished with cable clamp, cast aluminum handle (non-watertight).

		*20-Amperes, 250 Volts A.C.		
\$ .500 to .875	BP722 \$3.35	BP723 \$4.50	BP724 \$5.50	
.625 to 1.125				
	130 Amperes, 250 Volts A.C.			
\$ .500 to .875	BP732 \$3.35	BP733 \$4.50	BP734 \$5.50	
.625 to 1.125				

Furnished with cast aluminum handles.

Diam. Rigid Conduit, In.		*20-Amperes, 250 Volts A.C.					
		2-Pole		3-Pole		4-Pole	
		No.	Each	No.	Each	No.	Each
1/2		BP5122	\$2.75	BP5123	\$4.00	BP5124	\$4.75
3/4		BP5222	2.85	BP5223	4.10	BP5224	4.85
1		BP5322	2.95	BP5323	4.20	BP5324	4.95
		†30 Amperes, 250 Volts A.C.					
1/2		BP5132	\$2.75	BP5133	\$4.00	BP5134	\$4.75
3/4		BP5232	2.85	BP5233	4.10	BP5234	4.85
1		BP5332	2.95	BP5333	4.20	BP5334	4.95



Furnished with cast aluminum handles (watertight).

Diam. Rigid Conduit, In.		*20 Amperes, 250 Volts A.C.					
		2-Pole		3-Pole		4-Pole	
		No.	Each	No.	Each	No.	Each
1/2		BP7122	\$3.25	BP7123	\$4.75	BP7124	\$5.75
3/4		BP7222	3.35	BP7223	4.85	BP7224	5.85
1		BP7322	3.45	BP7323	4.95	BP7324	5.95
		*30 Amperes, 250 Volts A.C.					
		2-Pole		3-Pole		4-Pole	
		No.	Each	No.	Each	No.	Each
1/2		BP7132	\$3.25	BP7133	\$4.75	BP7134	\$5.75
3/4		BP7232	3.35	BP7233	4.85	BP7234	5.85
1		BP7332	3.45	BP7333	4.95	BP7334	5.95

### Without Clamping Nut



Furnished with gland nut, tapered rubber bushing, and cast aluminum handles.

*20 Amperes, 250 Volts A.C.						
Diam. Opening in Cable Clamp, In.	2-Pole		3-Pole		4-Pole	
	No.	Each	No.	Each	No.	Each
.375 to .500	BP6422	\$3.40	BP6423	\$4.15	BP6424	\$4.90
.500 to .625	BP6522	3.60	BP6523	4.35	BP6524	5.10
.625 to .750	BP6622	3.80	BP6623	4.55	BP6624	5.30
.750 to .875	BP6722	4.00	BP6723	4.75	BP6724	5.50
.875 to 1.000	.....	....	BP6823	4.95	BP6824	5.70
*30 Amperes, 250 Volts A.C.						
.375 to .500	BP6432	\$3.40	BP6433	4.15	BP6434	\$4.90
.500 to .625	BP6532	3.60	BP6533	4.35	BP6534	5.10
.625 to .750	BP6632	3.80	BP6633	4.55	BP6634	5.30
.750 to .875	BP6732	4.00	BP6733	4.75	BP6734	5.50
.875 to 1.000	.....	....	BP6833	4.95	BP6834	5.70



Furnished with gland nut, tapered rubber bushing, and cast aluminum handles (watertight).

*20 Amperes, 250 Volts A.C.							
.375 to .500	BP8422	\$3.90	BP8423	\$4.90	BP8424	\$5.90	
.500 to .625	BP8522	4.10	BP8523	5.10	BP8524	6.10	
.625 to .750	BP8622	4.30	BP8623	5.30	BP8624	6.30	
.750 to .875	BP8722	4.50	BP8723	5.50	BP8724	6.50	
.875 to 1.000	.....	.....	BP8823	5.70	BP8824	6.70	
*30 Amperes 250 Volts A.C.							
.375 to .500	BP8432	\$3.90	BP8433	\$4.90	BP8434	\$5.90	
.500 to .625	BP8532	4.10	BP8533	5.10	BP8534	6.10	
.625 to .750	BP8632	4.30	BP8633	5.30	BP8634	6.30	
.750 to .875	BP8732	4.50	BP8733	5.50	BP8734	6.50	
.875 to 1.000	.....	.....	BP8833	5.70	BP8834	6.70	

### For Type BP Plugs



For use between plug receptacle housings and flange on all 30-ampere, 250-volt a.c. watertight plugs. Size \_\_\_\_\_

			Size	
		2-Pole	3-Pole	4-Pole
No. ....	Gask	131	Gask 141	Gask 141
Each. ....	\$	.05*	.10	.10

\*Can be used on 20-ampere, 125-volt d.c. circuits; or on 20-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

†Clamp opening  $\frac{1}{2}$  to  $\frac{7}{32}$ -inch takes most of the 2-wire and 3-wire rubber sheathed, fabric sheathed, and deck cables No. 14 to No. 8.

†Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

Clamp opening  $\frac{1}{2}$  to  $\frac{7}{8}$ -inch takes  $\frac{3}{8}$  and  $\frac{1}{2}$ -inch flexible conduit, No. 14 to No. 8 two or three-conductor armored cable, and most of the 2-wire and 3-wire rubber sheathed, fabric sheathed, and deck cables No. 14 to No. 8.

Clamp opening  $\frac{7}{8}$  to 1 $\frac{1}{8}$ -inch takes  $\frac{1}{2}$  and  $\frac{3}{4}$ -inch flexible conduit, No. 10 to No. 6 three-conductor armored cable, and most of the 3-wire and 4-wire rubber sheathed, fabric sheathed, and deck cables No. 12 to No. 6.

¶Also for use with type BR connector receptacles.

\*\*Prices will be given for gaskets of the same catalog number in quantities of 500 or more.



### Type BRC Extension Cable Connectors With Rubber Bushing (Watertight)—Cast Aluminum

\*30 Amperes, 250 Volts, A.C.



Take Type BP plugs.

Diameter Cable, In.	Complete No.	Each	2-Pole		Each	Plug Only		Each
			Receptacle No.	Only		No.	Each	
.375 to .500	BRC8432	\$7.40	BRM70432	\$3.50		BP8432	\$3.90	
.500 to .625	BRC8532	7.65	BRM70532	3.55		BP8532	4.10	
.625 to .750	BRC8632	8.05	BRM70632	3.75		BP8632	4.30	
.750 to .875	BRC8732	8.45	BRM70732	3.95		BP8732	4.50	
3-Pole								
.375 to .500	BRC8433	\$8.85	BRM70433	\$3.95		BP8433	\$4.90	
.500 to .625	BRC8533	9.10	BRM70533	4.00		BP8533	5.10	
.625 to .750	BRC8633	9.50	BRM70633	4.20		BP8633	5.30	
.750 to .875	BRC8733	9.90	BRM70733	4.40		BP8733	5.50	
.875 to 1.000	BRC8833	10.30	BRM70833	4.60		BP8833	5.70	
4-Pole								
.375 to .500	BRC8434	\$10.30	BRM70434	\$4.40		BP8434	\$5.90	
.500 to .625	BRC8534	10.55	BRM70534	4.45		BP8534	6.10	
.625 to .750	BRC8634	10.95	BRM70634	4.65		BP8634	6.30	
.750 to .875	BRC8734	11.35	BRM70734	4.85		BP8734	6.50	
.875 to 1.000	BRC8834	11.75	BRM70834	5.05		BP8834	6.70	

### Type BRME 30° Angle Receptacle Condulets



With Spring Door



Without Spring Door



With Threaded Cap

Take Type BP plugs.

Size No. In. Poles	With Spring Door No.	Each	Without Spring Door No.	Each	With Threaded Cap No.	Each
1/2 2	BRME61302	\$3.75	BRME1302	\$2.50	BRME81302	\$3.65
3/4 2	BRME62302	3.85	BRME2302	2.60	BRME82302	3.75
3/4 3	BRME62303	4.45	BRME2303	3.20	BRME82303	4.80
1 3	BRME63303	4.55	BRME3303	3.30	BRME83303	4.90
3/4 4	BRME62304	6.15	BRME2304	3.90	BRME82304	5.75
1 4	BRME63304	6.25	BRME3304	4.00	BRME83304	5.85

### Type BRP Plug Receptacle Housings For Outlet Boxes—Surface or Flush Mounting



With Spring Door



Without Spring Door



With Threaded Cap

Take Type BP plugs.

Outlet Box Size, In.	No. Poles	Without Spring Door No.	Each	With Spring Door No.	Each	With Threaded Cap No.	Each
3 1/4	2	BRP3023	\$2.50	BRP63023	\$4.10	BRP83023	\$3.65
3 1/4	3	BRP3033	3.25	BRP63033	5.05	BRP83033	4.85
3 1/4	4	BRP3043	3.90	BRP63043	5.90	BRP83043	5.95
4	2	BRP3024	2.65	BRP63024	4.25	BRP83024	3.80
4	3	BRP3034	3.40	BRP63034	5.20	BRP83034	5.00
4	4	BRP3044	4.05	BRP63044	6.05	BRP83044	6.10

\*Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

The 2-pole connectors are furnished with 30-ampere, 250-volt receptacle, No. BR2302; 3-pole condulets are furnished with 30-ampere, 250-volt receptacle, No. BR2303; and 4-pole condulets are furnished with 30-ampere, 250-volt receptacle, No. BR2304.

### QE Series Condulets

Take housings for snap switches and plug receptacles.



Type QE



Type QEE

Form	Size In.	Type QE		Size In.	Type QEE	
		No.	Each		No.	Each
10	1/2	QE110	\$ .90	1/2	QEE110	\$1.00
10	3/4	QE210	1.00	3/4	QEE210	1.10
10	1	QE310	1.10	1	QEE310	1.20
20	1/2	QE120	1.30	1/2	QEE120	1.45
20	3/4	QE220	1.40	3/4	QEE220	1.55
20	1	QE320	1.50	1	QEE320	1.65

### Type QE Plug Receptacle Housings Take Type BP 30 Amperes, 250-Volt A.C.



With Spring Door



Without Spring Door



With Threaded Cap



Without Threaded Cap

Two-pole housings are furnished with 30-ampere, 250-volt a.c. receptacle BR302. Three-pole housings are furnished with 30-ampere, 250-volt a.c. receptacle BR303. Threaded housings are also furnished with gaskets.

Form	Description	2-Pole		3-Pole	
		No.	Each	No.	Each
10	With Spring Door.....	QE6302	\$4.60	QE6303	\$5.30
10	Without Spring Door...	QE302	3.00	QE303	3.50
10	With Threaded Cap....	QE8302	4.15	QE8303	5.10
10	Without Threaded Cap.	QE7302	3.20	QE7303	3.75

### Take Type BP 60-Ampere, 600-Volt Plugs

Furnished with 3-pole, 60-ampere, 600-volt receptacle BR6036. Threaded housings are also furnished with gaskets.

Form	Description	No.		Each
		No.	Each	
20	With Spring Door.....	QE66036		\$7.95
20	Without Spring Door.....	QE6036		6.45
20	With Threaded Cap.....	QE86036		8.95
20	Without Threaded Cap.....	QE76036		6.70

### Take Type RQ 30-Ampere, 250-Volt Plugs



With Spring Door



Without Spring Door

Two-pole housings are furnished with 30-ampere, 250-volt receptacle RQH302. Three-pole housings are furnished with 30-ampere, 250-volt receptacle RQH303. Two-wire, 3-pole housings are furnished with 30-ampere, 250-volt receptacle RQH2302.

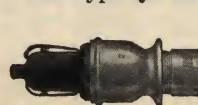
Form	Description	2-Pole		*2-Wire, 3-Pole		3-Pole	Each
		No.	Each	No.	Each	No.	
10	With Spring Door..	QE1066	\$3.60	QE1266	\$3.90		
20	With Spring Door..					QE2066	\$5.10
10	Without Spring Door	QE106	2.80	QE126	3.10		
20	Without Spring Door					QE206	4.10

\*Third pole grounded.

### Type RQ Plugs

30 Amperes, 250 Volts

For Type QE housings.



No. Pole	No.	Each
2	RQ302	\$3.50
*3	RQ2302	3.50
3	RQ303	5.00

\*Third pole grounded.



## GR Series Junction Condulets



Type	Approx. Inside Dimen. Inches	No.	Each
RS	8 $\frac{1}{2}$ x8 $\frac{1}{2}$ x4	RS 1	\$9.25
RSM	8 $\frac{1}{2}$ x4 $\frac{1}{2}$ x4	RSM1	7.85
RSS	4 $\frac{1}{2}$ x4 $\frac{1}{2}$ x4	RSS 1	6.75



Size Inches	No.	Each
1/2	RSP1	\$1.00
3/4	RSP2	1.05
1	RSP3	1.10
1 1/4	RSP4	1.15
1 1/2	RSP5	1.20
2	RSP6	1.25
2 1/2	RSP7	1.40
3	RSP8	1.65
3 1/2	RSP9	1.90



*Size Inches	No.	Each
1/2-1/2	RSP11	\$1.10
3/4-3/4	RSP22	1.20
1-1/2	RSP31	1.30
1-1	RSP33	1.30
1 1/4-3/4	RSP42	1.40
1 1/4-1	RSP43	1.50
1 1/4-1 1/4	RSP44	1.40
1 1/2-3/4	RSP52	1.55
1 1/2-1	RSP53	1.55
1 1/2-1 1/4	RSP54	1.55
1 1/2-1 1/2	RSP55	1.55
2-3/4	RSP62	1.75
2-1	RSP63	1.75
2-1 1/4	RSP64	1.75
2-1 1/2	RSP65	1.75
2-2	RSP66	1.75
2 1/2-1	RSP73	1.95



..... RSP0     \$ .95



$1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$	RSP111	\$1.20
$\frac{3}{4}-\frac{3}{4}-\frac{3}{4}$	RSP222	1.35
$1-1-1\frac{1}{2}$	RSP331	1.50
$1-1-1$	RSP333	1.50
$1\frac{1}{4}-1\frac{1}{4}-\frac{3}{4}$	RSP442	1.65
$1\frac{1}{4}-1\frac{1}{4}-1\frac{1}{4}$	RSP444	1.65
$2-1-1\frac{1}{2}-1$	RSP553	1.90
$1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$	RSP555	1.90



Size In.	No.	Each
$\frac{1}{2}$	RSMP1	\$ .50
$\frac{3}{4}$	RSMP2	.55
1	RSMP3	.60
$1\frac{1}{4}$	RSMP4	.65
$1\frac{1}{2}$	RSMP5	.70
2	RSMP6	.75
$2\frac{1}{2}$	RSMP7	.90



1/2-1/2	RSMP11	\$ .60
3/4-3/4	RSMP22	1.70
	Blank	
.....	RSMP0	\$ .45



Type GRL



Type GRX



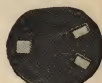
Type GRB

		Type GRC				
		With Wedge-Nut Cover and Gasket		With Screw Cover		
Form	Outside Diameter Inches	Size Hub Inches	No.	Each	No.	Each
*4	$\left\{ \begin{array}{l} 2\frac{1}{2} \\ 2\frac{1}{2} \\ 3\frac{1}{2} \end{array} \right.$	$\frac{1}{2}$	GRC146	\$ .75	GRC14	\$ .95
		$\frac{3}{4}$	GRC246	.80	GRC24	1.00
7	$\left\{ \begin{array}{l} 3\frac{1}{2} \\ 3\frac{1}{2} \\ 3\frac{1}{2} \end{array} \right.$	$\frac{1}{2}$	GRC176	1.00	GRC17	1.45
		$\frac{3}{4}$	GRC276	1.05	GRC27	1.50
		1	GRC376	1.10	GRC37	1.55
8	$\left\{ \begin{array}{l} 4 \\ 4 \\ 4 \end{array} \right.$	$\frac{3}{4}$	GRC286	1.40	GRC28	1.85
		1	GRC386	1.45	GRC38	1.90
		$1\frac{1}{4}$	GRC486	1.50	GRC48	1.95
Type GRCA						
*4	$\left\{ \begin{array}{l} 2\frac{1}{2} \\ 2\frac{1}{2} \end{array} \right.$	$\frac{1}{2}$	GRCA146	\$ .80	GRCA14	1.00
		$\frac{3}{4}$	GRCA246	.85	GRCA24	1.05
7	$\left\{ \begin{array}{l} 3\frac{1}{2} \end{array} \right.$	1	GRCA376	1.15	GRCA37	1.60
Type GRL						
*4	$\left\{ \begin{array}{l} 2\frac{1}{2} \\ 2\frac{1}{2} \\ 3\frac{1}{2} \end{array} \right.$	$\frac{1}{2}$	GRL146	\$ .75	GRL14	\$ .95
		$\frac{3}{4}$	GRL246	.80	GRL24	1.00
7	$\left\{ \begin{array}{l} 3\frac{1}{2} \\ 3\frac{1}{2} \\ 3\frac{1}{2} \end{array} \right.$	$\frac{1}{2}$	GRL176	1.00	GRL17	1.45
		$\frac{3}{4}$	GRL276	1.05	GRL27	1.50
		1	GRL376	1.10	GRL37	1.55
8	$\left\{ \begin{array}{l} 4 \\ 4 \end{array} \right.$	$\frac{3}{4}$	GRL286	1.40	GRL28	1.85
		1	GRL386	1.45	GRL38	1.90
		$1\frac{1}{4}$	GRL486	1.50	GRL48	1.95
Type GRT						
*4	$\left\{ \begin{array}{l} 2\frac{1}{2} \\ 2\frac{1}{2} \\ 3\frac{1}{2} \end{array} \right.$	$\frac{1}{2}$	GRT146	\$ .80	GRT14	\$ 1.00
		$\frac{3}{4}$	GRT246	.85	GRT24	1.05
7	$\left\{ \begin{array}{l} 3\frac{1}{2} \\ 3\frac{1}{2} \\ 3\frac{1}{2} \end{array} \right.$	$\frac{1}{2}$	GRT176	1.05	GRT17	1.50
		$\frac{3}{4}$	GRT276	1.10	GRT27	1.55
		1	GRT376	1.15	GRT37	1.60
8	$\left\{ \begin{array}{l} 4 \\ 4 \end{array} \right.$	$\frac{3}{4}$	GRT286	1.45	GRT28	1.90
		1	GRT386	1.50	GRT38	1.95
		$1\frac{1}{4}$	GRT486	1.55	GRT48	2.00
Type GRX						
*4	$\left\{ \begin{array}{l} 2\frac{1}{2} \\ 2\frac{1}{2} \\ 3\frac{1}{2} \end{array} \right.$	$\frac{1}{2}$	GRX146	\$ .85	GRX14	\$ 1.05
		$\frac{3}{4}$	GRX246	.90	GRX24	1.10
7	$\left\{ \begin{array}{l} 3\frac{1}{2} \\ 3\frac{1}{2} \\ 3\frac{1}{2} \end{array} \right.$	$\frac{1}{2}$	GRX176	1.10	GRX17	1.55
		$\frac{3}{4}$	GRX276	1.15	GRX27	1.60
		1	GRX376	1.20	GRX37	1.65
8	$\left\{ \begin{array}{l} 4 \\ 4 \end{array} \right.$	$\frac{3}{4}$	GRX286	1.50	GRX28	1.95
		1	GRX386	1.55	GRX38	2.00
		$1\frac{1}{4}$	GRX486	1.60	GRX48	2.05
Type GRB						
*4	$\left\{ \begin{array}{l} 2\frac{1}{2} \\ 2\frac{1}{2} \end{array} \right.$	$\frac{1}{2}$	GRB146	\$ .75	GRB14	\$ .95
		$\frac{3}{4}$	GRB246	.80	GRB24	1.00
7	$\left\{ \begin{array}{l} 3\frac{1}{2} \end{array} \right.$	1	GRB376	1.10	GRB37	1.55

Style	No.	Each	Rating
4-Wire	CB1124	\$ .90	20 Amps.-125 V.
6-Wire	CB304	1.40	20 Amps.-250 V.



Condulet Size  
Forms 7 and 8  
Form 8



Condulet  
Size  
Form 4  
Form 7  
Form 8

For Screw Covers		For Wedge-Nut Covers	
No.	Each	No.	Each
Gask 316	\$ .05	Gask 338	\$ .05
Gask 210	.10	Gask 332	.10
Gask 314	.15	Gask 339	.15



**Y Series Condulets****For Cutouts****Type Y****Type YC**

Take main line fuse cutouts. Furnished with sheet steel door and cutout fastening plate.

<b>Type Y</b> 30 Amperes, 250 Volts				
Size Inches	2-Wire		3-Wire	
	No.	Each	No.	Each
1/2	Y1302	\$2.35	.....	.....
3/4	Y2302	2.45	Y2303	\$2.95
<b>Type YC</b> 30 Amperes, 250 Volts				
1/2	YC1302	\$2.50	YC1303	\$3.00
3/4	YC2302	2.60	YC2303	3.10
1	YC3302	2.70	YC3303	3.20
1 1/4	YC4302	2.80	YC4303	3.30
60 Amperes, 250 Volts				
3/4	YC2602	\$3.80	YC2603	\$4.20
1	YC3602	3.90	.....	.....
1 1/4	.....	.....	YC4603	4.40

**Type YYC Condulets****For Cutouts****30 Amperes, 250 Volts**

Take main line fuse cutouts. Furnished with cast Feraloy door, removable conduit hub plates, and cutout fastening plate.

**2-Wire**

Size In.	No.	Each
1/2	YYC1302	\$4.30
3/4	YYC2302	4.50
<b>3-Wire</b>		
3/4	YYC2303	\$5.40
1	YYC3303	5.60

**Type YWC Weatherproof Condulets****For Cutouts****30 Amperes, 250 Volts**

Take main line fuse cutouts. Furnished with cast Feraloy door, removable conduit hub plates, gaskets and cutout fastening plate.

**2-Wire**

Size In.	No.	Each
1/2	YWC1302	\$5.30
3/4	YWC2302	5.50
<b>3-Wire</b>		
3/4	YWC2303	\$6.55
1	YWC3303	6.75

**Weatherproof Condulets****For Cutouts****2-Wire, 30 Amperes, 250 Volts**

Take connection blocks, or 2-wire, 30-ampere, 250-volt main line fuse cutouts. Cast feraloy door.

**Type YAC****Type YAC**

Size In.	No.	Each
1/2	YAC1302	\$4.00
3/4	YAC2302	4.10
1	YAC3302	4.20

**YA Series****Type YAJ**

Size Inches	No.	Each
1/2	YAJ1302	\$3.00

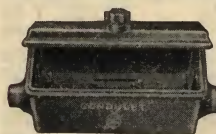
**Connection Blocks Type YA Connection Blocks**

Nos. YA3 and YA4 take 2-wire, 30-ampere, 250-volt main line cutouts. No. YA6 takes 3-wire, 60-ampere, 25-volt main line cutouts.

Description	Rating	For 2-Wire, 3-Wire 2-Gang or 3-Gang Condulets		For 3-Wire or 3-Gang Condulets	
		No.	Each	No.	Each
3-Wire	30 Amps.-250V.	YA3	\$1.50	.....	.....
4-Wire	30 Amps.-250V.	YA4	2.00	.....	.....
6-Wire	30 Amps.-250V.	.....	.....	YA6	\$3.00

**Type YKC Condulets****For Fusible Knife Switches****2-Pole, 30 Amperes, 250 Volts**

Take fusible knife switches. Furnished with sheet steel door, and with switch fastening plate.



Size In.	No.	Each
1/2	YKC1302	\$4.15
3/4	YKC2302	4.30
1	YKC3302	4.45
1 1/4	YKC4302	4.60
1 1/2	YKC5302	4.75

**Type YKWC Weatherproof Condulets****For Fusible Knife Switches**

Furnished with gasketed cast Feraloy door, and with removable switch fastening plate.

Size In.	30 Amperes, 250 Volts		3-Pole	
	No.	Each	No.	Each
1/2	YKWC1302	\$9.75	YKWC1303	\$10.65
3/4	YKWC2302	9.90	YKWC2303	10.80
1	YKWC3302	10.05	YKWC3303	10.95
1 1/4	YKWC4302	10.20	YKWC4303	11.10
1 1/2	YKWC5302	10.35	YKWC5303	11.25
60 Amperes, 250 Volts				
3/4	YKWC2602	\$12.70	YKWC2603	\$14.70
1	YKWC3602	12.85	YKWC3603	14.85
1 1/4	YKWC4602	13.00	YKWC4603	15.00
1 1/2	YKWC5602	13.15	YKWC5603	15.15
2	YKWC6602	13.30	YKWC6603	15.30

**Type YKK Knife Switches****For Types YKC and YKWC Condulets**

Cap. Amp.	No.	Each
30	YKK302	\$2.25
60	YKK602	3.50

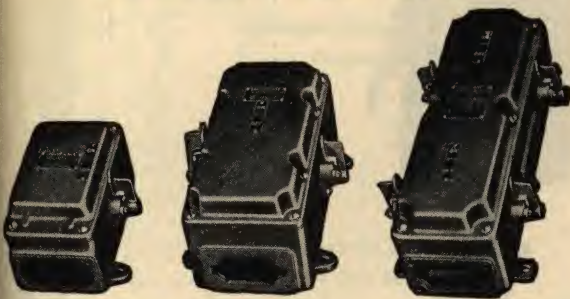


**Type YSW Condulets**

Without Hub Plates

For Circuit Breakers

Vaportight—Weather Resistant (Raintight)



Take YYP7 Series removable conduit hub plates.  
Furnished with Westinghouse "Flipon" circuit breakers,  
connection block, and gaskets for hub plates.

**YSW Form 1**

With Circuit Breakers

\*Without Circuit Breakers

Style	Amperes	No.	Each	No.	Each	No.	Each
1	15	YSW1115	\$16.70	YSW1215	\$24.90	YSW11	\$11.00
	20	YSW1120	16.70	YSW1220	24.90	YSW11	11.00
Circuit Breaker	25	YSW1125	16.70	YSW1225	24.90	YSW11	11.00
	35	YSW1135	17.70	YSW1235	24.90	YSW11	11.00
2	15	YSW2115	25.40			YSW21	14.00
Circuit Breakers	20	YSW2120	25.40			YSW21	14.00
	25	YSW2125	25.40			YSW21	14.00

**YSW Form 2**

†1 Circuit Breaker	15	.....	.....	YSW1152	\$31.90	YSW102	\$18.00
	20	.....	.....	YSW1202	31.90	YSW102	18.00
	25	.....	.....	YSW1252	31.90	YSW102	18.00
	35	.....	.....	YSW1352	31.90	YSW102	18.00
	50	.....	.....	YSW1502	31.90	YSW102	18.00
2 Circuit Breakers	15	YSW2151	\$32.40	.....	.....	YSW201	21.00
	20	YSW2201	32.40	.....	.....	YSW201	21.00
	25	YSW2251	32.40	.....	.....	YSW201	21.00
	35	YSW2351	34.40	.....	.....	YSW201	21.00

**YSW Form 3**

†2 Circuit Breakers	15	.....	.....	YSW2215	\$53.80	YSW22	\$26.00
	20	.....	.....	YSW2220	53.80	YSW22	26.00
	25	.....	.....	YSW2225	53.80	YSW22	26.00
	35	.....	.....	YSW2235	53.80	YSW22	26.00
4 Circuit Breakers	15	YSW4115	\$54.80	.....	.....	YSW41	32.00
	20	YSW4120	54.80	.....	.....	YSW41	32.00
	25	YSW4125	54.80	.....	.....	YSW41	32.00
	35	YSW4135	58.80	.....	.....	YSW41	32.00

**YSW Form 4**

†2 Circuit Breakers	15	.....	.....	YSW2152	\$63.80	YSW202	\$36.00
	20	.....	.....	YSW2202	63.80	YSW202	36.00
	25	.....	.....	YSW2252	63.80	YSW202	36.00
	35	.....	.....	YSW2352	63.80	YSW202	36.00
	50	.....	.....	YSW2502	63.80	YSW202	36.00
4 Circuit Breakers	15	YSW4151	\$64.80	.....	.....	YSW401	42.00
	20	YSW4201	64.80	.....	.....	YSW401	42.00
	25	YSW4251	64.80	.....	.....	YSW401	42.00
	35	YSW4351	68.80	.....	.....	YSW401	42.00
	50	YSW4501	68.80	.....	.....	YSW401	42.00

\*Take single and double pole circuit breakers.

†Handles on right side.

**Overall Dimensions of Body**

Form	Style	Width Inches	Height Inches	Depth Inches
1	For 1 Circuit Breaker	6 $\frac{5}{8}$	8	5 $\frac{3}{8}$
1	For 2 Circuit Breakers	6 $\frac{3}{4}$	8	5 $\frac{3}{8}$
2	For 1 Circuit Breaker	8	12	5 $\frac{3}{4}$
2	For 2 Circuit Breakers	8 $\frac{1}{8}$	12	5 $\frac{3}{4}$
3	For 2 Circuit Breakers	7 $\frac{1}{4}$	16	5 $\frac{5}{8}$
3	For 4 Circuit Breakers	7 $\frac{1}{2}$	16	5 $\frac{5}{8}$
4	For 2 Circuit Breakers	8 $\frac{1}{2}$	20 $\frac{1}{4}$	5 $\frac{3}{4}$
4	For 4 Circuit Breakers	8 $\frac{1}{8}$	20 $\frac{1}{4}$	5 $\frac{3}{4}$

**FA Series Safety Switch Condulets**

FA Series Condulets are furnished with Crouse-Hinds tumbler switch, cover and gasket.

**Type FA**

With Guarded Cover

With Watertight Cover

2-Pole, 30-Ampere, 250-Volt  
or 5-Ampere, 600-Volt2-Pole, 30-Ampere, 250-Volt  
or 5-Ampere, 600-Volt

Size In.	No.	Each
1/2	FA129	\$6.25
3/4	FA229	6.35
1	FA329	6.45
3-Way, 20-Ampere, 125-Volt or 10-Ampere, 250-Volt		
1/2	FA169	\$6.50
3/4	FA269	6.60
1	FA369	6.70

Size In.	No.	Each
1/2	FA128	\$8.90
3/4	FA228	9.00
1	FA328	9.10
3-Way, 20-Ampere, 125-Volt or 10-Ampere, 250-Volt		
1/2	FA168	\$9.15
3/4	FA268	9.25
1	FA368	9.35

**Type FAC**

With Guarded Cover

With Watertight Cover

2-Pole, 30-Ampere, 250-Volt  
or 5-Ampere, 600-Volt2-Pole, 30-Ampere, 250-Volt  
or 5-Ampere, 600-Volt

Size In.	No.	Each
1/2	FAC129	\$6.35
3/4	FAC229	6.45
1	FAC329	6.55
3-Way, 20-Ampere, 125-Volt or 10-Ampere, 250-Volt		
1/2	FAC169	\$6.60
3/4	FAC269	6.70
1	FAC369	6.80

Size In.	No.	Each
1/2	FAC128	\$9.00
3/4	FAC228	9.10
1	FAC328	9.20
3-Way, 20-Ampere, 125-Volt or 10-Ampere, 250-Volt		
1/2	FAC168	\$9.25
3/4	FAC268	9.35
1	FAC368	9.45

**Type FSQ Interlocking Safety Switch Condulets**

Furnished with tumbler switch, vaportight cover, Hubbell 3-pole twist lock receptacle, and Hubbell 3-pole twist lock plug.

Size  
In.  
3/4No.  
FSQ28Each  
\$12.00**Type FHRC Thermostat Condulets**

Furnished with thermostat, thermometer, and mercury tube switch.

Has 3/4-inch hub, through feed.

No.	Each	Range of Thermostat Degrees F.	Use
FHRC226	\$15.50	25 to 60	Refrigeration
FHRC237	15.50	38 to 70	Heating
FHRC258	15.50	56 to 80	Heating
FHRC269	15.50	65 to 90	Air Conditioning



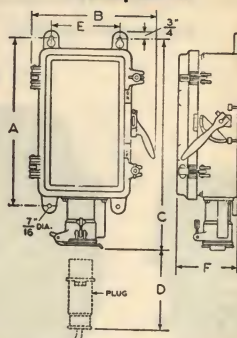
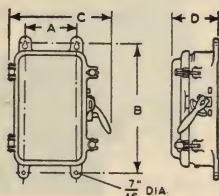
## Crouse-Hinds Enclosed Safety Switch Condulets

Weather Resistant  
(Raintight)

Type WMKS

With Interlocking Plug  
Receptacle

Type WMK



Type WMK condulets are furnished with switches and are especially suited to locations where a strong, durable case and switch mechanism are required. May be used indoors or outdoors, and in all places except hazardous locations.

Listed with 2 threaded conduit openings of the same size, one at the top and one at the bottom. Other arrangements and sizes of conduit openings can be furnished and prices will be quoted upon request, if accompanied by a full explanation of requirements. An interlock is provided which prevents the opening of the enclosure except when the switch is in the off position.

## Approximate Dimensions

Amperes.....	30	60	100	200
A Dimen.....inches	6 3/4	6 3/4	10 1/4	10 1/4
B Dimen.....inches	16 1/2	16 1/2	24 3/4	24 3/4
C Dimen.....inches	13	13	16 1/2	16 1/2
D Dimen.....inches	6 1/8	6 1/8	8 3/4	8 3/4

## 2-Pole—Not Fusible

230 Volts A.C.—250 Volts D.C. 575 Volts A.C.—600 Volts D.C.

Hub Size	No.	Each	HP. RATING	No.	Each	HP. RATING
Amp. In.			230-250 V. V.			*575-600 V. V.
30 3/4	WMK30254-1-22	\$34.40	3	5 WMK30254-1-22	\$34.40	7 1/2
60 1 1/4	WMK60254-1-44	36.70	7 1/2	10 WMK60254-1-44	36.70	15
100 1 1/2	WMK10254-1-55	94.60	15	15 WMK10254-1-55	94.60	25
200 2	WMK20254-1-66	130.70	25	30 WMK20254-1-66	130.70	50

## 3-Pole—Not Fusible

30 1	WMK30354-1-33	\$37.85	5	.. WMK30354-1-33	\$37.85	10	..
60 1 1/4	WMK60354-1-44	40.15	10	.. WMK60354-1-44	40.15	25	..
100 1 1/2	WMK10354-1-55	100.90	20	.. WMK10354-1-55	100.90	40	..
200 2 1/2	WMK20354-1-77	137.55	40	.. WMK20354-1-77	137.55	50	..

## †2-Pole—Fusible

30 3/4	WMK302-1-22	\$33.85	2	5 WMK3025-1-22	\$42.45	..	7 1/2
60 1 1/4	WMK602-1-44	36.15	5	10 WMK6025-1-44	44.70	..	15
100 1 1/2	WMK1002-1-55	93.45	10	15 WMK10025-1-55	100.30	..	25
200 2	WMK2002-1-66	137.55	15	30 WMK20025-1-66	144.45	..	50

## †3-Pole—Fusible

30 1	WMK303-1-33	\$37.85	3	.. WMK3035-1-33	\$45.85	..	7 1/2
60 1 1/4	WMK603-1-44	41.85	7 1/2	.. WMK6035-1-44	49.30	..	20
100 1 1/2	WMK1003-1-55	102.60	15	.. WMK10035-1-55	107.75	..	30
200 2 1/2	WMK2003-1-77	147.90	30	.. WMK20035-1-77	151.30	..	50

\*Also applies for 440-480-volts a.c. service.

†Cartridge fuses are not included in the catalog number or price.

The receptacle is so interlocked with the switch that the plug cannot be withdrawn unless the switch is open and the switch cannot be closed unless the plug is fully inserted.

## Approximate Dimensions, Inches

Item	A	B	C	D	E	F
1	16 1/2	13	21	6	6 3/4	6 1/8
2	16 1/2	13	21	7	6 3/4	6 1/8
3	24 3/4	16 1/2	30	7 1/2	10 1/4	8 3/4
4	24 3/4	16 1/2	32	12	10 1/4	8 3/4
5	16 1/2	13	32	8 1/4	6 3/4	6 1/8
6	24 3/4	16 1/2	30	9	10 1/4	8 3/4

## †2-Pole Fusible Switch With 2-Wire, 2-Pole, Style 1

## Receptacle

Hub Size	No.	Each	HP. RATING	No.	Each	HP. RATING
Amp. In.			230-250 V. V.			*575-600 V. V.
30 3/4	WMKS1632	\$49.00	2	5 1	..	..
60 1 1/4	WMKS1662	56.00	5	10 2	..	..
100 1 1/2	WMKS16102	118.00	10	15 3	..	..
200 2	WMKS16202	173.00	15	30 4	..	..

## †2-Pole Fusible Switch With 2-Wire, 3-Pole, Style 2

## Receptacle

30 3/4	WMKS16323	\$50.00	2	5 2	WMKS163235	\$58.00	..	7 1/2
60 1 1/4	WMKS16623	57.00	5	10 2	WMKS166235	66.00	..	15
100 1 1/2	WMKS161023	119.00	10	15 3	WMKS1610235	126.00	..	25
200 2	WMKS162023	178.00	15	30 4	WMKS1620235	184.00	..	50

## †3-Pole Fusible Switch With 3-Wire, 3-Pole, Style 1

## Receptacle

30 1	WMKS1633	\$54.00	3	.. 1	WMKS16335	\$62.00	7 1/2	..
60 1 1/4	WMKS1663	63.00	7 1/2	.. 2	WMKS16635	70.00	20	..
100 1 1/2	WMKS16103	129.00	15	.. 3	WMKS161035	134.00	30	..
200 2 1/2	WMKS16203	188.00	30	.. 4	WMKS162035	191.00	50	..

## †3-Pole Fusible Switch With 3-Wire, 4-Pole, Style 2

## Receptacle

30 1	WMKS16334	\$56.00	3	.. 5	WMKS163345	\$64.00	7 1/2	..
60 1 1/4	WMKS16634	65.00	7 1/2	.. 5	WMKS166345	73.00	20	..
100 1 1/2	WMKS161034	131.00	15	.. 6	WMKS1610345	136.00	30	..

\*Also applies for 440-480-volt a.c. service.

†Style 1—grounded through shell. Style 2—grounded through extra pole and shell.

## Type DP Interlocking Plugs

For Use with Type WMKS Safety Switch and Interlocking Receptacle Condulets  
30 Amperes—250 VoltsType DP  
30 to 100  
Amperes

Diameter Cable, Inches	No.	Each
.500 to .875	DP132	\$6.50
.750 to 1.188	DP332	6.50

2-W., 2-P.	No.	Each
	DP162	\$7.50
	DP362	7.50

†Style 1	No.	Each
	DP133	\$7.00
	DP333	7.00

3-W., 3-P.	No.	Each
	DP163	\$8.00
	DP363	8.00

2-W., 3-P.	No.	Each
	DP1623	\$9.25
	DP3623	9.25

†Style 2	No.	Each
	DP164	\$11.50
	DP364	11.50

## 30 and 60 Amperes—600 Volts

	DP1623	\$9.25
	DP3623	9.25

## 100 Amperes—600 Volts

	DP1102	\$14.00
	DP3102	14.00

## 200 Amperes—600 Volts

	DP1202	\$40.00
	DP3202	40.00

	DP1103	\$15.00
	DP3103	15.00

	DP1203	\$43.00
	DP3203	43.00

	DP11023	\$16.50
	DP31023	16.50

	DP12023	\$48.00
	DP32023	48.00

†Style 1—grounded through shell. Style 2—grounded through extra pole and shell.

Type DP  
200-Ampere



## Type LG Gauge Lamps

Take lamps in A17, S14, or S17 bulb.  
Made of cast aluminum.

Furnished with tapered rubber bushing and gland nut.



## Water Glass Lamps

## Vertical Slot

	1/2-Inch Hub for Rigid Conduit	.375 to .438-Inch O.D. of Round Cord or Cable
No. ....	LG21	LG23
Each. ....	\$3.50	3.50



## Lubricator Lamps

## 13-Inch Slot

	1/2-Inch Hub for Rigid Conduit	.375 to .438-Inch O.D. of Round Cord or Cable
No. ....	LG31	LG33
Each. ....	\$5.00	5.00



## Single Steam and Air Gauge Lamps

## Round Opening

	1/2-Inch Hub for Rigid Conduit	.375 to .438-Inch O.D. of Round Cord or Cable
No. ....	LG11	LG13
Each. ....	\$3.50	3.50

## Multiple Steam and Air Gauge Lamps

## Rectangular Opening

Furnished with tapered split lead sleeve and gland nut.



No.	Each	Size Hub Inches	O.D. Round Cord or Cable Inches	O.D. Flexible Conduit or Armored Cable Inches
LG61	\$4.25	1/2	..	..
LG601	4.25	..	.220 to .260	..
LG62	4.25	..	.313 to .375	..
LG63	4.25	..	.375 to .438	..
LG64	4.25	..	.469 to .560	..
LG629	4.25	..	..	.406 to .453
LG632	4.25	..	..	.453 to .500
LG635	4.25	..	..	.500 to .547

## Mine Signal Switches

## Types AF and AFB



Operated by a pull rope. Weight of pull rope supported by a spring packed in grease.

Furnished with single-pole, double-make switches; heavy duty push button switch, or a spring contact switch. Operated by spring plunger when rope is pulled.

Normal position of Type AF is open; of Type AFB, closed. Wires enter through clearance holes in the flange on switch mechanism.

Type AF	No. Type AFB	Each	*Initial Pull Lb.	†Final Pull Lb.	Total Wt. Pounds Pull Rope Including Moisture	Additional Pull Req. to Operate Switch Pounds
AF7	AFB7	\$10.00	7	10	7 to 0	3 to 10
AF10	AFB10	10.00	10	15	10 to 0	5 to 15
AF15	AFB15	10.00	15	25	15 to 0	10 to 25
AF25	AFB25	10.00	25	50	25 to 0	25 to 50

\*Spring will support the weight shown, without starting to operate the switch.

†Weight shown is required to operate the switch, but this includes the weight of the pull rope.

## Type CGB Connectors

## Straight—Male Thread



The smaller sizes of connectors are made of steel; larger sizes, of cast Feraloy.

## With Tapered Rubber Bushing

## \*Schedule 1

For connecting round flexible cord or cable to Condulets, outlet boxes, plug handles, or rigid conduit. Cord or cable will pass entirely through the connector without removing outer covering.

No.	Each	DIMENSIONS, INCHES		
		†A	§B	C
CGB3892	\$ .65	.125 to .250	3/8	15/32
CGB192	.65	.125 to .250	1/2	19/32
CGB292	.65	.125 to .250	3/4	11/16
CGB3893	.65	.250 to .375	3/8	15/32
CGB193	.65	.250 to .375	1/2	19/32
CGB293	.65	.250 to .375	3/4	11/16
CGB194	.65	.375 to .500	1/2	19/32
CGB294	.65	.375 to .500	3/4	11/16
CGB295	.65	.500 to .625	3/4	11/16
CGB395	1.00	.500 to .625	1	15/16
CGB396	1.00	.625 to .750	1	15/16

## \*Schedule 2

For connecting round flexible cord or cable to Condulets, outlet boxes, or rigid conduit. Cord or cable will not pass through the connector without removing outer covering.

CGB195	\$ .65	.500 to .625	1/2	1/2
CGB196	1.00	.625 to .750	1/2	1/2
CGB296	1.00	.625 to .750	3/4	11/16
CGB297	1.00	.750 to .875	3/4	11/16
CGB398	1.45	.875 to 1.000	1	29/32

## With Tapered Split Lead Sleeves

## \*Schedule 3

For connecting armored cable or flexible conduit to Condulets, outlet boxes, plug handles, or rigid conduit. Armored cable or flexible conduit will pass entirely through the connector.

No.	Each	DIMENSIONS, INCHES		
		†A	§B	C
CGB184	\$ .65	.375 to .500	1/2	19/32
CGB185	.65	.500 to .563	1/2	19/32
CGB285	.65	.500 to .625	3/4	11/16
CGB386	1.00	.625 to .781	1	15/16
CGB387	1.00	.781 to .938	1	15/16
CGB489	1.45	.938 to 1.156	1 1/4	17/32
CGB589	1.45	.938 to 1.156	1 1/2	17/16

## \*Schedule 4

For connecting armored cable or flexible conduit to Condulets, outlet boxes, plug handles, or rigid conduit. Armored cable or flexible conduit will not pass through the connector without removing outer covering.

CGB186	\$1.00	.625 to .781	1/2	1/2
CGB286	1.00	.625 to .781	3/4	11/16
CGB187	1.00	.781 to .938	1/2	1/2
CGB287	1.00	.781 to .938	3/4	11/16
CGB289	1.45	.938 to 1.156	3/4	11/16
CGB389	1.45	.938 to 1.156	1	29/32

\*Use schedule numbers for identification of connectors when consulting Underwriters' Laboratories' list of inspected electrical appliances.

†A—Inside diameter in inches of rubber bushing which takes round flexible cord or cable.

†A—Inside diameter in inches of split lead sleeve which takes armored cable, or flexible conduit.

§B—Size in inches of Condulet hub with which connectors can be used.

||C—Inside diameter of hole through nipple of connectors.



## Type CGE Connectors



90° Angle—Male Thread

With Tapered Rubber Bushing

The smaller sizes of connectors are made of steel; larger sizes of cast Feraloy.

## \*Schedule 1

For connecting round flexible cord or cable to Condulets, outlet boxes, plug handles, or rigid conduit. Cord or cable will pass entirely through the connector without removing outer covering.

No.	Each	DIMENSIONS, INCHES		
		†A	†B	†C
CGE192	\$.65	.125 to .250	1/2	1/2
CGE292	.65	.125 to .250	3/4	11/16
CGE193	.65	.250 to .375	1/2	1/2
CGE293	.65	.250 to .375	3/4	11/16
CGE194	.65	.375 to .438	1/2	1/2
CGE294	.65	.375 to .500	3/4	11/16
CGE295	.65	.500 to .625	3/4	11/16
CGE395	1.00	.500 to .625	1	29/32
CGE396	1.00	.625 to .750	1	29/32
CGE397	1.00	.750 to .813	1	29/32
CGE498	1.45	.875 to 1.000	1 1/4	1 1/2

## \*Schedule 2

For connecting round flexible cord or cable to Condulets, outlet boxes, or rigid conduit. Cord or cable will not pass through the connector without removing outer covering.

No.	Each	DIMENSIONS, INCHES		
		†A	†B	†C
CGE195	\$.65	.500 to .625	1/2	1/2
CGE196	1.00	.625 to .750	1/2	1/2
CGE296	1.00	.625 to .750	3/4	11/16
CGE197	1.00	.750 to .875	1/2	1/2
CGE297	1.00	.750 to .875	3/4	11/16
CGE397	1.00	.813 to .875	1	29/32
CGE398	1.45	.875 to 1.000	1	29/32

\*Use schedule numbers for identification of connectors when consulting Underwriters' Laboratories' list of inspected electrical appliances.

†A—Inside diameter in inches of rubber bushing which takes round flexible cord or cable.

†B—Size in inches of Condulet hub with which connectors can be used.

†C—Inside diameter of hole through nipple of connectors.

## CC Series Flexible Conduit Couplings

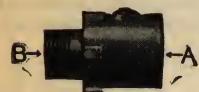
For connecting flexible conduit to Condulets.

A—Size flexible conduit with which coupling can be used.

B—Size Condulet hub with which coupling can be used.

C—Inside diameter of hole through nipple of coupling.

## Type CCB



No.	Each	DIMENSIONS, IN.		
		A	B	C
CCB30838	\$.30	3/8	3/4	11/32
CCB138	.30	3/8	1/2	7/16
CCB11	.30	1/2	1/2	7/16
CCB21	.40	1/2	3/4	5/8
CCB22	.40	3/4	3/4	5/8
*CCB33	.50	1 S.S.	1	15/16
†CCB332	.50	1 D.S.	1	13/16

## Type CCK



No.	Each	DIMENSIONS, IN.		
		A	B	C
CCK138	\$.30	3/8	1/2	15/32
CCK11	.30	1/2	1/2	5/8
CCK22	.40	3/4	3/4	25/32
*CCK33	.50	1 S.S.	1	1
†CCK332	.50	1 D.S.	1	1

\*Takes 1-inch Flexsteel single strip, 1-inch Triangle single strip, and 1-inch Federal metal hose.

†Takes 1-inch Greenfield single and double strip, and 1-inch Flexsteel double strip.

## Type CG Watertight Stuffing Boxes



A watertight stuffing box for the passage of conduit through the decks or bulkheads of ships, or where vapor, moisture, or gases are present.

Furnished with nuts, washer, double canvas gasket, and flax packing.

No.	CG1	CG2	CG3	CG4	CG5	CG6	CG7
Each	\$1.25	1.50	1.75	2.50	3.25	4.50	6.25
Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2

## Type UCE Conduit End Bushings

For bushing the end of threadless conduit.



Size In.	Threaded		Threadless	
	No.	Each	No.	Each
1/2	UCE1	\$.25	UCE19	\$.35
3/4	UCE2	.35	UCE29	.45
1	UCE3	.50	UCE39	.65
1 1/4	UCE4	.65	UCE49	.90
1 1/2	UCE5	.90	UCE59	1.25
2	UCE6	1.20	UCE69	1.80
2 1/2	UCE7	1.65	UCE79	2.55
3	UCE8	4.00	UCE89	5.15

## Condulet Unions

## Type UNY—Male

For connecting conduit to a Condulet.

Size In.	Length In.	Diam. In.	No.	Each
3/4 to 1/2	2 1/8	1 1/2	UNY1	\$.45
1	2 1/8	1 3/4	UNY21	.45
1 1/4	2 1/8	1 3/4	UNY2	.50
1 1/2	2 1/8	2 1/8	UNY3	.75
2	2 1/8	2 1/8	UNY4	1.20
	3 1/8	3 1/8	UNY5	1.80
	3 1/4	3 1/4	UNY6	2.75

## Type UNF—Female

For connecting conduit to conduit.

Size In.	Length In.	Diam. In.	No.	Each
3/4 to 1/2	1 3/4	1 1/2	UNF1	\$.45
1	1 3/4	1 3/4	UNF21	.45
1 1/4	1 3/4	1 3/4	UNF2	.50
1 1/2	1 15/16	2 1/8	UNF3	.75
2	2 1/8	2 1/8	UNF4	1.20
	2 3/8	3 1/8	UNF5	1.80
	2 3/8	3 1/4	UNF6	2.75

\*Male end is given first.

## Type UNA Universal Unions

## Schedule CE

A convenient union for conduit joints made at angles from 90° to 180°. A single clamping nut provides easy adjustment to required angles.

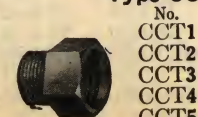
Unless a Type UNA universal union is placed at or near an outlet, or unless it is installed at an angle of about 140° to 180°, it may prove to be difficult to fish wires through union. For this reason, these devices are not approved as conduit unions for general use.

For use only if adjacent to a Condulet. Explosion-proof and dust-tight.



let. Size In.	Explosion-proof In.	Width In.	No.	Each
1/2	4	2 1/8	UNA16	\$1.45
3/4	4 1/2	2 3/8	UNA26	1.75
1	5 1/4	3 1/8	UNA36	2.00
1 1/2	3 3/8	2 1/8	UNA1	1.30
3/4	3 7/8	2 3/8	UNA2	1.45
1	4 5/8	3 1/8	UNA3	1.75

## Type CCT Self-Threading Connectors



No.	Each	Size Inches
CCT1	\$.25	1/2
CCT2	.30	3/4
CCT3	.35	1
CCT4	1.10	1 1/4
CCT5	1.40	1 1/2



## Threaded Condulet Reducers



Used to reduce condulets from larger to smaller sizes.

Size In.	No.	Per 100	Size In.	No.	Per 100
1/4 - 1/8	RE2818	\$15.00	2 1/2 - 2	RE76	\$88.80
3/8 - 1/8	RE3818	15.00	3 - 1/2	RE81	119.85
3/8 - 1/4	RE3828	15.00	3 - 3/4	RE82	119.85
1/2 - 1/8	RE1108	15.00	3 - 1	RE83	119.85
1/2 - 1/4	RE1208	15.00	3 - 1 1/4	RE84	119.85
1/2 - 3/8	RE1308	10.80	3 - 1 1/2	RE85	119.85
3/4 - 1/2	RE21	10.80	3 - 2	RE86	119.85
1 - 1/2	RE31	14.30	3 - 2 1/2	RE87	119.85
1 - 3/4	RE32	14.30	3 1/2 - 1/2	RE91	158.25
1 1/4 - 1/2	RE41	21.65	3 1/2 - 3/4	RE92	158.25
1 1/4 - 3/4	RE42	21.65	3 1/2 - 1	RE93	158.25
1 1/4 - 1	RE43	21.65	3 1/2 - 1 1/4	RE94	158.25
1 1/2 - 1/2	RE51	31.70	3 1/2 - 1 1/2	RE95	158.25
1 1/2 - 3/4	RE52	31.70	3 1/2 - 2	RE96	158.25
1 1/2 - 1	RE53	31.70	3 1/2 - 2 1/2	RE97	158.25
1 1/2 - 1 1/4	RE54	31.70	3 1/2 - 3	RE98	158.25
2 - 1/2	RE61	44.40	4 - 1/2	RE101	217.05
2 - 3/4	RE62	44.40	4 - 3/4	RE102	217.05
2 - 1	RE63	44.40	4 - 1	RE103	217.05
2 - 1 1/4	RE64	44.40	4 - 1 1/4	RE104	217.05
2 - 1 1/2	RE65	44.40	4 - 1 1/2	RE105	217.05
2 1/2 - 1/2	RE71	88.80	4 - 2	RE106	217.05
2 1/2 - 3/4	RE72	88.80	4 - 2 1/2	RE107	217.05
2 1/2 - 1	RE73	88.80	4 - 3	RE108	217.05
2 1/2 - 1 1/4	RE74	88.80	4 - 3 1/2	RE109	217.05
2 1/2 - 1 1/2	RE75	88.80			

## Threadless Condulet Reducers

For Threadless Condulets



Size Inches	Thick Wall		Thin Wall EMT			
	No.	Per 100	External Nut Type	Per 100	MT Type	Per 100
3/4 - 1/2	RE291	\$29.00	RE241	\$29.00	RE251	\$29.00
1 - 1/2	RE391	38.00	RE341	38.00	RE351	38.00
1 - 3/4	RE392	43.00	RE342	43.00	RE352	43.00
1 1/4 - 1/2	RE491	51.00	RE441	51.00	RE451	51.00
1 1/4 - 3/4	RE492	54.00	RE442	54.00	RE452	54.00
1 1/4 - 1	RE493	58.00	RE443	58.00	RE453	58.00
1 1/2 - 1/2	RE591	57.00	RE541	57.00	RE551	57.00
1 1/2 - 3/4	RE592	64.00	RE542	64.00	RE552	64.00
1 1/2 - 1	RE593	67.00	RE543	67.00	RE553	67.00
1 1/2 - 1 1/4	RE594	81.00	RE544	81.00	RE554	81.00
2 - 1/2	RE691	75.00	RE641	75.00	RE651	75.00
2 - 3/4	RE692	85.00	RE642	85.00	RE652	85.00
2 - 1	RE693	92.00	RE643	92.00	RE653	92.00
2 - 1 1/4	RE694	102.00	RE644	102.00	RE654	102.00
2 - 1 1/2	RE695	108.00	RE645	108.00	RE655	108.00

## Type UCT Adapters



For electrical metallic tubing which has the same inside diameter as the corresponding size of standard rigid conduit; therefore, the outside diameter of E.M.T. is considerably less than corresponding sizes of standard rigid conduit. This gives an opportunity for use of an adapter in standard Condulet threaded hubs. Type UCT screws into tapered threaded hub of Condulet and securely grips E.M.T.

No.	UCT1	UCT2	UCT3
Per 100	\$4.50	6.80	11.20
Size.....inches	1/2	3/4	1

## Type EL Condulet Elbows

Schedule CE

Explosion-Proof and Dust-Tight

45° Female



45° Female



90° Male



90° Female



90° Male and Female

Size In.	Dimen. A In.	No.	Each
1/2	1 1/16	EL1	\$ .20
3/4	1 3/16	EL2	.25
1	1 1/2	EL3	.30
1 1/4	1 11/16	EL4	.65
1 1/2	2	EL5	.75
2	2 1/4	EL6	1.20
2 1/2	2 3/4	EL7	2.70
3	3	EL8	3.15
3 1/2	3 9/16	EL9	4.95
4	3 3/4	EL10	5.55

90° Male

Size In.	Dimen. A In.	No.	Each
1/2	1 1/2	EL195	\$ .25
3/4	1 5/8	EL295	.35
1	1 7/8	EL395	.45
1 1/4	2 1/8	EL495	.75

90° Female

Size In.	Dimen. A In.	No.	Each
1/2	1 7/16	EL19	\$ .25
3/4	1 9/16	EL29	.35
1	1 11/16	EL39	.45
1 1/4	2 1/16	EL49	.75
1 1/2	4	EL59	1.50
2	5	EL69	2.50
2 1/2	6 1/16	EL79	4.75

90° Male and Female

Size In.	Dimen. A In.	No.	Each
1/2	1 1/2	EL196	\$ .25
3/4	1 5/8	EL296	.35
1	1 7/8	EL396	.45
1 1/4	2 1/8	EL496	.75

## Tees



Short Radius Bend



Large Radius Bend

Where these tees are used, junctions in the conduit system may be made at concealed or inaccessible points. Hubs have an integral bushing and tapered thread.

Size Inches	Short Radius Bend No.	Each	Large Radius Bend No.	Each
1/2 - 1/2 - 1/2	ET219	.....	ET1	\$1.25
3/4 - 1/2 - 1/2	ET229	\$.80	ET21	1.45
3/4 - 3/4 - 3/4	ET229	.85	ET31	1.55
1 - 1/2 - 1/2	ET329	.90	ET32	1.90
1 - 1 - 1	ET339	.95	.....	.....
1 1/4 - 1 - 1	ET439	1.05	.....	.....

†Size of largest hub given first.

## Type PLG Pipe Plugs

Schedule CE

Recessed



Square Head



Size Inches	No.	Each	Size Inches	No.	Each
1/2	PLG1	\$ .06	1/2	PLG15	\$ .06
3/4	PLG2	.08	3/4	PLG25	.08
1	PLG3	.10	1	PLG35	.10
1 1/4	PLG4	.15	1 1/4	PLG45	.15
1 1/2	PLG5	.20	1 1/2	PLG55	.20
2	PLG6	.30	2	PLG65	.30
2 1/2	PLG7	.50	2 1/2	PLG75	.50
3	PLG8	.80	3	PLG85	.80



### Type CUC Sign Condulets

Used for lighting a bracket support on sign posts or arms. Has bushing that extends into the pipe through a  $1\frac{1}{16}$ -inch hole drilled in the pipe.

Malleable iron clamp is held by two screws for securing the Condulet to the pipe. The gasket provided makes a watertight joint between the Condulet and the pipe.

A threaded dome cover provides access to wires and splices and makes a watertight enclosure.



SIZE, INCHES		No.	Each
Support Pipe	Bracket Arms		
1	$\frac{1}{2}$	CUC13	\$1.00
$1\frac{1}{4}$	$\frac{1}{2}$	CUC14	1.05
$1\frac{1}{2}$	$\frac{1}{2}$	CUC15	1.10
2	$\frac{1}{2}$	CUC16	1.15
$2\frac{1}{2}$	$\frac{1}{2}$	CUC17	1.20
1	$\frac{3}{4}$	CUC23	1.10
$1\frac{1}{4}$	$\frac{3}{4}$	CUC24	1.15
$1\frac{1}{2}$	$\frac{3}{4}$	CUC25	1.20
2	$\frac{3}{4}$	CUC26	1.25

### Type CUH Hub Plates

For Type CUC Sign Condulets

Used for connection of  $\frac{3}{4}$ -inch conduit to sign standards for leading circuit wires into or out of the sign standard.

Has bushing that extends into the pipe through a  $1\frac{1}{16}$ -inch hole drilled in the pipe.



Fastened to the pipe with two 12-24 machine screws, requiring two tapped holes in the pipe,  $2\frac{3}{4}$  inches on centers.

SIZE, INCHES		No.	Each
Support Pipe	Conduit		
2, $2\frac{1}{2}$ , 3	$\frac{3}{4}$	CUH28	\$.25

### Type PED Condulet Pedestals



Threaded



Not Threaded

Rigid support for Condulets mounted on conduit that projects through the floor.

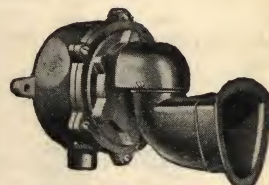
Threaded		No.	Each
Size In.	Height In.		
$\frac{3}{4}$	3	PED223	\$1.20
1	3	PED333	1.45
$1\frac{1}{4}$	3	PED443	1.70
Not Threaded		No.	Each
Size In.	Height In.		
$\frac{1}{2}$	3	PED13	\$.95
$\frac{3}{4}$	3	PED23	1.20
1	3	PED33	1.45
$1\frac{1}{4}$	3	PED43	1.70
$1\frac{1}{2}$	3	PED53	1.95
2	3	PED63	2.20
$2\frac{1}{2}$	3	PED73	2.45
$\frac{1}{2}$	6	PED16	1.75
$\frac{3}{4}$	6	PED26	2.00
1	6	PED36	2.25
$1\frac{1}{4}$	6	PED46	2.50
$1\frac{1}{2}$	6	PED56	2.75
2	6	PED66	3.00
$2\frac{1}{2}$	6	PED76	3.25

### Type WH Industrial Signal Condulets

With Vibratory Horn Unit



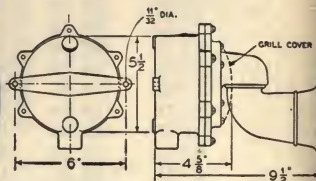
Type WH  
With Grill



Type WH  
With Single Projector



Type WH  
With Double Projector



Type WH  
Dimensions

Used as code or call signals, alarms, and for various other signalling applications in industrial plants, warehouses, mines, etc.

Raintight and suitable for use inside in non-hazardous locations or outside where exposed to the weather.

Housings have mounting feet with fastening holes and a hub for  $\frac{1}{2}$ -inch threaded conduit.

#### With Grill

No.	Each	Volts	Current	*Cycles	Six Yards	Decibels at Max. Watts	Volume
WH130A	\$8.45	6-250	A.C.	50-60	92	18.5	Standard
WH131	14.00	6-250	A.C.	50-60	104	49	High Power
WH140A	10.70	6-250	D.C.	50-60	92	19.8	Standard
WH141	16.30	6-250	D.C.	50-60	102	30	High Power

#### With Single Projector

WH130	\$11.25	6-250	A.C.	50-60	92	18.5	Standard
WH132	16.85	6-250	A.C.	50-60	104	49	High Power
WH140	13.50	6-250	D.C.	50-60	92	19.8	Standard
WH142	19.10	6-250	D.C.	50-60	102	30	High Power

#### With Double Projector

WH150	\$15.20	6-250	A.C.	50-60	92	18.5	Standard
WH133	21.40	6-250	A.C.	50-60	104	49	High Power
WH151	17.40	6-250	D.C.	50-60	92	19.8	Standard
WH143	23.60	6-250	D.C.	50-60	102	30	High Power

\*If supply circuit is a.c., specify the frequency when ordering. Available in 25 to 40-cycle range.



## Crouse Hinds Explosion-Proof Equipment

Used in locations which are hazardous because of the presence of explosive atmospheres which require different electrical wiring and apparatus than in locations in which such hazards do not exist. Explosive atmospheres may exist because of the presence of such gases as:

<b>Hydrogen</b>	<b>Ethylene</b>	<b>Gasoline Vapors</b>
<b>Natural Gas</b>	<b>Butane</b>	<b>Ethyl Ether</b>
<b>Manufactured Gas</b>	<b>Cyclopropane</b>	<b>Acetone</b>
<b>Alcohol</b>	<b>Lacquer Solvents</b>	

Many dusts, when thrown into the air, create explosive atmospheres. Among the more common dusts are those of certain metals, notably aluminum and magnesium; those of carbon black, coal, and coke. All of the foregoing have the further hazard of being electrically conductive; therefore, they must be prevented from being deposited on live parts of electrical apparatus where they would form short circuits and consequent explosions.

Dusts of all cereals, because of their lightness and highly combustible natures, form atmospheres, which, when ignited, explode with great violence.

In addition to the flammable gases, vapors, and combustible dusts are easily ignitable fibers, which, while they do not create explosive atmospheres, they do introduce the danger of flash fires which are near explosive in violence.

In all of the above locations, fires from electrical causes may occur because of exposed arcs, flames, sparks or particles of burning material escaping from enclosures. Also, apparatus operating at temperatures sufficient to ignite the gas, vapor, dust or fibers may be the cause.

### National Electrical Code

Article 500 of the National Electrical Code is devoted exclusively to locations deemed hazardous because of the expected continual or occasional presence of explosive gases, vapors, combustible dusts, and easily ignitable fibers. In the code, these locations are classified substantially as follows:

**Class I**—Locations hazardous because of dangerous concentrations of flammable gases or vapors.

**Class II**—Locations hazardous because combustible dusts may be present in the atmospheres in dangerous amounts.

**Class III**—Locations in which easily ignitable fibers are present in sufficient quantities to create a hazardous condition.

All of the above classes are divided into two divisions. In general, Division 1 includes localities where the hazardous material is used or processed, while Division 2 includes localities of lesser hazard such as storage areas, or where dangerous conditions are not likely to exist because of other precautions.

In locations where the danger is due to flammable gases or vapors (Class I), the Code requires explosion-proof equipment. This does not mean vaportight.

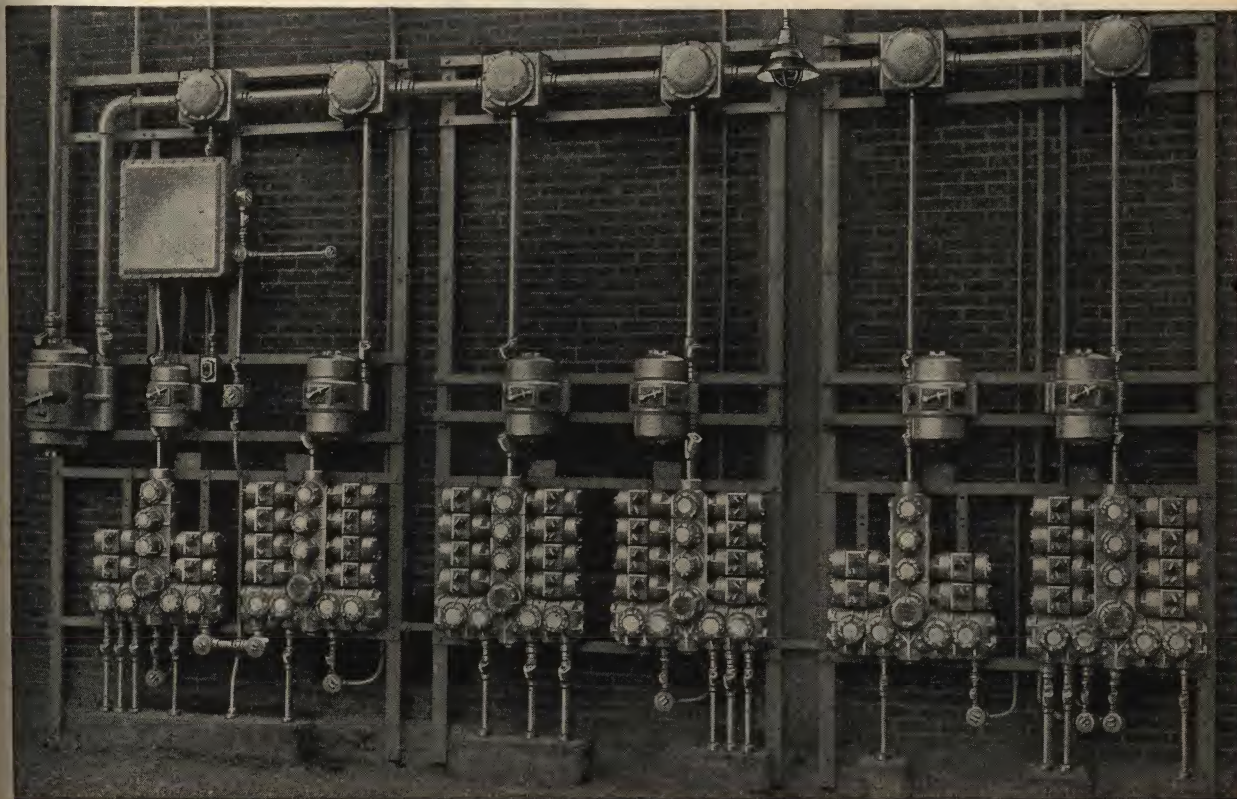
**Explosion-Proof Equipment** is designed on the supposition that the enclosure will become filled with the explosive mixture. To be explosion-proof, then, the enclosure must be strong enough to withstand an explosion of the trapped gas or vapor mixture. Furthermore, all joints in explosion-proof enclosures must prevent the issuance of flames. In addition, these devices must operate at temperatures which will not ignite the surrounding atmosphere. Vaportight equipment is not built to withstand the conditions stated above and is, therefore, not safe for use in Class I locations.

**Dust-Tight Enclosures** are required for Class II locations according to the Code. Enclosures intended for ordinary non-hazardous locations are not dust-tight and should not be used where the Code specifically requires dust-tight construction.

Apparatus such as motors and lighting units, which operate at appreciable temperatures, must be designed so as not to reach dangerous temperatures even when blanketed by heavy deposits of dusts. Ordinary vaporproof fixtures do not have sufficient radiating ability to make them acceptable for use where combustible dusts are likely to collect on them.

Condulets intended for use in hazardous locations are manufactured to the exacting standards of the Underwriters' Laboratories, Inc. Conformity with those standards is assured by careful design, workmanship, and inspection.

The Condulet line is so complete that there is never any difficulty in choosing the proper Condulet for a particular purpose.



An Installation Of Crouse-Hinds Explosion-Proof Equipment



## GUA Series Junction Condulets

Schedule CE

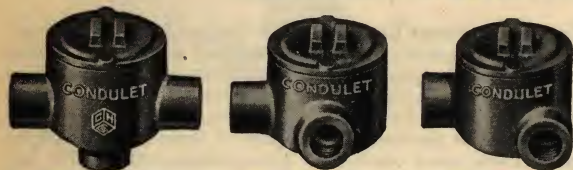
Explosion-Proof and Dust-Tight



Type GUA

Type GUAC

Type GUAB



Type GUAD

Type GUAL

Type GUAN



With Threaded Hubs

Furnished with surface covers, but can be furnished without covers or with flush, sealing or nipple covers, or fixture canopies.



With Union Hubs

## Type GUA

Size In.	Nom. Diam. Cover In. Open., In.	OUTSIDE DIMEN. OF BODY, IN.		With Threaded Hubs		With Union Hubs	
		Diam.	Depth	No.	Each	No.	Each
1/2	2	2 1/2	1 3/4	GUA14	\$1.45	.....	.....
1/2	2	2 1/2	2	.....	.....	GUAC645	\$1.80
3/4	2	2 1/2	2	GUAC24	1.50	GUAC745	1.80
1/2	3	3 1/2	2	GUAB16	1.80	.....	.....
1/2	3	3 1/2	2	GUAC26	1.85	GUAC765	2.15
3/4	3	3 1/2	2	GUAC36	1.90	GUAC865	2.40
1	3	3 1/2	2 3/8	GUAC47	3.15	.....	.....
1 1/4	3 5/8	4 1/4	2 1/2	.....	.....	.....	.....

## Type GUAC

1/2	2	2 1/2	1 3/4	GUAC14	\$1.55	.....	.....
1/2	2	2 1/2	2	.....	.....	GUAC645	\$2.25
3/4	2	2 1/2	2	GUAC24	1.65	GUAC745	2.25
1/2	3	3 1/2	2	GUAC16	1.90	.....	.....
1/2	3	3 1/2	2	GUAC26	2.00	GUAC765	2.60
3/4	3	3 1/2	2	GUAC36	2.10	GUAC865	3.10
1	3	3 1/2	2 3/8	GUAC47	3.40	.....	.....
1 1/4	3 5/8	4 1/4	2 1/2	.....	.....	.....	.....

## Type GUAB

1/2	2	2 1/2	1 3/8	GUAB14	\$1.55	.....	.....
1/2	2	2 1/2	2	.....	.....	GUAB645	\$2.25
3/4	2	2 1/2	2	GUAB24	1.65	GUAB745	2.25
1/2	3	3 1/2	2	GUAB16	1.90	GUAB665	2.60
1/2	3	3 1/2	2	GUAB26	2.00	GUAB765	2.60
3/4	3	3 1/2	2	GUAB36	2.10	.....	.....
1	3	3 1/2	2 3/8	GUAB47	3.40	.....	.....
1 1/4	3 5/8	4 1/4	2 1/2	GUAB59	7.10	.....	.....
1 1/2	5	5 5/8	3 7/8	.....	.....	.....	.....

## Type GUAD

1/2	2	2 1/2	1 3/4	GUAD14	\$1.65	.....	.....
1/2	2	2 1/2	2	.....	.....	GUAD645	\$2.70
3/4	2	2 1/2	2	GUAD24	1.80	GUAD745	2.70
1/2	3	3 1/2	2	GUAD16	2.00	GUAD665	3.05
3/4	3	3 1/2	2	GUAD26	2.15	GUAD765	3.05

## Type GUAL

1/2	2	2 1/2	1 3/4	GUAL14	\$1.55	.....	.....
1/2	2	2 1/2	2	.....	.....	GUAL645	\$2.25
3/4	2	2 1/2	2	GUAL24	1.65	GUAL745	2.25
1/2	3	3 1/2	2	GUAL26	2.00	.....	.....
1	3	3 1/2	2 3/8	GUAL36	2.10	GUAL865	3.10
1 1/4	3 5/8	4 1/4	2 1/2	GUAL47	3.40	.....	.....

## Type GUAN

1/2	2	2 1/2	2	GUAN14	\$1.55	.....	.....
1/2	2	2 1/2	2 1/4	.....	.....	GUAN645	\$2.25
3/4	2	2 1/2	2 1/4	GUAN24	1.65	GUAN745	2.25
1	3	3 1/2	2 3/8	GUAN36	2.10	GUAN865	3.10
1 1/4	3 5/8	4 1/4	2 3/4	GUAN47	3.40	.....	.....

Prices for combinations of threaded and union hubs upon request.

## GUA Series Junction Condulets

Schedule CE

Explosion-Proof and Dust-Tight



Type GUAT

Type GUAW

Type GUAX

Furnished with surface covers, but can be furnished without covers or with flush, sealing or nipple covers, or fixture canopies.

## Type GUAT

Size In.	Nom. Diam. Cover In. Open., In.	OUTSIDE DIMEN. OF BODY, IN.		With Threaded Hubs		With Union Hubs	
		Diam.	Depth	No.	Each	No.	Each
1/2	2	2 1/2	1 3/4	GUAT14	\$1.65	.....	.....
1/2	2	2 1/2	2	.....	.....	GUAT645	\$2.70
3/4	2	2 1/2	2	GUAT24	1.80	GUAT745	2.70
1/2	3	3 1/2	2	GUAT16	2.00	GUAT665	3.05
1/2	3	3 1/2	2	GUAT26	2.15	GUAT765	3.05
3/4	3	3 1/2	2	GUAT37	3.50	GUAT875	5.00
1	3 5/8	4 1/4	2 3/8	GUAT49	7.25	.....	.....
1 1/4	5	5 5/8	3 7/8	.....	.....	GUAT995	11.00
1 1/4	5	5 5/8	3 7/8	.....	.....	.....	.....

## Type GUAW

1/2	2	2 1/2	1 3/4	GUAW14	\$1.75	.....	.....
1/2	2	2 1/2	2	.....	.....	GUAW645	\$3.15
3/4	2	2 1/2	2	GUAW24	1.95	GUAW745	3.15
1/2	3	3 1/2	2	GUAW16	2.10	GUAW665	3.50
3/4	3	3 1/2	2	GUAW26	2.30	GUAW765	3.50

## Type GUAX

1/2	2	2 1/2	1 3/4	GUAX14	\$1.75	.....	.....
1/2	2	2 1/2	2	.....	.....	GUAX645	\$3.15
3/4	2	2 1/2	2	GUAX24	1.95	GUAX745	3.15
1/2	3	3 1/2	2	GUAX16	2.10	GUAX665	3.50
1/2	3	3 1/2	2	GUAX26	2.30	GUAX765	3.50
3/4	3	3 1/2	2	GUAX37	3.70	GUAX875	5.70
1	3 5/8	4 1/4	2 3/8	GUAX49	7.50	.....	.....
1 1/4	5	5 5/8	3 7/8	.....	.....	GUAX995	12.50
1 1/4	5	5 5/8	3 7/8	.....	.....	.....	.....

Prices for combinations of threaded and union hubs upon request.

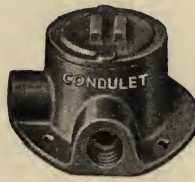
## GUF Series Junction Condulets

Schedule CE

Explosion-Proof and Dust-Tight

Furnished with surface cover and threaded hubs.

## Type GUFC



Size In.	Cover Opening In.	DIMENSIONS OF BODY, IN.		No.	Each
		Diam.	Depth		
1/2	3	3 1/2	1 15/16	GUFC16	\$2.30
3/4	3	3 1/2	1 15/16	GUFC26	2.40
1	3	3 1/2	2 1/4	GUFC36	2.60
1	5	5 5/8	2 1/4	GUFC39	7.75

## Type GUFL

1/2	3	3 1/2	1 15/16	GUFL16	\$2.30
3/4	3	3 1/2	1 15/16	GUFL26	2.40

## Type GUFT

1/2	3	3 1/2	1 15/16	GUFT16	\$2.50
3/4	3	3 1/2	1 15/16	GUFT26	2.60
1	3	5 1/4	2 3/8	GUFT36	2.80
1	5	7 1/2	3 3/4	GUFT39	7.95

## Type GUFX

1/2	3	3 1/2	1 15/16	GUFX16	\$2.70
3/4	3	3 1/2	1 15/16	GUFX26	2.80
1	3	5 1/4	2 3/8	GUFX36	3.00
1	5	7 1/2	3 3/4	GUFX39	8.15



## GUA Series Junction Condulets

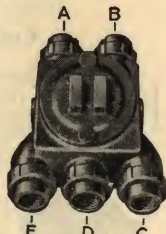
Schedule CE  
With Union Hubs  
Explosion-Proof and Dust-Tight



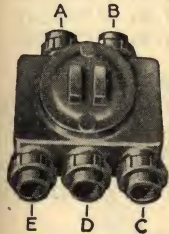
Type GUAG



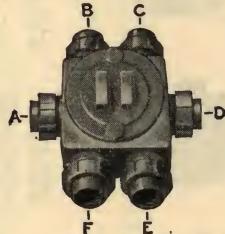
Type GUAH



Type GUAP



Type GUAQ



Type GUAF

Outside dimensions of body: length,  $3\frac{3}{4}$  inches; depth,  $1\frac{1}{8}$  inches at corners,  $3\frac{1}{8}$  inches over covers; nominal diameter of cover opening, 3 inches; width, type GUAQ,  $5\frac{5}{8}$  inches; other types  $3\frac{3}{4}$  inches.

### Type GUAG

HUB SIZES INCHES				Without Nuts and Sleeves	
A	B	C		No.	Each
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$		GUAG706	\$2.75
$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$			
$1\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$			
$3\frac{3}{4}$	$1\frac{1}{2}$	$3\frac{3}{4}$			
$3\frac{3}{4}$	$3\frac{3}{4}$	$1\frac{1}{2}$			

### Type GUAH

HUB SIZES INCHES				Without Nuts and Sleeves	
A	B	C	D	No.	Each
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	GUAH706	\$2.95
$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$		
$1\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$		
$3\frac{3}{4}$	$1\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$		
$3\frac{3}{4}$	$3\frac{3}{4}$	$1\frac{1}{2}$	$3\frac{3}{4}$		

### Type GUAP

HUB SIZES INCHES					Without Nuts and Sleeves	
A	B	C	D	E	No.	Each
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$3\frac{3}{4}$	$1\frac{1}{2}$	*GUAP706	\$3.15
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$		
$1\frac{1}{2}$	$1\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$		
$1\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$1\frac{1}{2}$	$3\frac{3}{4}$		
$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$1\frac{1}{2}$	$3\frac{3}{4}$		
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	†GUAP7806	3.35
$3\frac{3}{4}$	$3\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$		

### Type GUAQ

HUB SIZES INCHES					Without Nuts and Sleeves	
A	B	C	D	E	No.	Each
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$3\frac{3}{4}$	$1\frac{1}{2}$	*GUAQ706	\$3.70
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$		
$1\frac{1}{2}$	$1\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$		
$1\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$1\frac{1}{2}$	$3\frac{3}{4}$		
$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$1\frac{1}{2}$	$3\frac{3}{4}$		

### Type GUAF

HUB SIZES INCHES						Without Nuts and Sleeves	
A	B	C	D	E	F	No.	Each
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	GUAF706	\$3.90
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$3\frac{3}{4}$		
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$		
$1\frac{1}{2}$	$1\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$		
$1\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$1\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$		

With Nuts and Sleeves	
No.	Each
GUAG6665	\$3.50
GUAG7775	3.50
GUAG6775	3.50
GUAG7665	3.50
GUAG6765	3.50

With Nuts and Sleeves	
No.	Each
GUAH6665	\$3.95
GUAH7775	3.95
GUAH6775	3.95
GUAH6675	3.95

With Nuts and Sleeves	
No.	Each
GUAP666765	\$4.40
GUAP666865	4.40
GUAP667775	4.40
GUAP667875	4.40
GUAP777775	4.40
GUAP777875	4.40
GUAP668885	4.90
GUAP778885	4.90

With Nuts and Sleeves	
No.	Each
GUAQ666765	\$4.95
GUAQ666865	4.95
GUAQ667775	4.95
GUAQ667875	4.95
GUAQ777775	4.95
GUAQ777875	4.95

With Nuts and Sleeves	
No.	Each
GUAF666665	\$5.40
GUAF677675	5.40
GUAF666775	5.40
GUAF777775	5.40
GUAF766665	5.40
GUAF766775	5.40

## Union Hubs Nuts and Sleeves

Schedule CE  
For GUA Series Condulets



Size Nut Inches	Size Sleeve Inches	No.	Each
$3\frac{3}{4}$	$1\frac{1}{2}$	GUH215	\$.25
$3\frac{3}{4}$	$3\frac{3}{4}$	GUH25	.25
1	$1\frac{1}{2}$	GUH315	.35
1	$3\frac{3}{4}$	GUH325	.35
1	$1\frac{1}{2}$	GUH35	.35
$1\frac{1}{4}$	$3\frac{3}{4}$	GUH425	.75
$1\frac{1}{4}$	$1\frac{1}{4}$	GUH45	.75
$1\frac{1}{2}$	$3\frac{3}{4}$	GUH525	1.25
$1\frac{1}{2}$	$1\frac{1}{2}$	GUH55	1.25
2	1	GUH635	2.25
2	2	GUH65	2.25
$2\frac{1}{2}$	$2\frac{1}{2}$	GUH75	3.25
3	3	GUH85	4.25

## Threaded Blank Caps

For GUA Series Condulets without Nuts and Sleeves



Size In.	No.	Each
$3\frac{3}{4}$	GUH20	\$.15
1	GUH30	.20

## Threaded Covers, Canopies and Adapters

For GUA and GUF Series Condulets

Used interchangeably on Condulets of GUA and GUF series.

### Surface Covers



Diam. Open. In.	No.	Each
2	GUA04	\$.65
3	GUA06	.75
$3\frac{5}{8}$	GUA07	1.10
5	GUA09	3.35

### Fixture Canopies



Diam. In.	Fix. Stem In.	No.	Each
3	$\frac{3}{4}$	GUA068	\$3.50
3	$1\frac{1}{4}$	*GUA0684	3.50
5	$1\frac{1}{4}$	GUA098	6.10

### Flush Covers



	No.	Each
2	GUA049	\$.65
3	GUA069	.75
$3\frac{5}{8}$	GUA079	1.10
5	GUA099	3.35

### Sealing Covers



	No.	Each
2	GUA041	\$.80
3	GUA062	1.00
$3\frac{5}{8}$	GUA072	1.30
5	GUA092	3.75

### Fixture Covers



3	$\frac{1}{2}$	GUA0686	\$2.75
3	$\frac{3}{4}$	GUA0687	2.75

### Nipple Covers



<b>2</b>	<b>1/2</b>	<b>GUA0471</b>	<b>\$1.20</b>
<b>3</b>	<b>1/2</b>	<b>GUA0671</b>	<b>1.55</b>
<b>3</b>	<b>3/4</b>	<b>GUA0672</b>	<b>1.75</b>

### Adapters

35/8	..	GUA0760	\$1.55
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\*For 500-watt Type EVA.

## Type GUA Extensions

For flush mounted GUA Series with 3-inch cover opening to make one or more exposed extensions.

Furnished with 3 pipe plugs.



Size In.	No.	Each
$1\frac{1}{2}$	GUAX166	\$2.20
$3\frac{3}{4}$	GUAX266	2.20

\*The D hub requires the use of a 1-inch nut for  $\frac{1}{2}$ ,  $\frac{3}{4}$ , and 1-inch sleeve.

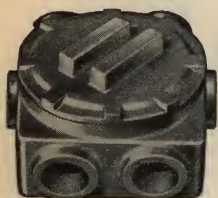
†The C, D, and E hubs require the use of a 1-inch nut for  $\frac{1}{2}$ ,  $\frac{3}{4}$ , and 1-inch sleeve.



## Type GUP Junction Condulets

Schedule CE

## Explosion-Proof and Dust-Tight



Suitable for gasoline pump installations that are to be rewired to comply with the new inspection requirements for hazardous locations.

Hubs are tapped for 3/4-inch conduit.

Cover opening is 3 5/8 inches in diameter.

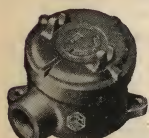
No. GUP215 has 6 hubs; 2 in top, 1 in each side, 2 in bottom, and none in back. No. GUP214 has 10 hubs; 2 in top, 1 in each side, 2 in bottom, and 4 in back.

Dimensions of body exclusive of hubs: length, 4 1/8 inches; width, 4 1/8 inches; depth, 2 1/2 inches.

No. ....	GUP214	GUP215
Each .....	\$2.90	2.70
No. of Hubs .....	10	6

## GUJ Series Junction Condulets

## Explosion-Proof and Dust-Tight



Type GUJ



Type GUJC



Type GUJL

Hub Size Inches	Type GUJ		Type GUJC		Type GUJL	
	No.	Each	No.	Each	No.	Each
1/2	GUJ16	\$1.80	GUJC16	\$1.90	GUJL16	\$1.90
3/4	GUJ26	1.85	GUJC26	2.00	GUJL26	2.00
1	GUJ36	1.90	GUJC36	2.10	GUJL36	2.10



Type GUJB



Type GUJT



Type GUJX

Hub Size Inches	Type GUJB		Type GUJT		Type GUJX	
	No.	Each	No.	Each	No.	Each
1/2	GUJB16	\$1.90	GUJT16	\$2.00	GUJX16	\$2.10
3/4	GUJB26	2.00	GUJT26	2.15	GUJX26	2.30
1	GUJB36	2.10	GUJT36	2.30	GUJX36	2.50

## Threaded Covers



Flat



Dome

Fixture  
Union Hub Type

Flat		Dome		Fixture	
No.	Each	No.	Depth Inches	No.	Size Stem, In
GUJ06	\$ .75	GUJ0611	1	GUJ0686	1/2
.....	.....	GUJ0612	2	GUJ0687	3/4
					Each
					\$2.75
					2.75

## CPS Series Junction Condulets

Schedule CE

## With Hub Cover

## Explosion-Proof and Dust-Tight

Outside dimensions of body, exclusive of hubs: diameter, Form 10, 3 1/2 inches; diameter, Form 20, 4 5/8 inches; depth, Form 10, 1 7/8 inches; depth, Form 20, 1 7/8 inches.

## Dead End

Hub Size, In. Cond. Cover	Form 10		Form 20	
	No.	Each	No.	Each
1/2	CPS10181	\$1.40	CPS10281	\$2.25
3/4	CPS20181	1.45	CPS20281	2.30
1	CPS30181	1.50	CPS30281	2.35
1 1/2	CPS30182	1.50	CPS30282	2.35
1 3/4	CPS30182	1.55	CPS30282	2.40

## Through Feed

Hub Size, In. Cond. Cover	Form 10		Form 20	
	No.	Each	No.	Each
1/2	CPS11181	\$1.50	CPS11281	\$2.35
3/4	CPS21181	1.60	CPS21281	2.45
1	CPS31181	1.65	CPS31281	2.50
1 1/2	CPS31182	1.70	CPS31282	2.55
1 3/4	CPS31182	1.75	CPS31282	2.60

## Type L

Hub Size, In. Cond. Cover	Form 10		Form 20	
	No.	Each	No.	Each
1/2	CPS12181	\$1.50	CPS12281	\$2.35
3/4	CPS22181	1.60	CPS22281	2.45
1	CPS32181	1.65	CPS32281	2.50
1 1/2	CPS32182	1.70	CPS32282	2.55
1 3/4	CPS32182	1.75	CPS32282	2.60

## Type T

Hub Size, In. Cond. Cover	Form 10		Form 20	
	No.	Each	No.	Each
1/2	CPS13181	\$1.60	CPS13281	\$2.45
3/4	CPS23181	1.75	CPS23281	2.60
1	CPS33181	1.80	CPS33281	2.65
1 1/2	CPS33182	1.90	CPS33282	2.75
1 3/4	CPS33182	1.95	CPS33282	2.80

## Type X

Hub Size, In. Cond. Cover	Form 10		Form 20	
	No.	Each	No.	Each
1/2	CPS14181	\$1.70	CPS14281	\$2.55
3/4	CPS24181	1.90	CPS24281	2.75
1	CPS34181	1.95	CPS34281	2.80
1 1/2	CPS34182	2.15	CPS34282	2.95
1 3/4	CPS34182	2.20	CPS34282	3.00

## Furnished with Blank Covers

## Dead End

Hub Size Inches	Form 10		Form 20	
	No.	Each	No.	Each
1/2	CPS10185	\$1.25	CPS10286	\$2.10
3/4	CPS20185	1.30	CPS20286	2.15
1	CPS30185	1.35	CPS30286	2.20

## Through Feed

Hub Size, In. Cond. Cover	Form 10		Form 20	
	No.	Each	No.	Each
1/2	CPS11185	\$1.35	CPS11286	\$2.20
3/4	CPS21185	1.45	CPS21286	2.30
1	CPS31185	1.55	CPS31286	2.40

## Type L

Hub Size, In. Cond. Cover	Form 10		Form 20	
	No.	Each	No.	Each
1/2	CPS12185	\$1.35	CPS12286	\$2.20
3/4	CPS22185	1.45	CPS22286	2.30
1	CPS32185	1.55	CPS32286	2.40

## Type T

Hub Size, In. Cond. Cover	Form 10		Form 20	
	No.	Each	No.	Each
1/2	CPS13185	\$1.45	CPS13286	\$2.30
3/4	CPS23185	1.60	CPS23286	2.45
1	CPS33185	1.75	CPS33286	2.60

## Type X

Hub Size, In. Cond. Cover	Form 10		Form 20	
	No.	Each	No.	Each
1/2	CPS14185	\$1.55	CPS14286	\$2.40
3/4	CPS24185	1.75	CPS24286	2.60
1	CPS34185	1.95	CPS34286	2.80

If specified on the order, CPS Series Condulets will be furnished with fastening lugs at an advance of 10 cents in the list prices.



## Type ESC Junction Condulets

Schedule CE

Explosion-Proof and Dust-Tight

For Pulling In or Splicing Conductors

Class I, Group D; and Classes II and III



For use in hazardous locations, and designed to afford a convenient opening in the conduit system for pulling in or splicing conductors. They have threaded hubs for rigid conduit.

The body is cylindrical with a long and wide opening in the front between the threaded end portions.

Hub Size In.	No.	Each	Overall Length, In. Conduit Pulled Open	Opening Only
1/2	ESC1	\$5.50	16	6
3/4	ESC2	5.50	16	6
1	ESC3	10.25	23	10
1 1/4	ESC4	10.25	23	10
1 1/2	ESC5	19.50	37	16
2	ESC6	19.50	37	16
2 1/2	ESC7	30.00	53	24
3	ESC8	30.00	53	24
3 1/2	ESC9	65.00	81	38
4	ESC10	65.00	81	38

## Type EJH Junction Condulets

Explosion-Proof and Dust-Tight

For Pulling In or Splicing Conductors



Condulet body has four bosses located 90° apart around the sides and one boss in the center back. These bosses can be drilled and tapped for 1/2 or 3/4 inch conduit.

When ordering include sketch showing location of holes to be drilled and tapped and size desired. Price of condulet includes drilling and tapping.

With Flat Cover			
Inside Depth Inches	No.	Each	
2 1/4	EJH50	\$8.00	
With 1 1/4-Inch Dome Cover			
3 3/8	EJH51	\$8.40	
With 2 1/2-Inch Dome Cover			
4 3/8	EJH52	\$8.80	
With 5-Inch Dome Cover			
7 1/8	EJH55	\$9.90	

## Type LBH Condulets

For Pulling Cables

Explosion-Proof and Dust-Tight



Particularly well suited for pulling large conductors or conductors that are stiff because of their lead sheathing.

Covers are domed, which provides room for an easy bend in the conductor, thus avoiding undue strain upon the insulation or lead sheath.

Hub Size In.	No.	Each	Overall Length Inches	Overall Width Inches
1/2	LBH10	\$2.80	4	2 3/4
3/4	LBH20	3.00	4	2 3/4
1	LBH30	7.70	7	4
1 1/4	LBH40	8.00	7	4
1 1/2	LBH50	11.50	10	5
2	LBH60	12.00	10	5
2 1/2	LBH70	25.00	14	6 1/16
3	LBH80	25.60	14	6 1/16

## Universal Junction Condulets

Schedule CE

Explosion-Proof and Dust-Tight

Types GU, GUE, and GUB



Type GU



Type GUB01

Equipped with threaded or union hubs located as required. When ordering, furnish a sketch showing the size, location, and type of hubs required on each Condulet. Add price of hubs to price of Condulet. Types GU and GUE Condulets take CB1124, four-wire connection block.

No.	Each	OVERALL DIMENSIONS IN INCHES OF BODY INCLUDING COVER			Diam. Cover Opening Inches
		Width	Height	Depth	
GU	\$2.00	4 1/8	4 1/8	3 3/16	3 3/8
GUE	2.00	4 5/8	4 5/8	4 1/4	3 3/8
GUB01	12.70	6 1/2	7	5 1/2	5 1/2
GUB02	18.50	8	10	5 1/2	7
GUB06	23.00	8 1/2	10	6 1/2	7
GUB03	40.00	11	12	9	9 5/8
GUB04	40.00	11	12	9	9 5/8

Symbol Nos. and Letters for Max. Size Hubs That Can be Used

No.	Number of Hubs	ON TOP AND BOTTOM			ON BACK	
		1	2	3	1	2
GU	Threaded	4	4	1	4	4
	Union	Y	Y	..	R	Y
GUE	Threaded	6	5	2	4	5
	Union	T	Y	W	R	R
GUB01	Threaded	7	6	4	10	7
	Union	U	S	Y	V	T
GUB02	Threaded	7	7	5	10	9
	Union	U	T	Y	V	V
GUB06	Threaded	8	7	5	10	9
	Union	V	T	Y	V	V
GUB03	Threaded	10	9	6	10	10
	Union	XD	V	S	XD	V
GUB04	Threaded	10	8	5	10	10
	Union	XD	U	S	XD	V

### Threaded and Union Hubs

Hub Size Inches	Threaded		Union	
	Symbol	Each	Symbol	Each
1/2	1	\$ .60	W	\$1.00
3/4	2	.65	X	1.00
1	3	.75	Y	1.20
1 1/4	4	.90	R	1.75
1 1/2	5	1.15	S	3.00
2	6	1.50	T	4.00
2 1/2	7	2.25	U	5.50
3	8	3.25	V	7.00
3 1/2	9	4.50	WD	9.00
4	10	6.00	XD	11.00

### Type GUB Dome Covers

When splices in heavy conductors are to be made and enclosed, dome covers are more suitable as the conductors may be pulled in with the ends well out beyond the body opening for splicing.

In ordering dome covers for GUB Condulets deduct the cost of the flat cover which is shown in the listing below, from the cost of the complete Condulet listed above, then add the cost of dome cover selected from the listing below.

Body No.	Flat Cover		Nominal Depth Inches	Dome Cover	
	No.	Each		No.	Each
GUB01	GUB0101	\$3.20	2	GUB712	\$5.90
			4	GUB714	6.70
			10	GUB7110	9.10
			3	GUB723	9.15
GUB02	GUB0102	6.50	6	GUB726	11.40
			9	GUB729	13.65
			12	GUB7212	15.90
			17	GUB7217	19.65
GUB03	GUB0103	9.30	4	GUB734	11.40
			10	GUB738	16.50
			12	GUB7311	18.20
			14	GUB7313	19.90
GUB04			17	GUB7316	22.45



**Industrial Signal Condulets***Schedule CE***Explosion-Proof and Dust-Tight****Class I, Group D; and Classes II and III**

Housings for each of these signals have sealing hubs at the bottom. Leads from the signal operating means are sealed in these hubs and brought through short pieces of conduit into GUA series junction Condulets where they can be spliced to the line wires.

**Type ETR Bell Signals****Continuous Vibration  
110-Volt Universal Motor Operation**

Hub Size In.	Diam. Bell In.	No.	Each
3/4	6	ETR283	\$71.00
3/4	8	ETR285	71.00

**Single Stroke  
110-Volt, 60-Cycle A.C. Solenoid Operation**

Hub Size In.	Diam. Bell In.	No.	Each
3/4	6	ETR284	\$71.00
3/4	8	ETR286	71.00

**Type ETH Howler Signals**

Also for use as telephone call signal units.

**6 to 250-Volt A.C. Vibrator Type**  
Specify number of cycles desired.

Hub Size In.	Volume of Sound in Decibels at 6 Yards	No.	Each
3/4	92	ETH230	\$58.00

**6 to 250-Volt D.C. Vibrator Type**

Hub Size In.	Volume of Sound in Decibels at 6 Yards	No.	Each
3/4	92	ETH240	\$70.00

**6 to 250-Volt A.C. Vibrator Type**

Hub Size In.	Volume of Sound in Decibels at 6 Yards	No.	Each
3/4	104	ETH231	\$70.00

**6 to 250-Volt D.C. Vibrator Type**

Hub Size In.	Volume of Sound in Decibels at 6 Yards	No.	Each
3/4	102	ETH241	\$80.00

**Type ETH Siren Signals****Motor Operated  
\*6 to 250-Volt A.C. or D.C.  
For Plain Signals**

Hub Size In.	No.	Each
3/4	ETH260	\$175.00

**For Code Signals**

Hub Size In.	No.	Each
3/4	ETH280	\$225.00

\*Specify voltage desired.

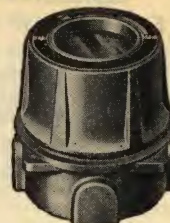
**Type ECT Transformer Condulets****Explosion-Proof and Dust-Tight****Class I, Group D, and Classes II and III**

Particularly adapted for use in connection with the EFS Series explosion-proof pilot light Condulets, when the supply current is 230, 460, or 575 volts, 50 to 133 cycles.

Outside dimensions, exclusive of hubs: length, 7 inches; width, 6 1/2 inches; depth, 5 1/2 inches; diameter of cover opening, 5 1/2 inches



Hub Size In.	Rating Watts	No.	Each
3/4	15	ECT211	\$14.80
3/4	50	ECT215	28.50

**Type EMH Instrument Condulets***Schedule CE***Explosion-Proof and Dust-Tight****Surface****Flush**

Furnished with mounting plate and supports for instruments. Four mounting lugs with fastening holes are provided at the back for surface mounting or at the front for flush mounting.

Bodies are equipped with mounting plates and posts to support the instruments near the cover window. This arrangement leaves ample space in back of the instruments for wires and connections. General Electric, Westinghouse, and Weston instruments can be mounted in Type EMH Condulets. Overall Dimensions: diameter of body, 5 3/4 inches; depth of body, 2 3/4 inches; height of cover, 3 inches.

Hub Size Inches	Conduit Openings	No.	Each
1/2	One in Side	EMH521-10000	\$17.00
1/2	One in Side	EMH521-20000	17.00
3/4	One in Back	EMH521-00001	17.00
1/2	One in Back	EMH521-00002	17.00
3/4	Two in Sides (Through Feed)	EMH521-10100	17.25
1/2	Two in Sides (Through Feed)	EMH521-20200	17.25
3/4	One in Side	EMH511-10000	18.00
1/2	One in Side	EMH511-20000	18.00
3/4	One in Back	EMH511-00001	18.00
1/2	One in Back	EMH511-00002	18.00
3/4	Two in Sides (Through Feed)	EMH511-10100	18.25
1/2	Two in Sides (Through Feed)	EMH511-20200	18.25

**Type EVH Explosion-Proof Hand Lamps***Schedule R  
Class I, Group D***Globe with Holder****Guard**

Furnished with lamp receptacle, globe, and guard. Designed to provide the utmost safety, durability, and ease of wiring.

Non-sparking metals are used. Laminated bakelite handle is firmly secured to the cast aluminum body, in which is mounted a keyless, composition lamp receptacle.

Cast aluminum globe holder; clear heat-resisting globe. Diameter of cord, .375 to .625 inch.

**40-Watt, Takes 25 or 40-Watt Lamps**

No.	Description	Each
*EVH40M3	EVH Hand Lamp.....	\$22.00
EVH5	†Clear Globe with Holder.....	8.30
.....	Credit for Holder.....	4.00
.....	†Difference.....	4.30
EVH084M3	Guard.....	2.75

**100-Watt, Takes 50, 60, 75 or 100-Watt Lamps**

No.	Description	Each
EVH100	EVH Hand Lamp.....	\$45.00
EVH10	†Clear Globe with Holder.....	12.00
.....	Credit for Holder.....	6.50
.....	†Difference.....	5.50
EVH087	Guard.....	3.50

\*Also dust-tight; Class II, Group G, and Class III.

†Globes must be assembled in threaded holder at factory.

Order "Globe with Holder" by number.

†Cost of globe replacement.



## Type EVS Explosion-Proof Portable Lamps

Schedule R

Class I, Group D

Furnished with lamp receptacle, globe, and guard. Same construction as the Type EVA fixtures, with a handle assembly added.

Handle assembly includes a hook and cable clamp. A third terminal is provided in Type EVS for connection to a third wire in the portable cord for grounding the non-current-carrying metal parts of the unit.

Diameter of cable, .250 to .625 inch.



Globe with Holder

No. of Watts	Portable Lamps		*Globes and Holders		Replacement	
	No.	Each	No.	Each	Cr. for Holder	†Difference
100	EVS80	\$23.00	EV710	\$12.00	\$6.50	\$5.50
150	EVS81	23.00	EV715	12.00	6.50	5.50
200	EVS82	32.00	EV720	20.00	10.00	10.00

\*Globes must be assembled in threaded holder at factory. Order "Globe with Holder" by number.

†Cost of globe replacement.

## DL Series Dust-Tight Lighting Fixture Condulets

Schedule R

For Class II, Group G Hazardous Locations when Mounted Vertically

For Classes III and IV Hazardous Locations when Mounted in Any Position

Bodies and hoods are of cast aluminum.

Type DLA pendent type fixtures may be suspended from CPS series Condulets with hub covers.

Type DLC ceiling type is made to mount directly on CPS series Condulets.

## With Shock-Absorbing Lamp Receptacle DL66 and Globe

100-Watt Lamps

Hub Size In.	Type DLA		Type DLC	
	No.	Each	No.	Each
1/2	DLA101	\$9.70	DLC50F	\$9.70
3/4	DLA201	9.70		

150 and 200-Watt Lamps

Hub Size In.	Type DLA		Type DLC	
	No.	Each	No.	Each
1/2	DLA121	\$11.35	DLC20F	\$11.35
3/4	DLA221	11.35		

Type DLA Pendent Type

Type DLC Ceiling Type

## With Porcelain Enameled Steel Reflector

Type DLA

Dome-Pendent Type

Type DLC

Dome-Ceiling Type



Reflector is green porcelain enamel outside; and white porcelain enamel inside.

100-Watt Lamps

Hub Size In.	Type DLA		Type DLC		Reflector Diam., In.	
	No.	Each	No.	Each	No.	In.
1/2	DLA1020	\$11.50	DLC720F	\$11.50	DL23	12
3/4	DLA2020	11.50			DL23	12

150 or 200-Watt Lamps

Hub Size In.	Type DLA		Type DLC		Reflector Diam., In.	
	No.	Each	No.	Each	No.	In.
1/2	DLA1022	\$16.50	DLC722F	\$16.50	DL24	18
3/4	DLA2022	16.50			DL24	18

## EV Series Lighting Fixture Condulets

Schedule R

Explosion-Proof

Class I, Groups C and D

Hoods are cast aluminum with etched alzak aluminum inner reflectors. Globe holder assembly consists of clear, heat-resisting, impact-resisting, glass globe, equipped with sheet aluminum gasket and cast aluminum mounting and retaining rings. Cast aluminum guards are held to globe mounting rings by machine screws. Furnished without reflectors.

Available in polished aluminum finish for hospital use. For the A-21 standard lamp. Cannot be used with 100-watt A-23 lamp. Should there be a requirement for A-23, 100-watt lamp, use suffix S261 on number. No extra charge for lighting fixture so arranged.

## Type EVA—Pendent Type

Complete with a Condulet body for pendent mounting on a conduit stem. A set screw in hub may be tightened against unthreaded part of conduit to prevent unscrewing from conduit when relamping. May be suspended by a conduit stem from GUA or GUF series Condulets with three-inch cover opening and GUA fixture covers or canopies.



Watts	OVERALL DIMEN., In.			With Guard		Without Guard	
	Hub	Lgth.	Width	No.	Each	No.	Each
60	1/2	....	....	EVA140	\$13.00	EVA104	\$12.25
	3/4	10 3/8	5 3/4	EVA240	13.10	EVA204	12.35
	1	....	....	EVA110	19.40	EVA101	18.40
100	1/2	....	....	EVA210	19.50	EVA201	18.50
	3/4	12 1/8	6 7/8	EVA115	19.40	EVA105	18.40
	1	....	....	EVA215	19.50	EVA205	18.50
150	1/2	....	....	EVA120	27.90	EVA102	26.40
	3/4	12 1/2	7 1/8	EVA220	28.00	EVA202	26.50
	1	....	....	EVA230	62.50	EVA203	56.75
200	1/2	....	....	EVA450	73.50	EVA406	69.20
	3/4	14 1/8	8 1/2				
300	1/2	....	....				
	3/4	17 1/8	10				
500	1/2	....	....				
	3/4	17 3/4	14				



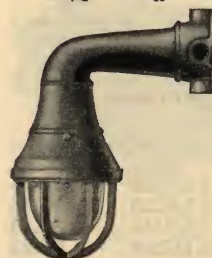
## Type EVCX—Ceiling Type

For use where it is necessary to mount the fixture close to the ceiling.

Has exposed or concealed conduit.

Has four threaded hubs, three of which are furnished with pipe plugs.

Watts	OVERALL DIMEN., In.			With Guard		Without Guard	
	Hub	Lgth.	Width	No.	Each	No.	Each
60	1/2	....	....	EVCX140	\$17.20	EVCX104	\$16.45
	3/4	10 9/16	5 3/4	EVCX240	17.50	EVCX204	16.75
	1	....	....	EVCX110	23.70	EVCX101	22.70
100	1/2	....	....	EVCX210	24.00	EVCX201	23.00
	3/4	12 1/8	6 7/8	EVCX115	23.70	EVCX105	22.70
	1	....	....	EVCX215	24.00	EVCX205	23.00
150	1/2	....	....	EVCX120	32.20	EVCX102	30.70
	3/4	13	7 1/8	EVCX220	32.50	EVCX202	31.00
	1	....	....	EVCX130	67.00	EVCX103	61.25
200	1/2	....	....	EVCX230	67.10	EVCX203	61.35
	3/4	14 1/2	8 1/2	EVCX150	78.00	EVCX106	73.70
	1	....	....	EVCX250	78.10	EVCX206	73.80
300	1/2	....	....				
	3/4	16 1/4	10				
	1	....	....				
500	1/2	....	....				
	3/4	17 1/8	14				



## Type EVBX—Bracket Type

For side wall mounting. Four hubs tapped for rigid conduit are provided, three of which are equipped with threaded pipe plugs. This arrangement permits the Condulet to be used as a dead end, through feed, L, T, or X.

\*Take deep bowl and 30 degree angle reflectors only.

Watts	OVERALL DIMEN., In.			With Guard		Without Guard	
	Hub	Lgth.	Width	No.	Each	No.	Each
60	1/2	....	....	EVBX140	\$19.20	EVBX104	\$18.45
	3/4	13	11 5/8	EVBX240	19.50	EVBX204	18.75
	1	....	....	EVBX110	25.70	EVBX101	24.70
100	1/2	....	....	EVBX210	26.00	EVBX201	25.00
	3/4	15	12 1/4	EVBX115	25.70	EVBX105	24.70
	1	....	....	EVBX215	26.00	EVBX205	25.00
150	1/2	....	....	EVBX120	34.20	EVBX102	32.70
	3/4	15 5/8	12 3/8	EVBX220	34.50	EVBX202	33.00
	1	....	....				
*200	1/2	....	....				
	3/4	17 1/8	13				



## Reflectors for EV Series Lighting Fixture Condulets

Schedule R



Reflectors are porcelain enameled steel, green outside and white inside.

Available in all white enamel for hospital use.

Fixture Watts	Style	Diam. In.	No.	Each
60	Dome	10 $\frac{1}{4}$	EV481	\$2.50
	Deep	8 $\frac{3}{4}$	EV483	2.75
	Shallow	10 $\frac{1}{4}$	EV485	2.25
	30° Angle	8 $\frac{3}{4}$	EV487	2.75
100	Dome	12 $\frac{1}{8}$	EV181	2.75
	Deep	9 $\frac{1}{4}$	EV183	3.00
	Shallow	12 $\frac{1}{8}$	EV185	2.50
	30° Angle	10 $\frac{1}{4}$	EV187	3.00
150	Dome	13 $\frac{3}{4}$	EV581	3.25
	Deep	10 $\frac{1}{4}$	EV583	3.50
	Shallow	13 $\frac{3}{4}$	EV585	3.00
	30° Angle	12 $\frac{1}{8}$	EV587	3.50
200	Dome	16 $\frac{1}{16}$	EV281	3.75
	Deep	12 $\frac{1}{8}$	EV283	4.00
	Shallow	16 $\frac{1}{16}$	EV285	3.50
	30° Angle	13 $\frac{3}{4}$	EV287	4.50
300	Dome	20 $\frac{1}{16}$	EV381	6.50
	30° Angle	16 $\frac{1}{16}$	EV387	4.50
500	Dome	20 $\frac{1}{2}$	EV681	6.50

## Type ELG Gauge Lighting Fixture Condulets

Schedule CE

Explosion-Proof

For Medium Screw Base, Lumiline, and Fluorescent Lamps  
Class I, Group D



Style 1  
One-Light  
Less Hood



Style 1  
One-Light  
With Hood



Style 2 and 3  
Less Hood



Style 1  
Two-Light  
With Hood



Style 2 and 3  
With Hood

Style 1

For Medium Screw Base Incandescent Lamps  
25-Watt, T10 Bulb

Hub Size In.	No. of Lamps	Less Hood		With Hood	
		No.	Each	No.	Each
1/2	1	ELG1250	\$16.75	ELG125	\$17.75
3/4	1	ELG2250	16.85	ELG225	17.85
1/2	2	ELG1500	27.75	ELG150	29.75
3/4	2	ELG2500	27.85	ELG250	29.85

Style 2

For 18-Inch Incandescent Lumiline Lamp  
60-Watt, T8 Bulb

60-watt, 18 Bulb					
1/2	1	ELG1060	\$36.75	ELG106	\$39.50
3/4	1	ELG2060	36.85	ELG206	39.60

Style 3

For 18-Inch Fluorescent Lamp  
With Ballast and Starter  
15-Watt, T8 Bulb

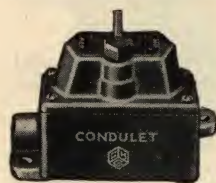
15-watt, 18 Bulb					
1/2	1	ELG1150	\$43.25	ELG115	\$46.00
3/4	1	ELG2150	43.35	ELG215	46.10

## EFS Series Tumbler Switch Condulets

Schedule CE

Explosion-Proof and Dust-Tight

For the control of lighting, appliance, and small motor circuits, or for push button remote control of magnetically operated motor controllers.



Meets requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations. Furnished with tumbler switches.

Type EFS

Outside dimensions, exclusive of hubs: Length, 5 $\frac{1}{8}$  inches; width, 3 $\frac{1}{2}$  inches; depth, 4 $\frac{1}{16}$  inches.

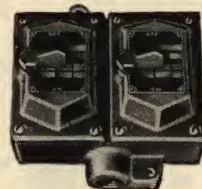
Style	AMPERES 125-V. 250-V.		Hp.	Hub Size In.	No.	Each	†Form
1-Pole	20	10	.....	1/2	EFS1129	\$5.45	29
2-Pole	20	20	2	1/2	EFS118	5.55	8
3-Way	15	10	.....	1/2	EFS1130	5.85	30
1-Pole	20	10	.....	3/4	EFS2129	5.50	29
2-Pole	20	20	2	3/4	EFS218	5.60	8
3-Pole	10	10	1/4 A.C.	3/4	EFS2123	8.60	23
3-Way	15	10	.....	3/4	EFS2130	5.90	30



Type EFSC

Outside dimensions, exclusive of hubs: Length, 5 $\frac{1}{8}$  inches; width, 3 $\frac{1}{2}$  inches; depth, 4 $\frac{1}{16}$  inches.

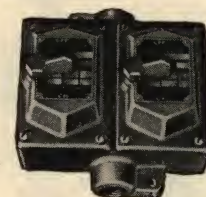
1-Pole	20	10	.....	1/2	EFSC1129	\$5.55	29
2-Pole	20	20	2	1/2	EFSC118	5.65	8
3-Pole	10	10	1/4 A.C.	1/2	EFSC1123	8.65	23
3-Way	15	10	.....	1/2	EFSC1130	5.95	30
1-Pole	20	10	.....	3/4	EFSC2129	5.65	29
2-Pole	20	20	2	3/4	EFSC218	5.75	8
3-Pole	10	10	1/4 A.C.	3/4	EFSC2123	8.75	23
3-Way	15	10	.....	3/4	EFSC2130	6.05	30



\*†Type EFS 2-Gang

Outside dimensions, exclusive of hubs: Length, 5 $\frac{1}{8}$  inches; width, 7 $\frac{1}{4}$  inches; depth, 4 $\frac{1}{16}$  inches.

1-Pole	20	10	.....	1/2	EFS1229	\$10.90	29
1-Pole	20	10	.....	3/4	EFS2229	11.00	29
2-Pole	20	20	2	3/4	EFS228	11.20	8
3-Way	15	10	.....	3/4	EFS2230	11.80	30
3-Pole	10	10	1/4 A.C.	1	EFS3223	17.30	23



\*†Type EFSC 2-Gang

Outside dimensions, exclusive of hubs: Length, 5 $\frac{1}{8}$  inches; width, 7 $\frac{1}{4}$  inches; depth, 4 $\frac{1}{16}$  inches.

1-Pole	20	10	.....	1/2	EFSC1229	\$11.10	29
2-Pole	20	20	2	1/2	EFSC128	11.30	8
3-Way	15	10	.....	1/2	EFSC1230	11.90	30
1-Pole	20	10	.....	3/4	EFSC2229	11.30	29
2-Pole	20	20	2	3/4	EFSC228	11.50	8
3-Pole	10	10	1/4 A.C.	3/4	EFSC2223	17.50	23
3-Way	15	10	.....	3/4	EFSC2230	12.10	30

\*Combinations can be furnished, if specified.

†May be obtained in one-inch conduit size. Change first figure of number to 3. Add 10 cents per hub to list price of Type EFS 2-gang and 20 cents per hub to list price of Type EFSC 2-gang.

†Order by catalog number. Use type and form number (rather than catalog number) for identification of Condulets for hazardous locations, when consulting Underwriters' Laboratories' list of inspected electrical appliances.



**EFS Series Tumbler Switch Condulets**

Schedule CE

**Explosion-Proof and Dust-Tight**

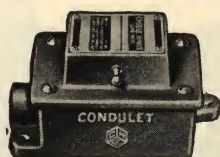
For flush or surface mounting.

Meets requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations.

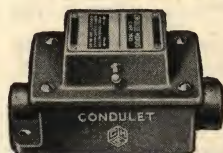
Provides controls for 1 or 2 circuits in a single-gang EFS Series Condulet.

Furnished with tumbler switches.

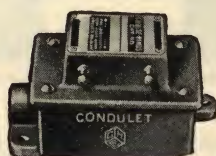
Outside dimensions, exclusive of hubs: Length, 5½ inches; width, 4 inches; depth, 3¼ inches.

**Type EFS Single**

Style	AMPERES		Hub Size In.	Cast Feraloy Cover		Cast Brass Cover, Chromium-Plated		Form
	125-V.	250-V.		No.	Each	No.	Each	
1-Pole	10	5	1½	EFS1101	\$5.45	EFS1121	\$9.70	31
1-Pole	10	10	1½	EFS1100	5.55	EFS1120	9.80	32
1-Way	10	5	1½	EFS1107	5.85	EFS1119	10.10	33
1-Pole	10	5	¾	EFS2101	5.50	EFS2121	9.75	31
1-Pole	10	10	¾	EFS2100	5.60	EFS2120	9.85	32
1-Way	10	5	¾	EFS2107	5.90	EFS2119	10.15	33
1-Way	5	2	¾	EFS2108	8.80	EFS2124	13.05	34

**\*Type EFSC Single**

1-Pole	10	5	1½	EFSC1101	\$5.55	EFSC1121	\$9.80	31
1-Pole	10	10	1½	EFSC1100	5.65	EFSC1120	9.90	32
1-Way	10	5	1½	EFSC1107	5.95	EFSC1119	10.20	33
1-Pole	10	5	¾	EFSC2101	5.65	EFSC2121	9.90	31
1-Pole	10	10	¾	EFSC2100	5.75	EFSC2120	10.00	32
1-Way	10	5	¾	EFSC2107	6.05	EFSC2119	10.30	33

**\*Type EFS Duplex**

For 2 like switches, but on special order any combination of 2 switches can be furnished.

1-Pole	10	5	1½	EFS1109	\$6.95	EFS1125	\$11.20	31
1-Pole	10	5	¾	EFS2109	7.00	EFS2125	11.25	31
1-Pole	10	10	¾	EFS2110	7.80	EFS2126	12.05	32
1-Way	10	5	¾	EFS2113	7.90	EFS2127	12.15	33

**\*Type EFSC Duplex**

1-Pole	10	5	1½	EFSC1109	\$7.05	EFSC1125	\$11.30	31
1-Pole	10	10	1½	EFSC1110	7.85	EFSC1126	12.10	32
1-Way	10	5	1½	EFSC1113	7.95	EFSC1127	12.20	33
1-Pole	10	5	¾	EFSC2109	7.15	EFSC2125	11.40	31
1-Pole	10	10	¾	EFSC2110	7.95	EFSC2126	12.20	32
1-Way	10	5	¾	EFSC2113	8.05	EFSC2127	12.30	33

\*Combinations can be furnished, if specified.

†May be obtained in one-inch conduit size. Change first figure of number to 3 and add 20 cents to list price.

**EFS Series Push Button Switch Condulets**

Schedule CE

**With Rocker Type Operating Handle****Explosion-Proof and Dust-Tight**

Meets requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations.

Furnished with double push button switches.

Can be furnished with attachment for rod operation at no extra charge. Add suffix S33 to number.

**Type EFS**

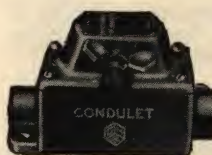
Outside dimensions, exclusive of hubs: Length, 5½ inches; width, 3½ inches; depth, 4 inches.



Style	AMPERES		Hp.	Hub Size In.	No.	Each	Form
	125-V.	250-V.					
1-Pole	20	10	..	1½	EFS1138	\$5.45	38
2-Pole	20	20	2	1½	EFS114	5.55	4
3-Way	15	10	..	1½	EFS1139	5.85	39
1-Pole	20	10	..	¾	EFS2138	5.50	38
2-Pole	20	20	2	¾	EFS214	5.60	4
3-Way	15	10	..	¾	EFS2139	5.90	39

**Type EFSC**

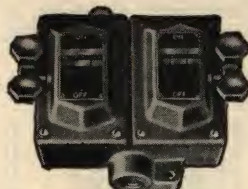
Outside dimensions, exclusive of hubs: Length, 5½ inches; width, 3½ inches; depth, 4 inches.



1-Pole	20	10	..	1½	EFSC1138	\$5.55	38
2-Pole	20	20	2	1½	EFSC114	5.65	4
3-Way	15	10	..	1½	EFSC1139	5.95	39
1-Pole	20	10	..	¾	EFSC2138	5.65	38
2-Pole	20	20	2	¾	EFSC214	5.75	4
3-Way	15	10	..	¾	EFSC2139	6.05	39

**\*†Type EFS 2-Gang**

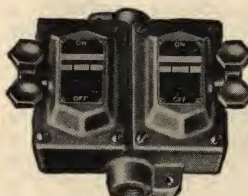
Outside dimensions, exclusive of hubs: Length, 5½ inches; width, 7¼ inches; depth, 4 inches.



1-Pole	20	10	..	1½	EFS1238	\$10.90	38
1-Pole	20	10	..	¾	EFS2238	11.00	38
2-Pole	20	20	2	¾	EFS2204	11.20	4
3-Way	15	10	..	¾	EFS2239	11.80	39

**\*†Type EFSC 2-Gang**

Outside dimensions, exclusive of hubs: Length, 5½ inches; width, 7¼ inches; depth, 4 inches.



1-Pole	20	10	..	1½	EFSC1238	\$11.10	38
2-Pole	20	20	2	1½	EFSC1204	11.30	4
3-Way	15	10	..	1½	EFSC1239	11.90	39
1-Pole	20	10	..	¾	EFSC2238	11.30	38
2-Pole	20	20	2	¾	EFSC2204	11.50	4
3-Way	15	10	..	¾	EFSC2239	12.10	39

\*Combinations can be furnished, if specified.

†May be obtained in one-inch conduit size. Change first figure of number to 3. Add 10 cents per hub to list price of Type EFS 2-gang and 20 cents per hub to list price of Type EFSC 2-gang.



## EFS Series Push Button Switch Condulets

Schedule CE

## Explosion-Proof and Dust-Tight

Meets more exacting requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations.

Furnished with front operated double push button switches.



Type EFS

Outside dimensions, exclusive of hubs: Length,  $5\frac{1}{8}$  inches; width,  $3\frac{1}{2}$  inches; depth,  $4\frac{1}{4}$  inches.

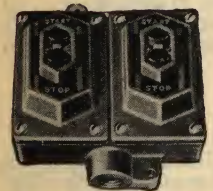
Style	AMPERES		Hp.	Hub Size In.	No.	Each	Form
	125-V.	250-V.					
1-Pole	20	10	..	$\frac{1}{2}$	EFS1141	\$5.45	41
2-Pole	20	20	2	$\frac{1}{2}$	EFS1142	5.55	42
3-Way	15	10	..	$\frac{1}{2}$	EFS1143	5.85	43
1-Pole	20	10	..	$\frac{3}{4}$	EFS2141	5.50	41
2-Pole	20	20	2	$\frac{3}{4}$	EFS2142	5.60	42
3-Way	15	10	..	$\frac{3}{4}$	EFS2143	5.90	43



Type EFSC

Outside dimensions, exclusive of hubs: Length,  $5\frac{1}{8}$  inches; width,  $3\frac{1}{2}$  inches; depth,  $4\frac{1}{4}$  inches.

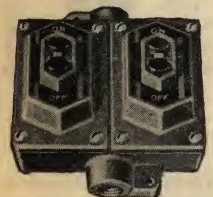
1-Pole	20	10	..	$\frac{1}{2}$	EFSC1141	\$5.55	41
2-Pole	20	20	2	$\frac{1}{2}$	EFSC1142	5.65	42
3-Way	15	10	..	$\frac{1}{2}$	EFSC1143	5.95	43
1-Pole	20	10	..	$\frac{3}{4}$	EFSC2141	5.65	41
2-Pole	20	20	2	$\frac{3}{4}$	EFSC2142	5.75	42
3-Way	15	10	..	$\frac{3}{4}$	EFSC2143	6.05	43



\*†Type EFS 2-Gang

Outside dimensions, exclusive of hubs: Length,  $5\frac{1}{8}$  inches; width,  $7\frac{1}{4}$  inches; depth,  $4\frac{1}{4}$  inches.

1-Pole	20	10	..	$\frac{1}{2}$	EFS1241	\$10.90	41
1-Pole	20	10	..	$\frac{3}{4}$	EFS2241	11.00	41
2-Pole	20	20	2	$\frac{3}{4}$	EFS2242	11.20	42
3-Way	15	10	..	$\frac{3}{4}$	EFS2243	11.80	43



\*†Type EFSC 2-Gang

Outside dimensions, exclusive of hubs: Length,  $5\frac{1}{8}$  inches; width,  $7\frac{1}{4}$  inches; depth,  $4\frac{1}{4}$  inches.

1-Pole	20	10	..	$\frac{1}{2}$	EFSC1241	\$11.10	41
2-Pole	20	20	2	$\frac{1}{2}$	EFSC1242	11.30	42
3-Way	15	10	..	$\frac{1}{2}$	EFSC1243	11.90	43
1-Pole	20	10	..	$\frac{3}{4}$	EFSC2241	11.30	41
2-Pole	20	20	2	$\frac{3}{4}$	EFSC2242	11.50	42
3-Way	15	10	..	$\frac{3}{4}$	EFSC2243	12.10	43

\*Combinations can be furnished, if specified.

†May be obtained in one-inch conduit size. Change first figure of number to 3. Add 10 cents per hub to list price of Type EFS 2-gang and 20 cents per hub to list price of Type EFSC 2-gang.

‡Order by catalog number. Use type and form number (rather than catalog number) for identification of Condulets for hazardous locations, when consulting Underwriters Laboratories' list of inspected electrical appliances.

## EFS Series Push Button Station Condulets

Schedule CE

## Explosion-Proof and Dust-Tight

15 Amperes, 230 Volts A.C.; 10 Amperes, 460 Volts A.C.; and 5 Amperes, 600 Volts A.C.

Meets more exacting requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations.

Furnished with motor control push button switches, front operated, with start and stop push buttons.

All two-button push button switches are furnished with a removable line connection jumper.

Types EFS and EFSC



Type EFS

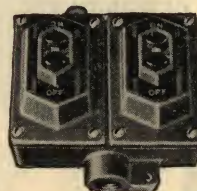


Type EFSC

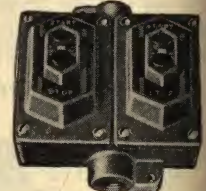
Outside dimensions, exclusive of hubs: Length,  $5\frac{1}{8}$  inches; width,  $3\frac{1}{2}$  inches; depth,  $4\frac{1}{4}$  inches.

Style	Plate Mark-ing	Hub Size In.	Type EFS		Type EFSC		Form
			No.	Each	No.	Each	
1 Button (Normally Open).....	Start	$\frac{1}{2}$	EFS111	\$7.15	EFSC111	\$7.25	1
1 Button (Normally Closed).....	Stop	$\frac{1}{2}$	EFS211	7.20	EFSC211	7.35	1
1 Button (Normally Closed).....	Stop	$\frac{3}{4}$	EFS1102	7.15	EFSC1102	7.25	2
1 Button (Normally Closed).....	Stop	$\frac{3}{4}$	EFS212	7.20	EFSC212	7.35	2
2 Buttons (1 Normally Open, 1 Normally Closed).....	Start	$\frac{1}{2}$	EFS115	8.40	EFSC115	8.50	5
2 Buttons (1 Normally Open, 1 Normally Closed).....	Stop	$\frac{3}{4}$	EFS215	8.45	EFSC215	8.60	5
2 Buttons (Both Normally Open).....	Start	$\frac{1}{2}$	EFS1103	8.40	EFSC1103	8.50	3
2 Buttons (Both Normally Open).....	Stop	$\frac{3}{4}$	EFS213	8.45	EFSC213	8.60	3
2 Buttons (Both Normally Open).....	Start	$\frac{1}{2}$	EFS1105	8.40	EFSC1105	8.50	05
2 Buttons (Both Normally Open).....	Stop	$\frac{3}{4}$	EFS2105	8.45	EFSC2105	8.60	05

\*†Types EFS 2-Gang and EFSC 2-Gang



Type EFS



Type EFSC

Outside dimensions, exclusive of hubs: Length,  $5\frac{1}{8}$  inches; width,  $7\frac{1}{4}$  inches; depth,  $4\frac{1}{4}$  inches.

Style	Plate Mark-ing	Hub Size In.	Type EFS		Type EFSC		Form
			No.	Each	No.	Each	
1 Button (Normally Open).....	Start	$\frac{1}{2}$	EFS121	\$14.30	EFSC121	\$14.50	1
1 Button (Normally Open).....	Start	$\frac{3}{4}$	EFS221	14.40	EFSC221	14.70	1
1 Button (Normally Closed).....	Stop	$\frac{1}{2}$	EFS122	14.30	EFSC122	14.50	2
1 Button (Normally Closed).....	Stop	$\frac{3}{4}$	EFS222	14.40	EFSC222	14.70	2
2 Buttons (1 Normally Open, 1 Normally Closed).....	Start	$\frac{1}{2}$	EFS225	16.80	EFSC225	17.00	5
2 Buttons (1 Normally Open, 1 Normally Closed).....	Stop	$\frac{3}{4}$	EFS325	16.90	EFSC325	17.20	5
2 Buttons (Both Normally Open).....	Start	$\frac{1}{2}$	EFS2203	16.80	EFSC2203	17.00	3
2 Buttons (Both Normally Open).....	Stop	$\frac{3}{4}$	EFS323	16.90	EFSC323	17.20	3
2 Buttons (Both Normally Open).....	Start	$\frac{1}{2}$	EFS2205	16.80	EFSC2205	17.00	05
2 Buttons (Both Normally Open).....	Stop	$\frac{3}{4}$	EFS3205	16.90	EFSC3205	17.20	05

\*Combinations can be furnished, if specified.

†May be obtained in one-inch conduit size. Change first figure of number 2 to 3. Add 10 cents per hub to list price of Type EFS 2-gang and 20 cents per hub to list price of Type EFSC 2-gang.

‡Order by catalog number. Use type and form number (rather than catalog number) for identification of Condulets for hazardous locations, when consulting Underwriters Laboratories' list of inspected electrical appliances.



## EFS Series Control Station Condulets

Schedule CE

## Explosion-Proof—Dust-Tight

Standard Duty: 600 Volts A.C.—Heavy Duty: 600 Volts A.C.

Center position marked OFF. Specify other position markings such as AUTOMATIC—OFF—HAND; HOIST—OFF—LOWER; or REVERSE—OFF—FORWARD.



## Type EFS

Style	Hub Size In.	Standard Duty			Heavy Duty		
		No.	Each	Form	No.	Each	Form
1 Circuit (Open)	1 1/2	EFS1554	\$7.15	554	EFS1556	\$9.90	556
1 Circuit (Open)	3/4	EFS2554	7.20	554	EFS2556	9.95	556
1 Circuit (Closed)	1 1/2	EFS1557	7.15	557	EFS1559	9.90	559
1 Circuit (Closed)	3/4	EFS2557	7.20	557	EFS2559	9.95	559
2 Circuits (Both Open)	1 1/2	EFS1551	8.40	551	EFS1553	11.15	553
2 Circuits (Both Open)	3/4	EFS2551	8.45	551	EFS2553	11.20	553
2 Circuits (Both Closed)	1 1/2	EFS1573	8.40	573	EFS1575	11.15	575
2 Circuits (Both Closed)	3/4	EFS2573	8.45	573	EFS2575	11.20	575
4 Circuits (Universal)	1 1/2	EFS1576	9.15	576	EFS1578	11.90	578
4 Circuits (Universal)	3/4	EFS2576	9.20	576	EFS2578	11.95	578

## Type EFSC

Style	Hub Size In.	Standard Duty			Heavy Duty		
		No.	Each	Form	No.	Each	Form
1 Circuit (Open)	1 1/2	EFSC1554	\$7.25	554	EFSC1556	\$10.00	556
1 Circuit (Open)	3/4	EFSC2554	7.35	554	EFSC2556	10.10	556
1 Circuit (Closed)	1 1/2	EFSC1557	7.25	557	EFSC1559	10.00	559
1 Circuit (Closed)	3/4	EFSC2557	7.35	557	EFSC2559	10.10	559
2 Circuits (Both Open)	1 1/2	EFSC1551	8.50	551	EFSC1553	11.25	553
2 Circuits (Both Open)	3/4	EFSC2551	8.60	551	EFSC2553	11.35	553
2 Circuits (Both Closed)	1 1/2	EFSC1573	8.50	573	EFSC1575	11.25	575
2 Circuits (Both Closed)	3/4	EFSC2573	8.60	573	EFSC2575	11.35	575
4 Circuits (Universal)	1 1/2	EFSC1576	9.25	576	EFSC1578	12.00	578
4 Circuits (Universal)	3/4	EFSC2576	9.35	576	EFSC2578	12.10	578

## EFS Series Push Button Station Condulets

## Explosion-Proof and Dust-Tight



## Type EFS

Normal Positions	Plate Mark-ings	Hub Size In.	Standard Duty			Heavy Duty		
			No.	Each	Form	No.	Each	Form
2 Buttons (1 Open 1 Closed).....	(Start)	1 1/2	EFS1155	\$8.40	55	EFS1155F	\$11.15	55F
2 Buttons (1 Open 1 Closed).....	(Stop)	3/4	EFS2155	8.45	55	EFS2155F	11.20	55F
2 Buttons (Both Open)...	(Start)	1 1/2	EFS1155B	8.40	55B	EFS1155G	11.15	55G
2 Buttons (Both Open)...	(Stop)	3/4	EFS2155B	8.45	55B	EFS2155G	11.20	55G
2 Buttons (Both Closed).	(Start)	1 1/2	EFS1155D	8.40	55D	EFS1155H	11.15	55H
2 Buttons (Both Closed).	(Stop)	3/4	EFS2155D	8.45	55D	EFS2155H	11.20	55H

## Type EFSC

Normal Positions	Plate Mark-ings	Hub Size In.	Standard Duty			Heavy Duty		
			No.	Each	Form	No.	Each	Form
2 Buttons (1 Open 1 Closed).....	(Start)	1 1/2	EFSC1155	\$8.50	55	EFSC1155F	\$11.25	55F
2 Buttons (1 Open 1 Closed).....	(Stop)	3/4	EFSC2155	8.60	55	EFSC2155F	11.35	55F
2 Buttons (Both Open)...	(Start)	1 1/2	EFSC1155B	8.50	55B	EFSC1155G	11.25	55G
2 Buttons (Both Open)...	(Stop)	3/4	EFSC2155B	8.60	55B	EFSC2155G	11.35	55G
2 Buttons (Both Closed).	(Start)	1 1/2	EFSC1155D	8.50	55D	EFSC1155H	11.25	55H
2 Buttons (Both Closed).	(Stop)	3/4	EFSC2155D	8.60	55D	EFSC2155H	11.35	55H

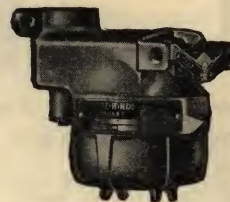
## Type OFC Push Button Station Condulets

Schedule CE

## With Motor Control Push Button Switches and Rocker Type Operating Handles

## Explosion-Proof—Dust-Tight

For Oil Immersed or Air Break Switches Class I, Group D; and Classes II and III 600 Volts A.C.



Normal Positions	Operating Handles	Handle Marking	Condulet		Hub Size In.	Condulet With Switch	
			No.	Each		No.	Each
1 Button (Open-A)	Single	Start	D125F	\$3.25	3/4	OFC2101	\$13.50
1 Button (Open-A)	Single	Stop	D125G	3.25	1	OFC3101	13.70
1 Button (Closed-A)	Single	Stop	D125G	3.25	3/4	OFC2102	13.50
1 Button (Closed-A)	Single	Stop	D125G	3.25	1	OFC3102	13.70
2 Buttons (1 Open-A 1 Closed-B).....	Double	Start	D125	4.25	3/4	OFC2103	14.50
2 Buttons (1 Open-A 1 Closed-B).....	Double	Stop	D125	4.25	1	OFC3103	14.70
2 Buttons (Open-A-B).....	Double	Start	D125B	4.25	3/4	OFC2104	14.50
2 Buttons (Open-A-B).....	Double	Stop	D125B	4.25	1	OFC3104	14.70
2 Buttons (Closed-A-B).....	Double	Start	D125D	4.25	3/4	OFC2105	14.50
2 Buttons (Closed-A-B).....	Double	Stop	D125D	4.25	1	OFC3105	14.70
2 Buttons (Universal).....	Double	Must be Specified	D125U	5.00	3/4	OFC2133	15.25
2 Buttons (Universal).....	Double	Must be Specified	D125U	5.00	1	OFC3133	15.45
2 Buttons (Open).....	Single	Start	D125B	4.25	3/4	OFC2131	14.50
2 Buttons (Open).....	Single	Start	D125B	4.25	1	OFC3131	14.70
2 Buttons (Closed).....	Both	Stop	D125D	4.25	3/4	OFC2132	14.50
2 Buttons (Closed).....	Both	Stop	D125D	4.25	1	OFC3132	14.70
2 Buttons (Universal).....	Buttons Together	Must be Specified	D125U	5.00	3/4	OFC2139	15.25
2 Buttons (Universal).....	Buttons Together	Must be Specified	D125U	5.00	1	OFC3139	15.45

## EFS Series Manual Motor Starting Switch Condulets

Schedule CE

## Explosion-Proof and Dust-Tight

Class I, Groups C and D; and Classes II, III and IV



Furnished with G-E CR1061 motor starting switches (tumbler type) single phase motors, and take interchangeable heater units.

Outside dimensions, exclusive of hubs: length, 5 1/8 inches; width, 3 1/2 inches; depth, 4 3/16 inches.

Poles Hp.	Switch Volts	Hub Size In.	Type EFS		Type EFSC	
			No.	*Each	No.	*Each
1 3/4	115-220 A.C.	1 1/2	EFS1185	\$9.85	EFSC1185	\$9.95
1 3/4	115-220 A.C.	3/4	EFS2185	9.90	EFSC2185	10.05
1 3/4	115-220 A.C.	1	EFS3185	10.00	EFSC3185	10.20
1 1/2	115-230 D.C.	1 1/2	EFS1187	9.85	EFSC1187	9.95
1 1/2	115-230 D.C.	3/4	EFS2187	9.90	EFSC2187	10.05
1 1/2	115-230 D.C.	1	EFS3187	10.00	EFSC3187	10.20
2 3/4	110-220 A.C.	1 1/2	EFS1186	10.35	EFSC1186	10.45
2 3/4	110-220 A.C.	3/4	EFS2186	10.40	EFSC2186	10.55
2 3/4	110-220 A.C.	1	EFS3186	10.50	EFSC3186	10.70
2 3/4	115-230 D.C.	1 1/2	EFS1188	10.35	EFSC1188	10.45
2 3/4	115-230 D.C.	3/4	EFS2188	10.40	EFSC2188	10.55
2 3/4	115-230 D.C.	1	EFS3188	10.50	EFSC3188	10.70

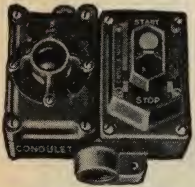
\*Price includes switch with one interchangeable heater.



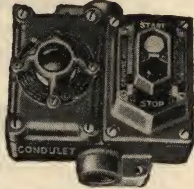
**EFS Series Condulets**

Schedule CE

With Covers for Push Button Station and Pilot Light  
Explosion-Proof and Dust-Tight  
Standard Duty: 230, 460, and 600 Volts A. C.  
Heavy Duty: 600 Volts A.C.



Type EFS, Two-Gang



Type EFSC, Two-Gang

**Type EFS, Dead End**

Normal Positions	Plate Markings	Hub Size In.	Standard Duty			Heavy Duty		
			No.	Each	Form	No.	Each	Form
1 Button (Open)	Start	1/2	EFS121	\$15.50	1J	EFS1606	\$18.25	506J
	Start	3/4	EFS221	15.55	1J	EFS2606	18.30	506J
1 Button (Closed)	Start	1	EFS321	15.65	1J	EFS3606	18.40	506J
	Stop	1/2	EFS122	15.50	2J	EFS1607	18.25	507J
2 Buttons (1 Open 1 Closed)	Stop	3/4	EFS2202	15.55	2J	EFS2607	18.30	507J
	Stop	1	EFS322	15.65	2J	EFS3607	18.40	507J
2 Buttons (Both Open)	Start	1/2	EFS125	16.55	5J	EFS1600	19.30	500J
	Stop	3/4	EFS225	16.60	5J	EFS2600	19.35	500J
2 Buttons (Both Closed)	Start	1	EFS325	16.70	5J	EFS3600	19.40	500J
	Stop	1/2	EFS123	16.55	3J	EFS1602	19.30	502J
	Stop	3/4	EFS2203	16.60	3J	EFS2602	19.35	502J
	Stop	1	EFS323	16.70	3J	EFS3602	19.45	502J
	Stop	1/2	EFS1205	16.55	05J	EFS1604	19.30	504J
	Stop	3/4	EFS2205	16.60	05J	EFS2604	19.35	504J
	Stop	1	EFS3205	16.70	05J	EFS3604	19.45	504J

**Type EFSC, Through Feed**

Normal Positions	Plate Markings	Hub Size In.	Standard Duty			Heavy Duty		
			No.	Each	Form	No.	Each	Form
1 Button (Open)	Start	1/2	EFSC121	\$15.60	1J	EFSC1606	\$18.35	506J
	Start	3/4	EFSC221	15.70	1J	EFSC2606	18.45	506J
1 Button (Closed)	Start	1	EFSC321	15.90	1J	EFSC3606	18.65	506J
	Stop	1/2	EFSC122	15.60	2J	EFSC1607	18.35	507J
2 Buttons (1 Open 1 Closed)	Stop	3/4	EFSC2202	15.70	2J	EFSC2607	18.45	507J
	Stop	1	EFSC322	15.90	2J	EFSC3607	18.65	507J
2 Buttons (Both Open)	Start	1/2	EFSC125	16.65	5J	EFSC1600	19.40	500J
	Stop	3/4	EFSC225	16.75	5J	EFSC2600	19.50	500J
2 Buttons (Both Closed)	Start	1	EFSC325	16.95	5J	EFSC3600	19.70	500J
	Stop	1/2	EFSC123	16.65	3J	EFSC1602	19.40	502J
	Stop	3/4	EFSC2203	16.75	3J	EFSC2602	19.50	502J
	Stop	1	EFSC323	16.95	3J	EFSC3602	19.70	502J
	Stop	1/2	EFSC1205	16.65	05J	EFSC1604	19.40	504J
	Stop	3/4	EFSC2205	16.75	05J	EFSC2604	19.50	504J
	Stop	1	EFSC3205	16.95	05J	EFSC3604	19.70	504J

**EFS Series Pilot Light Condulets**

Schedule CE

Explosion-Proof and Dust-Tight



Furnished with candelabra base receptacle; 6-watt, 115 volts, Type S-6 clear bulb lamp; jewel; and guard.

Outside dimensions, exclusive of hubs: length, 5 1/8 inches; width, 3 1/2 inches; depth, 4 3/8 inches.

Color of Jewel	Hub Size In.	With Single Pilot Light			With Double Pilot Light		
		No.	Each	Form	No.	Each	Form
Ruby	1/2	EFSC1524	\$8.10	524	EFSC1561	\$11.60	561
Emerald	1/2	EFSC1541	8.10	524	EFSC1563	11.60	561
Clear	1/2	EFSC1548	8.10	524	EFSC1570	11.60	561
Ruby	3/4	EFSC2524	8.20	524	EFSC2561	11.70	561
Emerald	3/4	EFSC2541	8.20	524	EFSC2563	11.70	561
Clear	3/4	EFSC2548	8.20	524	EFSC2570	11.70	561
Ruby	1	EFSC3524	8.40	524	EFSC3561	11.90	561
Emerald	1	EFSC3541	8.40	524	EFSC3563	11.90	561
Clear	1	EFSC3548	8.40	524	EFSC3570	11.90	561

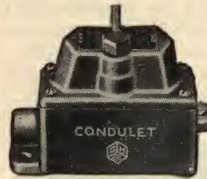
**EFS Series Secondary Breaker Condulets**

Schedule CE

Single-Gang

Explosion-Proof and Dust-Tight

For D.C. or Single-Phase A.C. Motors



Type EFS



Type EFSC

Outside dimensions, exclusive of hubs: Length, 5 1/8 inches; width, 3 1/2 inches; depth, 4 3/8 inches.

**With Secondary Breaker**

Type EFS

Arrow-H&amp;H Secondary Breaker

Hub Size In.	Single-Pole			Double-Pole		
	No.	Each	Form	No.	Each	Form
1/2	EFS1171	\$7.60	*71	EFS1172	\$8.10	*72
3/4	EFS2171	7.65	*71	EFS2172	8.15	*72
1	EFS3171	7.75	*71	EFS3172	8.25	*72

Bryant Type H Secondary Breaker

Hub Size In.	Single-Pole			Double-Pole		
	No.	Each	Form	No.	Each	Form
1/2	EFS1151-BR	\$7.60	*51	EFS1152-BR	\$8.10	*52
3/4	EFS2151-BR	7.65	*51	EFS2152-BR	8.15	*52
1	EFS3151-BR	7.75	*51	EFS3152-BR	8.25	*52

Westinghouse Type H Secondary Breaker

Hub Size In.	Single-Pole			Double-Pole		
	No.	Each	Form	No.	Each	Form
1/2	EFS1151-W	\$7.60	*51	EFS1152-W	\$8.10	*52
3/4	EFS2151-W	7.65	*51	EFS2152-W	8.15	*52
1	EFS3151-W	7.75	*51	EFS3152-W	8.25	*52

Type EFSC

Arrow-H&amp;H Secondary Breaker

Hub Size In.	Single-Pole			Double-Pole		
	No.	Each	Form	No.	Each	Form
1/2	EFSC1171	\$7.70	*71	EFSC1172	\$8.20	*72
3/4	EFSC2171	7.80	*71	EFSC2172	8.30	*72
1	EFSC3171	7.95	*71	EFSC3172	8.45	*72

Bryant Type H Secondary Breaker

Hub Size In.	Single-Pole			Double-Pole		
	No.	Each	Form	No.	Each	Form
1/2	EFSC1151-BR	\$7.70	*51	EFSC1152-BR	\$8.20	*52
3/4	EFSC2151-BR	7.80	*51	EFSC2152-BR	8.30	*52
1	EFSC3151-BR	7.95	*51	EFSC3152-BR	8.45	*52

Westinghouse Type H Secondary Breaker

Hub Size In.	Single-Pole			Double-Pole		
	No.	Each	Form	No.	Each	Form
1/2	EFSC1151-W	\$7.70	*51	EFSC1152-W	\$8.20	*52
3/4	EFSC2151-W	7.80	*51	EFSC2152-W	8.30	*52
1	EFSC3151-W	7.95	*51	EFSC3152-W	8.45	*52

**Without Breaker—Take 1 and 2-Pole Breakers**

For Arrow-H&amp;H Secondary Breaker

Hub Size In.	Type EFS			Type EFSC		
	No.	Each	Form	No.	Each	Form
1/2	EFS1172-B	\$4.35	72B	EFSC1172-B	\$4.45	72B
3/4	EFS2172-B	4.40	72B	EFSC2172-B	4.55	72B
1	EFS3172-B	4.50	72B	EFSC3172-B	4.70	72B

For Bryant Type H Secondary Breaker

Hub Size In.	Single-Pole			Double-Pole		
	No.	Each	Form	No.	Each	Form
1/2	EFS1152-B	\$4.35	52B	EFSC1152-B	\$4.45	52B
3/4	EFS2152-B	4.40	52B	EFSC2152-B	4.55	52B
1	EFS3152-B	4.50	52B	EFSC3152-B	4.70	52B

For Westinghouse Type H Secondary Breaker

Hub Size In.	Single-Pole			Double-Pole		
	No.	Each	Form	No.	Each	Form
1/2	EFS1152-B	\$4.35	52B	EFSC1152-B	\$4.45	52B
3/4	EFS2152-B	4.40	52B	EFSC2152-B	4.55	52B
1	EFS3152-B	4.50	52B	EFSC3152-B	4.70	52B

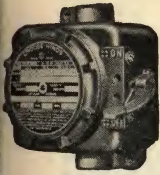
\*Price includes breaker with one interchangeable heater.

†Price includes breaker with integral heater. Add symbol number of heater or breaker as a suffix to number of complete Condulet.



## Type GUSC Condulets

Schedule CE  
Explosion-Proof and Dust-Tight  
Group D; and Classes II and III



Type GUSC motor control Condulets have a rectangular body with a round, threaded opening in the front which is equipped with a threaded cover.

Furnished with through feed hubs for threaded conduit, and external mounting lugs with fastening holes.

## With Manual Across-The-Line Motor Starting Switches

Poles	Phase	HORSEPOWER RATING				Hub Size In.	No.	Each
		110-V.	220-V.	440-V.	D. C.			
1	1	1	1 1/2	1 1/2	3/4	3/4	GUSC2081-AH	\$14.00
2	1	1	1 1/2	1 1/2	3/4	3/4	GUSC2092-AH	19.00
3	3 and 2	1 1/2	2	...	3/4	3/4	GUSC2123-AH	22.00
4	2	1 1/2	2	...	3/4	3/4	GUSC2124-AH	28.00

## With Tumbler Switches

Style	Rating	Hub Size In.	No.	Each
1-Pole	30-Amp., 250-V.	1/2	GUSC1061-AH	\$7.50
		3/4	GUSC2061-AH	7.65
2-Pole	(30-Amp., 250-V.)	1/2	GUSC1052-AH	7.95
	2 Hp., 115-230-V., A.C.;	3/4	GUSC2052-AH	8.10
	1 Hp., 460-V., A.C.			
3-Pole	(30-Amp., 250-V.)	3/4	GUSC2013-AH	10.95
	20-Amp., 600-V.;			
	2 Hp., 115-575-V., A.C.			
4-Pole	(30-Amp., 250-V.)	3/4	GUSC2024-AH	11.90
	2 Hp., 115-230-V., A.C.;			
	1 Hp., 460-V., A.C.			
3-Way	30-Amp., 250-V.	3/4	GUSC2073-AH	13.15

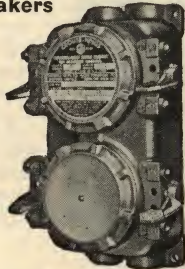
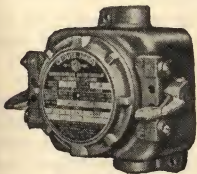
## With Electro-Magnetic Auxiliary Breaker



Poles	Volts	Rating Amperes	Hub Size In.	No.	Each
1	115 A.C.	1/4 to 1	3/4	GUSC-2041-11	\$15.75
		1 to 35	1	GUSC-2041-13	15.00
	230 A.C.	1/4 to 1	3/4	GUSC-2041-31	15.75
		1 to 35	1	GUSC-2041-33	15.00
	250 D.C.	1/4 to 1	3/4	GUSC-2041-51	16.50
	115-230 A.C. 1 Hp.			GUSC-2041-53	15.75

## Type GUSC Circuit Breaker Condulets

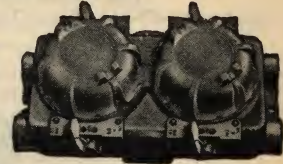
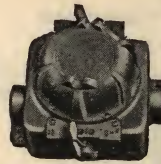
Schedule CE  
With Multi-Breakers



No. of Breakers	Poles	Rating Amperes	Hub Size In.	Neutral Connection Block			
				Grounded		Ungrounded	
1	1	15	3/4	No.	Each	No.	Each
1	1	20	3/4	GUSC2251	\$17.00	GUSC2252	\$17.00
1	1	25	3/4	GUSC2261	17.00	GUSC2262	17.00
2	1	15	3/4	GUSC2271	17.00	GUSC2272	17.00
2	1	20	3/4	GUSC2281	21.00	GUSC2282	21.00
2	1	25	3/4	GUSC2291	21.00	GUSC2292	21.00
2	1	25	3/4	GUSC2311	21.00	GUSC2312	21.00
2	1	1-15, 1-20	3/4	GUSC2321	21.00	GUSC2322	21.00
1	2	15	3/4	GUSC2331	18.00	GUSC2332	18.00
1	2	20	3/4	GUSC2341	18.00	GUSC2342	18.00
1	2	25	3/4	GUSC2351	18.00	GUSC2352	18.00
				Two-Gang			
3	1	15	3/4	GUSC2361	\$36.00	GUSC2362	\$36.00
3	1	20	3/4	GUSC2371	36.00	GUSC2372	36.00
3	1	25	3/4	GUSC2381	36.00	GUSC2382	36.00
4	1	15	3/4	GUSC2471	40.00	GUSC2472	40.00
4	1	20	3/4	GUSC2481	40.00	GUSC2482	40.00
4	1	25	3/4	GUSC2491	40.00	GUSC2492	40.00
2	2	15	3/4	GUSC2571	34.00	GUSC2572	34.00
2	2	20	3/4	GUSC2581	34.00	GUSC2582	34.00
2	2	25	3/4	GUSC2591	34.00	GUSC2592	34.00

## Type GUSC Circuit Breaker Condulets

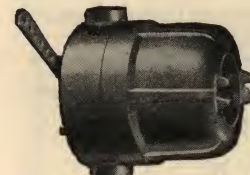
Schedule CE  
With Quicklag Breakers



No. of Breakers	Rating Poles	Hub Size In.	Neutral Connection Block			
			Grounded		Ungrounded	
1	1	10	No.	Each	No.	Each
1	1	15	GUSC3110-10	\$17.00	GUSC3111-10	\$17.00
1	1	20	GUSC3110-15	17.00	GUSC3111-15	17.00
1	1	25	GUSC3110-20	17.00	GUSC3111-20	17.00
1	1	35	GUSC3110-25	17.00	GUSC3111-25	17.00
2	1	10	GUSC3110-35	17.00	GUSC3111-35	17.00
2	1	15	GUSC3210-10	21.00	GUSC3211-10	21.00
2	1	20	GUSC3210-15	21.00	GUSC3211-15	21.00
2	1	25	GUSC3210-20	21.00	GUSC3211-20	21.00
2	1	35	GUSC3210-25	21.00	GUSC3211-25	21.00
1	2	10	GUSC3210-35	21.00	GUSC3211-35	21.00
1	2	15	GUSC3120-10	18.00	GUSC3121-10	18.00
1	2	20	GUSC3120-15	18.00	GUSC3121-15	18.00
1	2	25	GUSC3120-20	18.00	GUSC3121-20	18.00
1	2	35	GUSC3120-25	18.00	GUSC3121-25	18.00
			Two-Gang			
3	1	10	GUSC3310-10	\$36.00	GUSC3311-10	\$36.00
3	1	15	GUSC3310-15	36.00	GUSC3311-15	36.00
3	1	20	GUSC3310-20	36.00	GUSC3311-20	36.00
3	1	25	GUSC3310-25	36.00	GUSC3311-25	36.00
4	1	10	GUSC3410-10	40.00	GUSC3411-10	40.00
4	1	15	GUSC3410-15	40.00	GUSC3411-15	40.00
4	1	20	GUSC3410-20	40.00	GUSC3411-20	40.00
4	1	25	GUSC3410-25	40.00	GUSC3411-25	40.00
2	2	10	GUSC3220-10	34.00	GUSC3221-10	34.00
2	2	15	GUSC3220-15	34.00	GUSC3221-15	34.00
2	2	20	GUSC3220-20	34.00	GUSC3221-20	34.00
2	2	25	GUSC3220-25	34.00	GUSC3221-25	34.00

## Type EMS Mercury Limit Switch Condulet Parts

Condulet housing with operating mechanism only.



Size	Direct Action		Snap Action		Spring Return Clockwise (Facing Cover)	
	No.	Each	No.	Each	No.	Each
1	EMS33-M2	\$10.00	EMS330-M2	\$12.50	EMS332	\$11.60
2	EMS34-M2	10.80	EMS340-M2	13.30	EMS342	12.40
Size	Spring Return Counter-Clockwise (Facing Cover)		Spring Return to Center of Travel			
	No.	Each	No.	Each		
1	EMS335	\$11.60			EMS333	\$11.60
2	EMS345	12.40				

Connection Block		No. of Terminals	
No.	Each	Material	
CB641	\$ .70	Bakelite	3 for No. 14-10 Wire

## Mercury Switches and Carriers



Nominal RATINGS, AMPERES Maximum									
Size of (Non-Inductive) Switch 110-V. 220-V.									
Amperes	D.C.	D.C.	A.C.	A.C.	Glass Tube Switch		Switch Carriers		
					No.	Each	No.	Each	
4	4	2	1	1/2	SWM241	\$1.60	*EMS4-M2	\$1.20	
10	10	5	3	1	SWM210	2.85	EMS10-M2	1.20	
25	25	12 1/2	6	2	SWM225	5.75	EMS25	1.85	
4	4	2	1	1/2	†SWM242	3.00	*EMS4-M2	1.20	
Metal Clad Switch									
					No.	Each	Switch Carriers		
5	5	5	3	1/2	SWM15	\$1.60	*EMS5-M2	\$1.20	
10	10	10	6	1	SWM110	2.15	*EMS5-M2	1.20	
20	20	20	12	1 1/2	SWM120	3.25	EMS20	1.20	

\*With vernier adjustment.

†Double-throw. All other switches are single-throw.



## Type EGP Condulets

Schedule CE

For Panel Mounting  
Explosion-Proof, Dust-Tight and Vaportight  
Class I, Groups C and D; and Classes II and III

\*Equipped with candelabra lamp receptacles and 120-volt, 6-watt type S-6 clear bulb lamps and colored or clear glass jewels.

## Pilot Light Condulets



## With One Pilot Light

Size Hub Inches	†No.	Each
1	EGP311	\$11.50
1	With Two Pilot Lights Straight Hubs EGP312	22.50
1	With Three Pilot Lights EGP313	33.50
1	With Two Pilot Lights Tangential Hubs EGP322	22.50

## Push Button Station Condulets

D 120, 5 Amperes, Standard Duty

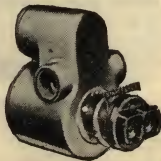


Includes switch and a motor control push button mounted within the Condulet body. Hubs are through feed.

Normal Position	Plate Marking	Size Hub Inches	With One Operating Button		With Two Operating Buttons	
			†No.	Each	†No.	Each
1 Circuit Open... Start	1	1	EGP3101	\$17.75	.....	.....
1 Circuit Closed... Stop			EGP3102	17.75	.....	.....
2 Circuits	1	1	EGP3103	18.75	EGP3107	\$19.25
1 Open... Start 1 Closed... Stop			EGP3104	18.75	EGP3108	19.25
2 Circuits Open... Start	1	1	EGP3105	18.75	EGP3109	19.25
2 Circuits Closed... Stop			EGP3106	19.50	EGP3110	20.00
2 Circuits Must be 1	1	1				
Universal Specified						
Also available in 30 amperes, heavy duty.						

Also available in 30 amperes, heavy duty.

## Push Button Switch Condulets



Includes a push button switch and a push button mounted within the Condulet body. Hubs are through feed.

Style	Hub Size Inches	(AMPERES) 125 Volts	250 Volts	Horse- power	Plate Marking	†No.	Each
1-Pole	1	20	10	..	On-Off	EGP3141	\$16.05
2-Pole	1	20	20	2	On-Off	EGP3142	16.15
3-Way	1	15	10	..	.....	EGP3143	16.45
4-Way	1	4	2	..	.....	EGP3144	19.35

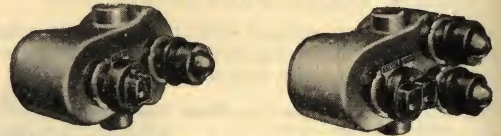
†For jewels add suffix: J1 for ruby; J3 for emerald; J6 for amber; J8 for opal; J10 for clear; J11 for blue.

\*For 220-volt lamps, add suffix V2 and \$.35 to prices.

## Type EGP Condulets

Schedule CE

For Panel Mounting  
Explosion-Proof, Dust-Tight, and Vaportight  
Class I, Groups C and D; and Classes II and III  
Combination Push Button Station and  
Pilot Light Condulets  
D 120, 5 Amperes, Standard Duty



With One Pilot Light				With Two Pilot Lights			
Includes a push button station and a pilot light mounted within an explosion-proof body. Hubs are through feed.							
Normal Position	Hub Size Inches	Plate Marking	No. Pilot Lights	With One Operating Button		With Two Operating Buttons	
				No.	Each	No.	Each
1 Circuit Open....	1	Start	1	EGP3601	\$24.75	.....	.....
1 Circuit Closed....	1	Stop	1	EGP3602	24.75	.....	.....
2 Circuits Open....	1	Start	1	EGP3604	25.75	EGP3608	\$26.75
2 Circuits Open....	1	Start	2	EGP3704	33.75	EGP3708	34.75
2 Circuits Closed....	1	Stop	1	EGP3605	25.75	EGP3609	26.75
2 Circuits Closed....	1	Stop	2	EGP3705	33.75	EGP3709	34.75
2 Circuits 1 Open..	1	Start	1	.....	.....	EGP3607	26.75
1 Closed.	1	Stop	2	.....	.....	EGP3707	34.75
2 Circuits Universal	1	Must be Specified	1	EGP3606	26.50	EGP3610	27.50
			2	EGP3706	34.50	EGP3710	35.50

## Mercury Switch Condulets

Hubs are through feed.

Style	Hub Size In.	No. Poles of Tubes	No.	Each
On-Off....	1	1	EGP317	\$24.50
On-Off....	1	2	EGP327	27.00
On-Off....	1	3	EGP337	33.50
Double Throw (With Off Position)...	1	1	EGP319	27.00
Double Throw (With Off Position)...	1	2	EGP329	35.00
Double Throw (With Off Position)...	1	1	EGP318	24.50
Double Throw (With Off Position)...	1	2	EGP328	27.00
Double Throw (With Off Position)...	1	3	EGP338	33.50

## Type ESP Panelboards

Explosion-Proof, Dust-Tight, Vaportight and Weatherproof

Furnished with branch circuit breakers, main lugs, and terminal connection blocks.

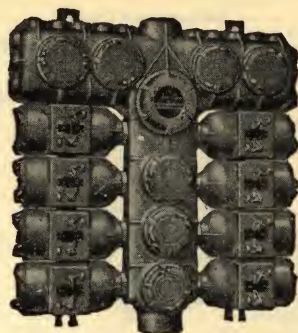
Available with 20, 25, 35, and 50-ampere breakers or combinations of these breakers. Any combination of breakers of 15, 20, or 25-ampere size furnished at \$.50 extra.

## Branch Circuits

Mains—2-Wire, 125-Volt A.C. or D.C.  
Branches—2 Wire, 125-Volt A.C. or D.C.  
Breakers—2-Pole

Main Lug Size	Circuits	Ampere Rating	No.	Each
4	2	15	ESP102-15	\$127.00
			Mains—3-Wire, 125-250-Volt A.C. or D.C. Branches—3-Wire, 125-250-Volt A.C. or D.C. Breakers—2-Pole	
4	2	15	ESP202-15	127.00
			Mains—3-Wire, 125-250-Volt A.C. or D.C. Branches—3-Wire, 125-250-Volt A.C. or D.C. Breakers—3-Pole	
4	2	15	ESP602-15	143.00
			Mains—3-Wire, 125-250-Volt A.C. or D.C. Branches—2-Wire, 125-Volt, A.C. or D.C. Solid Neutral	
4	4	15	ESP404-15	117.00
			Mains—3-Wire, 125-250-Volt A.C. or D.C. Branches—3-Wire, 125-250-Volt A.C. or D.C. Solid Neutral	
4	2	15	ESP302-15	127.00
			Mains—4-Wire, 120-208-Volt, 3-Phase Branches—2-Wire, 120-Volt, Single-Phase Solid Neutral—Breakers—Single-Pole	
4	4	15	ESP504-15	122.00



**Type EDP Panelboards***Schedule CE***With Circuit Breakers****Class I, Group D; and Classes II and III**

Designed for use in hazardous locations. May also be used in non-hazardous locations where corrosive vapors, non-combustible dusts, or moisture are present.

Wired complete. Connections between terminal blocks and circuit breakers are made at the factory. Each circuit breaker compartment is sealed from the T section.

**Branch Circuits**

**Mains—3-Wire, 125-250 Volt A.C. or D.C.  
Branches—3-Wire, 125-250-Volt A.C. or D.C.  
Breakers—3-Pole**

Main Lug Size	Circuits	Ampere Rating	No.	Each
1	4	15	EDP604-15	\$281.00
1	6	15	EDP606-15	389.00
	<b>Mains—3-Wire, 125-Volt, 3-Phase Branches—2-Wire, 125-Volt, Single-Phase Breakers—2-Pole</b>			
1	6	15	EDP906-15	\$276.00
1	8	15	EDP908-15	358.00
	<b>Mains—4-Wire, 120-208-Volt, 3-Phase Branches—2-Wire, 120-Volt, Single-Phase Solid Neutral, Breakers—Single-Pole</b>			
1	6	15	EDP506-15	\$203.00
1	8	15	EDP508-15	234.00
1	10	15	EDP510-15	265.00
1	12	15	EDP512-15	296.00
1	14	15	EDP514-15	357.00
1	16	15	EDP516-15	387.00
	<b>Mains—4-Wire, 120-208-Volt, 3-Phase Branches—3-Wire, 120-208-Volt, Single Phase Solid Neutral, Breakers—2-Pole</b>			
1	4	15	EDP804-15	\$222.00
1	6	15	EDP806-15	276.00
1	8	15	EDP808-15	358.00
	<b>Mains—4-Wire, 120-208-Volt, 3-Phase Branches—4-Wire, 120-208-Volt, 3-Phase Solid Neutral, Breakers—3-Pole</b>			
1	4	15	EDP1104-15	\$281.00
1	6	15	EDP1106-15	389.00
	<b>Mains—2-Wire, 125-Volt A.C. or D.C. Branches—2-Wire, 125-Volt A.C. or D.C. Breakers—2-Pole</b>			
1	4	15	EDP104-15	\$224.00
1	6	15	EDP106-15	276.00
0000	8	15	EDP108-15	358.00
	<b>Mains—3-Wire, 125-250 Volt A.C. or D.C. Branches—2-Wire, 125-Volt, A.C. or D.C. Solid Neutral, Breakers—Single-Pole</b>			
1	6	15	EDP406-15	\$203.00
1	8	15	EDP408-15	234.00
1	10	15	EDP410-15	265.00
1	12	15	EDP412-15	296.00
0000	14	15	EDP414-15	357.00
0000	16	15	EDP416-15	388.00
	<b>Mains—3-Wire, 125-250-Volt A.C. or D.C. Branches—2-Wire, 125-Volt A.C. or D.C. Breakers—2-Pole</b>			
1	4	15	EDP204-15	\$224.00
1	6	15	EDP206-15	276.00
1	8	15	EDP208-15	358.00
	<b>Mains—3-Wire, 125-250-Volt A.C. or DC. Branches—3-Wire, 125-250-Volt A.C. or D.C. Solid Neutral Breakers—2-Pole</b>			
1	4	15	EDP304-15	\$224.00
1	6	15	EDP306-15	276.00
0000	8	15	EDP308-15	358.00

Available with 20, 25, 35, and 50-ampere breakers or any combination of these breakers. Any combination of breakers of 15, 20, or 25-ampere size furnished at \$5.00 extra.

**Type DVP Panelboards***Schedule CE***With Circuit Breakers  
Vaportight****Class II, Groups E, F, and G; and Class III**

Designed to meet requirements for hazardous locations and for locations requiring vaportight equipment.

Circuit breakers and main lug housing are made of cast aluminum with hub plates in two sizes. The smaller unit takes 4 double-pole or 8 single-pole breakers. The larger unit takes 8 double-pole or 16 single-pole breakers.

Panelboards are equipped with 15-ampere, single or double-pole breakers.

**15-Ampere Branch Circuit Breakers**

**Mains—3-Wire, 125-250-Volt Solid Neutral  
Branches—2-Wire, 125-Volt Solid Neutral**

Circuits	Poles	Ampere Capacity Mains	No.	Each
4	1	50	DVP404	\$92.60
6	1	50	DVP406	111.40
8	1	50	DVP408	134.30
10	1	50	DVP410	183.20

**Mains—4-Wire, 125-216-Volt 3-Phase  
Branches—2-Wire, 125-Volt Single-Phase  
Solid Neutral**

3	1	50	DVP503	\$86.85
6	1	50	DVP506	112.40
9	1	50	DVP509	177.45
12	1	50	DVP512	211.00
15	1	50	DVP515	245.40

**Mains—2-Wire, 125-Volt  
Branches—2-Wire, 125-Volt**

4	2	50	DVP104	\$115.60
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**Mains—3-Wire, 125-250-Volt  
Branches—2-Wire, 125-Volt**

4	2	50	DVP204	\$116.60
6	2	50	DVP206	198.40
8	2	50	DVP208	226.30
10	2	50	DVP210	319.20

**Mains—3-Wire, 125-Volt 3-Phase  
Branches—2-Wire, 125-Volt Single-Phase**

3	2	50	DVP903	\$104.10
6	2	50	DVP906	198.40
9	2	50	DVP912	306.70

**Mains—3-Wire, 125-250-Volt Solid Neutral  
Branches—3-Wire, 125-250-Volt  
Solid Neutral**

4	2	50	DVP304	\$119.60
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Orders for panelboards should be accompanied by a sketch showing the number, sizes, and location of hub plates. Any practical arrangement of hub plates will be furnished without extra cost.

Panelboards are also available in larger sizes for 100 and 225-ampere capacity mains.

Special panelboards for 20 or 25-ampere circuit breakers or with mixed capacity breakers can be furnished.

Can also be furnished in cast Feraloy at same prices.



## Type FLF Manual Motor Starting Switch Condulets

With Starter

Through Feed—Two at Bottom

Explosion-Proof, Dust-Tight, and Weather Resistant



Type FLF

Across-the-line starting type with thermal overload trip.

Listed for 1-inch threaded hub arrangements.

Other hub arrangements can be furnished.

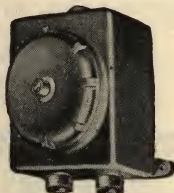
Size	Pole	MAXIMUM HORSEPOWER			No. of Hubs	No.	With Starter Each
		110 Volts	208- 220 Volts	440- 550 Volts			
0	2 (1 Ph.)	1	1½	1½	2	FLF103-D21	\$30.70
						FLF303-D21	30.70
0	3 (3 Ph.)	1½	2	2	2	FLF103-D33	30.70
						FLF303-D33	30.70
0	2 (D.C.)	1	1	...	2	FLF103-D20	30.70
						FLF303-D20	30.70
1	2 (1 Ph.)	1½	3	5	2	FLF189-D21	33.65
						FLF389-D21	33.65
1	3 (3 Ph.)	3	5	7½	2	FLF189-D33	33.65
						FLF389-D33	33.65
1	2 (D.C.)	1½	2	...	2	FLF189-D20	33.65
						FLF389-D20	33.65

## Type GUB Magnetic Motor Starting Switch Condulets

With Starter

3-Phase—60 Cycle

Explosion-Proof, Dust-Tight, and Weather Resistant



110 Volts

Size	Maximum Horsepower	No.	Each
0	1½	GUB182-D6130	\$54.95
1	2	GUB182-D6131	54.95
208-220 Volts			
0	2	GUB182-D6230	54.95
1	5	GUB182-D6231	54.95
440-480 Volts			
0	2	GUB182-D6430	54.95
1	7½	GUB182-D6431	54.95
550 Volts			
0	2	GUB182-D6530	54.95
1	7½	GUB182-D6531	54.95

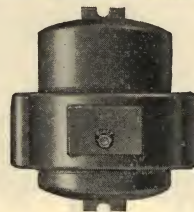
## Type EPC Magnetic Motor Starting Switch Condulets

With Starter

3-Phase—60 Cycle

Explosion-Proof, Dust-Tight, Vaportight, and  
Weather Resistant

Class I, Group D; and Classes II and III



Has across-the-line magnetic motor switch for starting polyphase a.c. induction motors.

Available with oil-immersed starter and for 110 and 550 volts.

### 208-220 Volts

Size	Maximum Horsepower	No.	Each
0	2	EPC615-D623	\$68.05
1	5	EPC615-D623	69.75
2	15	EPC616-D623	114.35
3	30	EPC617-D623	190.80
4	50	EPC627-D623	263.95

### 440-480 Volts

Size	Maximum Horsepower	No.	Each
0	2	EPC615-D643	68.05
1	7½	EPC615-D643	69.75
2	25	EPC616-D643	114.35
3	50	EPC617-D643	190.80
4	100	EPC627-D643	263.95

## Type EPC Combination Line Starter Condulets

With Thermal Air Circuit Breakers  
and Starters

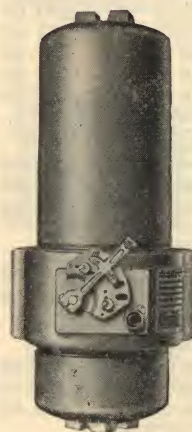
Explosion-Proof, Dust-Tight,  
Vaportight, and  
Weather-Resistant

Class I, Group D; and Classes II and III

For use in hazardous locations.

The combination starter provides circuit breaker disconnect with short circuit and overload protection for the motor circuit plus undervoltage release and overload protection for the motor.

Available with oil-immersed starter and for 110 or 550 volts.



### 208-220 Volts

Size	Maximum Horsepower	Ampere Rating	No.	Each
0	2	15	EPC1099-TT15-D623	\$101.00
1	5	35	EPC1099-TT35-D623	105.30
2	10	50	EPC10100-TT50-D623	144.90
2	15	70	EPC1026-TT70-D623	157.95
3	30	100	EPC1028-TT100-D623	249.40
3	30	125	EPC1037-TT125-D623	324.30
4	50	225	EPC1070-TT225-D623	397.45

### 440-480 Volts

Size	Maximum Horsepower	Ampere Rating	No.	Each
0	2	15	EPC1025-TT15-D643	114.00
1	3	15	EPC1025-TT15-D643	115.70
1	7½	25	EPC1025-TT25-D643	115.70
2	10	35	EPC1026-TT35-D643	157.95
2	25	50	EPC1026-TT50-D643	157.95
2	25	70	EPC1026-TT70-D643	166.75
3	50	100	EPC1028-TT100-D643	258.20
3	50	125	EPC1037-TT125-D643	341.55
4	75	150	EPC1070-TT150-D643	414.70
4	100	200	EPC1070-TT200-D643	414.70



**Type FLS Motor Circuit Switch Condulets**

**With Switch—Not Fusible**  
**Explosion-Proof—Dust-Tight**  
 Class I, Group D; and Classes II and III



For motor disconnects to comply with code requirements for installation of a disconnect switch within sight of the motor.

The fuseless switch is the sliding action quick-make quick-break type with double break positive pressure contacts.

Hub Size, In.	Amps.	Poles	HORSEPOWER RATING			No.	Each
			230 Volts A.C.	250 Volts D.C.	575 Volts A.C.		
3/4	30	2	5	5	5	FLS30254-1-22	\$50.00
1	30	3	7 1/2	..	10	FLS30354-1-33	53.75
1 1/4	60	2	10	10	15	FLS60254-1-44	59.30
1 1/4	60	3	20	..	25	FLS60354-1-44	67.85
1 1/2	100	2	10	20	15	FLS10254-1-55	170.00
1 1/2	100	3	30	..	30	FLS10354-1-55	179.95
2	200	2	25	30	50	FLS20254-1-66	173.00
2 1/2	200	3	30	..	50	FLS20354-1-77	182.95

**Type FLB Circuit Breaker Condulets**

**For Feeder and Branch Circuit Protection**

**Explosion-Proof—Dust-Tight**  
 Class I, Group D; and Classes II and III



For service entrance, feeder, or branch circuit protection; for lighting, appliance, and motor circuits.

Not recommended as a substitute for motor running protective devices.

For all hazardous locations.

Complete protection where exposed to corrosive vapors, abrasive dusts or weather.

**50-Ampere Frame Size**

**With Non-Interchangeable Thermal Trip**

Hub Size, In.	Voltage Rating	Poles	Amperes	No.	Each
3/4	125 Volts A.C. or D.C.	1	15	FLB41-TT15-1	\$21.60
		1	20	FLB41-TT20-1	21.60
		1	25	FLB41-TT25-1	21.60
		1	35	FLB41-TT35-1	22.45
1	250 Volts A.C. or 125-250 Volts D.C.	1	50	FLB41-TT50-1	22.45
		2	15	FLB42-TT15-2	26.10
		2	20	FLB42-TT20-2	26.10
		2	25	FLB42-TT25-2	26.10
1 1/4	250 Volts A.C. or 125-250 Volts D.C.	2	35	FLB42-TT35-2	27.95
		2	50	FLB42-TT50-2	27.95
		3	15	FLB43-TT15-3	40.95
		3	20	FLB43-TT20-3	40.95
1 1/2	250 Volts A.C. or 125-250 Volts D.C.	3	25	FLB43-TT25-3	40.95
		3	35	FLB43-TT35-3	43.55
		3	50	FLB43-TT50-3	43.55

**100-Ampere Frame Size**

**With Non-Interchangeable Thermal Trip and Non-Adjustable Magnet Trip**

1 1/4	250 Volts A.C. or 125-250 Volts D.C.	2	15	FLB132-TT15-2	50.10
		2	20	FLB132-TT20-2	50.10
		2	25	FLB132-TT25-2	50.10
		2	35	FLB132-TT35-2	52.00
1 1/2	250 V. A.C. or 125-150 V. D.C.	2	50	FLB132-TT50-2	52.00
		2	70	FLB132-TT70-2	60.00
		2	90	FLB232-TT90-2	77.00
		2	100	FLB232-TT100-2	77.00
1 3/4	600 Volts A.C. or 250 Volts D.C.	2	15	FLB1326-TT15-2	58.75
		2	20	FLB1326-TT20-2	58.75
		2	25	FLB1326-TT25-2	58.75
		2	35	FLB1326-TT35-2	60.40
1 1/2	600 V. A.C. or 250 V. D.C.	2	50	FLB1326-TT50-2	60.40
		2	70	FLB1326-TT70-2	68.25
		2	90	FLB2326-TT90-2	85.25
		2	100	FLB2326-TT100-2	85.25
1 3/4	250 Volts A.C. or 125-250 Volts D.C.	3	15	FLB133-TT15-3	54.50
		3	20	FLB133-TT20-3	54.50
		3	25	FLB133-TT25-3	54.50
		3	35	FLB133-TT35-3	57.25
1 1/2	250 V. A.C. or 125-250 V. D.C.	3	50	FLB133-TT50-3	57.25
		3	70	FLB133-TT70-3	66.60
		3	90	FLB233-TT90-3	83.60
		3	100	FLB233-TT100-3	83.60

**Type FLB Circuit Breaker Condulets**

**Concluded**

**Explosion-Proof—Dust-Tight**  
**For Feeder and Branch Circuit Protection**  
**225-Ampere Frame Size**

**With Interchangeable Thermal-Magnetic Trip**

Hub Size, In.	Voltage Rating	Poles	Amperes	No.	Each
2 1/2	250 Volts A.C. or 125-250 Volts D.C.	2	125	FLB22-TT125-2	\$196.65
		2	150	FLB22-TT150-2	196.65
		2	175	FLB22-TT175-2	196.65
		2	200	FLB22-TT200-2	196.65
2 1/2	600 Volts A.C. or 250 Volts D.C.	2	225	FLB22-TT225-2	196.65
		2	125	FLB226-TT125-2	209.00
		2	150	FLB226-TT150-2	209.00
		2	175	FLB226-TT175-2	209.00
2 1/2	250 Volts A.C. or 125-250 Volts D.C.	2	200	FLB226-TT200-2	209.00
		2	225	FLB226-TT225-2	209.00
		3	125	FLB23-TT125-3	211.15
		3	150	FLB23-TT150-3	211.15
2 1/2	250 Volts A.C. or 125-250 Volts D.C.	3	175	FLB23-TT175-3	211.15
		3	200	FLB23-TT200-3	211.15
		3	225	FLB23-TT225-3	211.15

**Type EPC Circuit Breaker Condulets**

**Explosion-Proof, Dust-Tight, Vaportight, and Weather-Resistant**

For service entrance, feeder or branch circuit protection; for lighting, appliance, and motor circuit conductors.

For manual closing, opening, or resetting, an external handle is provided.

**100-Ampere Frame Size**

**With Non-Interchangeable Thermal Trip and Non-Adjustable Magnetic Trip**  
 250 Volts A.C. or 125-250 Volts D.C.

Hub Size, In.	Amperes	No.	Each	No.	Each
1 1/4	15	EPC450-TT15-2	\$57.10	EPC450-TT15-3	\$61.50
	20	EPC450-TT20-2	57.10	EPC450-TT20-3	61.50
	25	EPC450-TT25-2	57.10	EPC450-TT25-3	61.50
	35	EPC450-TT35-2	59.00	EPC450-TT35-3	64.25
2	50	EPC450-TT50-2	59.00	EPC450-TT50-3	64.25
	70	EPC422-TT70-2	82.00	EPC422-TT70-3	88.60
	100	EPC422-TT100-2	82.00	EPC422-TT100-3	88.60
	600 Volts A.C. or 250 Volts D.C.				
1 1/4	15	EPC436-TT15-2	\$65.75		
	20	EPC436-TT20-2	65.75		
	25	EPC436-TT25-2	65.75		
	35	EPC436-TT35-2	67.40		
2	50	EPC436-TT50-2	67.40		
	70	EPC423-TT70-2	90.25		
	100	EPC423-TT100-2	90.25		

**225-Ampere Frame Size**

**With Interchangeable Thermal-Magnetic Trip**  
 250 Volts A.C. or 125-250 Volts D.C.

3	125	EPC420-TT125-2	\$201.60	EPC420-TT125-3	\$218.50
	150	EPC420-TT150-2	201.60	EPC420-TT150-3	218.50
	200	EPC420-TT200-2	201.60	EPC420-TT200-3	218.50
	225	EPC420-TT225-2	201.60	EPC420-TT225-3	218.50
3	600 Volts A.C. or 250 Volts D.C.				
	125	EPC442-TT125-2	\$213.90		
	150	EPC442-TT150-2	213.90		
	200	EPC442-TT200-2	213.90		
3	225	EPC442-TT225-2	213.90		

**600-Ampere Frame Size**

**With Interchangeable Thermal-Magnetic Trip**  
 250 Volts A.C. or 125-250 Volts D.C.

4	250	EPC446-TT250-2	\$457.90	EPC446-TT250-3	\$511.05
	300	EPC446-TT300-2	457.90	EPC446-TT300-3	511.05
	325	EPC446-TT325-2	457.90	EPC446-TT325-3	511.05
	350	EPC446-TT350-2	457.90	EPC446-TT350-3	511.05
4	400	EPC446-TT400-2	457.90	EPC446-TT400-3	511.05
	500	EPC446-TT500-2	486.25	EPC446-TT500-3	547.85
	550	EPC446-TT550-2	486.25	EPC446-TT550-3	547.85
	600	EPC446-TT600-2	486.25	EPC446-TT600-3	547.85
4	600 Volts A.C. or 250 Volts D.C.				
	250	EPC460-TT250-2	\$469.65		
	300	EPC460-TT300-2	469.65		
	325	EPC460-TT325-2	469.65		
4	350	EPC460-TT350-2	469.65		
	400	EPC460-TT400-2	469.65		
	500	EPC460-TT500-2	497.75		
	550	EPC460-TT550-2	497.75		
4	600	EPC460-TT600-2	497.75		



## Type DVS Circuit Breaker Condulets

Classes II and III



For service entrance or branch circuit protection; for lighting, appliance, heating and motor circuits.

Provides maximum safety and convenience of installation in hazardous locations.

Gives complete protection where exposed to corrosive vapors, abrasive dusts, or weather.

## 50-Ampere Frame Size

With Non-Interchangeable Thermal Trip

Hub Size Inches	Voltage Rating	Poles	Amperes	No.	Each
3/4	125 Volts A.C. or D.C.	1	15	DVS1-TT15-1	\$17.60
		1	20	DVS1-TT20-1	17.60
		1	25	DVS1-TT25-1	17.60
		1	35	DVS1-TT35-1	18.45
		1	50	DVS1-TT50-1	18.45
1	250 Volts A.C. or 125-250 Volts D.C.	2	15	DVS2-TT15-2	26.60
		2	20	DVS2-TT20-2	26.60
		2	25	DVS2-TT25-2	26.60
		2	35	DVS2-TT35-2	28.45
		2	50	DVS2-TT50-2	28.45
1 1/4	250 Volts A.C. or 125-250 Volts D.C.	3	15	DVS3-TT15-3	33.95
		3	20	DVS3-TT20-3	33.95
		3	25	DVS3-TT25-3	33.95
		3	35	DVS3-TT35-3	36.55
		3	50	DVS3-TT50-3	36.55

## 100-Ampere Frame Size

With Non-Interchangeable Thermal Trip and Non-Adjustable Magnetic Trip

1 1/4	250 Volts A.C. or 125-250 Volts D.C.	2	15	DVS53-TT15-2	\$37.10
		2	20	DVS53-TT20-2	37.10
		2	25	DVS53-TT25-2	37.10
		2	35	DVS53-TT35-2	39.00
		2	50	DVS53-TT50-2	39.00
1 1/2	250V. A.C. or 125-250V. D.C.	2	70	DVS53-TT70-2	47.00
		2	100	DVS104-TT100-2	62.00
1 1/4	250 Volts A.C. or 125-250 Volts D.C.	2	15	DVS536-TT15-2	45.75
		2	20	DVS536-TT20-2	45.75
		2	25	DVS536-TT25-2	45.75
		2	35	DVS536-TT35-2	47.40
		2	50	DVS536-TT50-2	47.40
1 1/2	250V. A.C. or 125-250V. D.C.	2	70	DVS536-TT70-2	55.25
		2	100	DVS164-TT100-2	70.25
1 1/4	250 Volts A.C. or 125-250 Volts D.C.	3	15	DVS53-TT15-3	41.50
		3	20	DVS53-TT20-3	41.50
		3	25	DVS53-TT25-3	41.50
		3	35	DVS53-TT35-3	44.25
		3	50	DVS53-TT50-3	44.25
1 1/2	250V. A.C. or 125-250V. D.C.	3	70	DVS53-TT70-3	53.60
		3	100	DVS104-TT100-3	68.60

## 225-Ampere Frame Size

With Interchangeable Thermal Magnetic Trip

2 1/2	250 Volts A.C. or 125-250 Volts D.C.	2	125	DVS23-TT125-2	\$166.65
		2	150	DVS23-TT150-2	166.65
		2	175	DVS23-TT175-2	166.65
		2	200	DVS23-TT200-2	166.65
		2	225	DVS23-TT225-2	166.65
2 1/2	600 Volts A.C. or 250 Volts D.C.	2	125	DVS236-TT125-2	179.00
		2	150	DVS236-TT150-2	179.00
		2	175	DVS236-TT175-2	179.00
		2	200	DVS236-TT200-2	179.00
		2	225	DVS236-TT225-2	179.00
2 1/2	250 Volts A.C. or 125-250 Volts D.C.	3	125	DVS23-TT125-3	181.15
		3	150	DVS23-TT150-3	181.15
		3	175	DVS23-TT175-3	181.15
		3	200	DVS23-TT200-3	181.15
		3	225	DVS23-TT225-3	181.15

## Type FLS General Use Switch Condulets

Schedule CE

## Explosion-Proof and Dust-Tight



Used as motor disconnects in hazardous locations.

The single throw, and the double throw switch Condulets with no off positions, are furnished with tumbler type quick make and break switches.

The double throw and motor reversing switches with off positions are slow-make and quick-break. The slow-make permits proper control for jogging service.

## Single Throw—Tumbler

30 Amperes, 250 Volts

5 Amperes, 600 Volts, D.C.

Hub Size In.	No.	Each	Form	No.	Each	Form
1/2	FLS102-11	\$22.00	2	FLS103-11	\$30.00	3
	FLS102-22	22.00	2	FLS103-22	30.00	3
3/4	FLS102-33	22.00	2	FLS103-33	30.00	3
	FLS102-44	22.00	2	FLS103-44	30.00	3
1 1/4	FLS102-44	22.00	2	FLS103-44	30.00	3

100 Amperes, 600 Volts, A.C.; 100 Amperes, 250 Volts

15 Amperes, 600 Volts, D.C.

1	FLS106-33	\$60.00	6	FLS107-44	\$70.00	7
1 1/4	FLS106-44	60.00	6	FLS107-55	70.00	7
1 1/2	FLS106-55	60.00	6	FLS107-66	70.00	7
2	FLS108-55	\$75.00	8	FLS109-55	\$185.00	9
1 1/2	FLS108-66	75.00	8	FLS109-66	185.00	9

## Double Throw—Tumbler—No "Off" Position

30 Amperes, 250 Volts—5 Amperes, 600 Volts, D.C.

1/2	FLS101-11	\$30.00	1	FLS111-11	\$38.00	13
3/4	FLS101-22	30.00	1	FLS111-22	38.00	13
1	FLS101-33	30.00	1	FLS111-33	38.00	13
1 1/4	FLS101-44	30.00	1	FLS111-33	38.00	13

## \*Double Throw—With "Off" Position

1/2	FLS112-11	\$36.00	12	FLS113-11	\$38.00	13
3/4	FLS112-22	36.00	12	FLS113-22	38.00	13
1	FLS112-33	36.00	12	FLS113-33	38.00	13

## \*Motor Reversing—With "Off" Position

1/2	FLS110-11	\$38.00	10	FLS111-11	\$40.00	11
3/4	FLS110-22	38.00	10	FLS111-22	40.00	11
1	FLS110-33	38.00	10	FLS111-33	40.00	11

\*Table of ratings:

Description	115-V.	230-V.	460-V.	575-V.
3-Pole, 2 or 3-Phase.....	2	5	5	5
2-Pole, 1-Phase.....	1 1/2	3	5	5

## Type HRC and HR Thermostat Condulets

Explosion-Proof—Dust-Tight

With Thermostat, Thermometer, and Mercury Tube Switch Class I, Group D; and Classes II and III



Meet the requirements of the National Electrical Code for control devices used in Class I hazardous locations.

The explosion-proof housing of the Type HRC is cast aluminum and is provided with two hand holes, one on the side for making connections and one on the back for access to the mercury tube.

Union hubs on each end make installation and removal of the entire device a matter of minutes.

Type HR Condulet consists of a body and cover. The temperature element is mounted upon the front of the cover while the switch is located within the Condulet. The body has two mounting feet and one 3/4-inch hub for conduit. The hub may be at top or bottom as desired.

## Type HRC

Hub Size Inches	Use	Range of Temperature Degrees Fahr.	No.	Each
1/2	Refrigeration	25 to 60	HRC126	\$30.00
	Heating	38 to 70	HRC137	30.00
	Heating	56 to 80	HRC158	30.00
	Air Conditioning	65 to 90	HRC169	30.00

## Type HR

3/4	Refrigeration	25 to 55	HR42A-21	.....
	Heating	45 to 75	HR42A-23	\$30.00
	Heating	55 to 85	HR42A-24	.....
	Air Conditioning	65 to 95	HR42B-25	30.00



## Type EHS Switch Condulets

## Explosion-Proof

Class I, Groups C and D

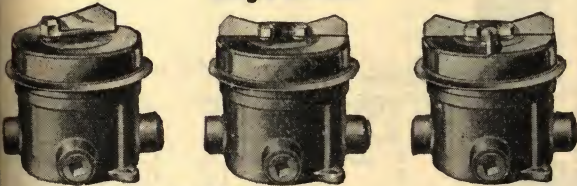
For flush mounting in hospital operating rooms and similar hazardous locations.

Consists of a body and a switch unit.

Available with one, two or three switches.

Design permits either hand or elbow operation. Chromium plated.

## Single Switch



Style	125 Volts	250 Volts	Hub Size Inches	Complete No.	Each	Switch Only No.	Each
Single-Pole	20	10	1	EHS3121	\$22.50	EHS121	\$18.00
2-Pole	20	20	1	EHS3122	22.60	EHS122	18.10
3-Way	15	10	1	EHS3123	22.85	EHS123	18.35
4-Way	10	5	1	EHS3124	25.30	EHS124	20.80
Nurses Call	..	..	1	EHS3218	30.00	EHS218	25.50

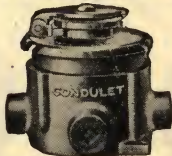
## Duplex Switch

Single-Pole	10	5	1	EHS321	25.50	EHS210	21.00
2-Pole	10	10	1	EHS322	25.60	EHS220	21.10
3-Way	10	5	1	EHS323	25.85	EHS230	21.35
4-Way	5	2	1	EHS324	28.30	EHS240	23.80

## Triple Switch

Single-Pole	10	5	1	EHS331	28.50	EHS310	24.00
2-Pole	10	10	1	EHS332	28.60	EHS320	24.10
3-Way	10	5	1	EHS333	28.85	EHS330	24.35
4-Way	5	2	1	EHS334	31.30	EHS340	26.80

## Type EHS Adjustable Delayed Action Plug Receptacle Condulets

Explosion-Proof  
Takes Type CPP Plugs

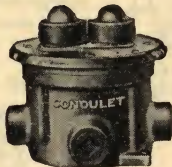
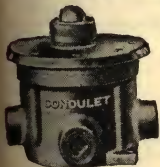
STYLE Wire Pole	AMPERES 115 or 230 Volts	460 Volts	HORSEPOWER 115 or 230 Volts	460 Volts	Hub Size In.	No.	Each
2 3	15	..	1	..	1	EHS3152	\$26.30
2 3	30	7	1 1/2	1 1/2	1	EHS3352	34.80
3 4	30	7	3	1	1	EHS3372	36.30

Also available in plain finish; deduct \$6.00 from prices.

## Type EHS Signal Light Condulets

Explosion-Proof

Class I, Groups C and D



For flush mounting in hospital operating rooms and other similar hazardous locations.

Includes candelabra base receptacle and 6-watt, 120-volt type S-6 clear bulb lamp with colored glass hood, face plate, and adjustable threaded adapter. Chromium plated.

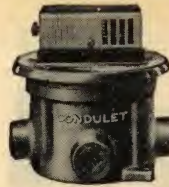
No. of Signals	Hood Colors	Hub Size Inches	With Signal Light No.	Each
1	Green	1	EHS315	\$30.00
2	{ Amber Green }	1	EHS325	30.00

Also available in plain finish; deduct \$4.75 from prices.  
For 220-volt lamp add suffix V2 to number and \$.35 to prices.

## Type EHS Thermostat Condulets

Explosion-Proof  
Chromium plated.

For Heating



Hub Size Inches	Range of Temperature Degrees Fahr.	With Thermostat No.	Each
1	45 to 75	EHS338	\$39.25

For Air Conditioning

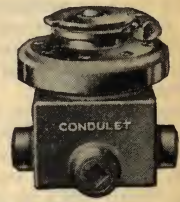
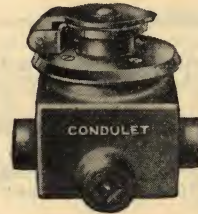
Hub Size Inches	Range of Temperature Degrees Fahr.	With Thermostat No.	Each
1	65 to 95	EHS365	43.00

Also available in plain finish, deduct \$4.75 from prices.

## Type CPS Adjustable Delayed Action Plug Receptacle Condulets

Explosion-Proof

Class I, Groups C and D



Chromium plated.

STYLE Wire Pole	Adjustment Inches	Hub Size Inches	15 Amperes, 115 or 230 Volts, A.C., 1 Hp. With Thermostat No.	Each
2 3	0 to 1/8	1	CPS61271	\$21.00
2 3	1/4 to 1 1/4	1	CPS61272	21.00
2 3	1 1/4 to 2 1/4	1	CPS61273	22.25
30 Amperes, 115 or 230 Volts A.C., 1 1/2 Hp.				
7 Amperes, 460 Volts A.C., 1/2 Hp.				
30 Amperes, 115 or 230 Volts A.C., 3 Hp.				
7 Amperes, 460 Volts A.C., 1 Hp.				
2 3	0 to 1/8	1	CPS3353	30.40
3 4	0 to 1/8	1	CPS3372	33.40

Also available in plain finish; prices on request.

## Type CPS Non-Adjustable Plug Receptacle Condulets

For Thin Partitions  
Takes Type CPP Plugs

Chromium plated.

STYLE Wire Pole	Amperes	Horse-Power	Hub Size Inches	115 or 230 Volts A.C. With Receptacle No.	Each
2 3	15	1	3/4	CPS212	\$20.00

Also available in plain finish; deduct \$6.00 from price.

## Type CPS Receptacle Equipment

For Rectangular Opening Wall Boxes

Takes Type CPP Plugs



For replacement of non-explosion-proof convenience outlets.

A GR terminal is provided for connection to a copper grounding conductor.

No. CPS212-S33  
Each \$18.50

## Type CPP Plugs

For Types EHS and CPS Plug Receptacle Units

Explosion-Proof

Class I, Groups C and D



Bakelite

Aluminum

Furnished with cable grip and bushing.

Bakelite

STYLE Wire Pole	Cable Diam. In.	15 Amperes, 115 or 230 Volts, A.C. No.	Each
2 3	.250 to .375	CPP312	\$5.00
2 3	.375 to .500	CPP412	5.00
2 3	.500 to .625	CPP512	5.00

Polished Aluminum

STYLE Wire Pole	Cable Diam. In.	30 Amps., 115 or 230V. A.C., 1 1/2 Hp.; 7 Amps., 460V., A.C., 1/2 Hp.; 30 Amps., 115 or 230V. A.C., 3 Hp.; 7 Amps., 460V., A.C., 1 Hp. No.	Each
2 3	.375 to .500	CPP453	\$11.00
2 3	.500 to .625	CPP553	11.00
2 3	.625 to .750	CPP653	11.00
2 3	.750 to .875	CPP753	11.00
3 4	.375 to .500	CPP472	11.75
3 4	.500 to .625	CPP572	11.75
3 4	.625 to .750	CPP672	11.75
3 4	.750 to .875	CPP772	11.75

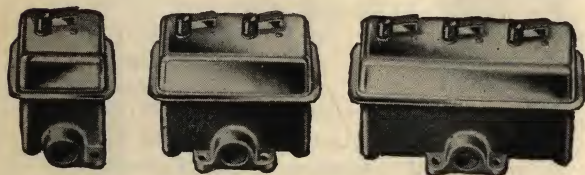


## Type ESW Tumbler Switch Condulets

Schedule CE

## Explosion-Proof

Class I, Groups C and D



For flush or surface mounting in hospital operating rooms and similar hazardous locations.

Primarily for installation where conduit is run on the surface of walls or partitions. May also be used with concealed conduit.

Consists of a body, a switch unit with cover and attached switch enclosure. The switch unit is reversible on body.

Outside dimensions of body exclusive of hubs: single-gang,  $3\frac{1}{4} \times 3\frac{1}{4} \times 3\frac{1}{8}$  inches; 2-gang,  $5\frac{3}{4} \times 3\frac{1}{4} \times 3\frac{1}{8}$  inches; 3-gang,  $8\frac{1}{4} \times 3\frac{1}{4} \times 3\frac{1}{8}$  inches.

Also available in plain finish for flush mounting and plain finish only for surface mounting.

## Flush Mounting—Chromium Plated Cover

## Single-Gang

Style	AMPERES		Hub Size	No.	Each
	125 Volts	250 Volts			
Single-Pole	10	5	One $\frac{3}{4}$ -Inch Top and Bottom	ESW2113	\$10.70
2-Pole	10	10		ESW2123	10.80
3-Way	10	5		ESW2133	11.10
*Single-Pole	10	5		ESW2153	12.10
†Single-Pole	10	5		ESW2163	12.10

## 2-Gang

Single-Pole	10	5	Two $\frac{3}{4}$ -Inch Top and One $\frac{3}{4}$ -Inch Bottom	ESW2213	\$15.45
2-Pole	10	10		ESW2223	15.65
3-Way	10	5		ESW2233	16.25
*Single-Pole	10	5		ESW2253	18.25
†Single-Pole	10	5		ESW2263	18.25

## 3-Gang

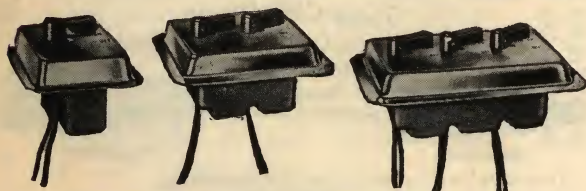
Single-Pole	10	5	Two $\frac{3}{4}$ -Inch and One 1-Inch at Top and One 1-Inch at Bottom	ESW3313	\$21.70
2-Pole	10	10		ESW3323	22.00
3-Way	10	5		ESW3333	22.90
*Single-Pole	10	5		ESW3353	25.90
†Single-Pole	10	5		ESW3363	25.90

\*Momentary contact: M.O., normally open.

†Momentary contact: M.C., normally closed.

## Type ERS Replacement Switch Units

For Replacement of Non-Explosion-Proof Switches



An explosion-proof switch which can be used to replace ordinary wall switches previously installed.

Includes tumbler switch with sealed housing and cover.

Style	AMPERES		Single-Gang	No.	Each	2-Gang	No.	Each	3-Gang	No.	Each
	125 Volts	250 Volts									
Single-Pole	10	5	ERS41	\$9.00		ERS412	\$13.25		ERS413	\$18.00	
2-Pole	10	10	ERS42	9.10		ERS422	13.45		ERS423	18.30	
3-Way	10	5	ERS43	9.40		ERS432	14.05		ERS433	19.20	
†Single-Pole	10	5	ERS45	10.40		ERS452	16.05		ERS453	22.20	
†Single-Pole	10	5	ERS46	10.40		ERS462	16.05		ERS463	22.20	

\*Combinations of different switches can be furnished if specified when ordering.

†Momentary contact: M.O., normally open.

†Momentary contact: M.C., normally closed.

Available in 4 and 5-gang and in plain finished covers.

## Delayed Action Arktite Plugs and Receptacles

Schedule CE

## Explosion-Proof

## Type CES Receptacle Equipment

Style 2—Grounded through Extra Pole and Shell  
230-460 Volts, 60 Cycles, A.C.

Includes Condulet, receptacle, and receptacle housing.

Has three hubs, two of which are furnished with threaded pipe plugs.

STYLE	Wire	Pole	Phase	Maximum Horsepower	Maximum Amperes	Hub Size Inches	No.	Each
2	3	1		$1\frac{1}{2}$ , $1\frac{1}{2}$	7, 30	$\frac{3}{4}$	CES2213	\$23.50
3	4	3		1, 3	7, 30	$\frac{3}{4}$	CES2214	25.00
2	3	1		3	30, 60	$1\frac{1}{4}$	CES4233	29.50
3	4	3		5	30, 60	$1\frac{1}{4}$	CES4234	33.00

## Type CPH Plugs

230-460 Volts



For Type CES receptacle equipment. Made of aluminum.

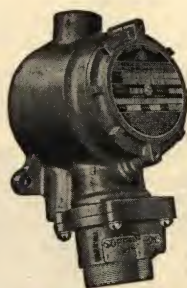
Furnished with cable grip and rubber bushing.

STYLE	Wire	Pole	Phase	Maximum Horsepower	Maximum Amperes	Cable Diam. Inches	No.	Each
2	3	1		$1\frac{1}{2}$ , $1\frac{1}{2}$	7, 30	.375 to .500	CPH7413	\$11.00
2	3	1		$1\frac{1}{2}$ , $1\frac{1}{2}$	7, 30	.500 to .875	CPH7713	11.00
3	4	3		1	7, 30	.375 to .500	CPH7414	11.75
3	4	3		3	7, 30	.500 to .875	CPH7714	11.75
2	3	1		3	30, 60	.500 to .875	CPH7733	13.00
2	3	1		3	30, 60	.875 to 1.188	CPH7933	13.00
3	4	3		5	30, 60	.500 to .875	CPH7734	14.00
3	4	3		5	30, 60	.875 to 1.188	CPH7934	14.00

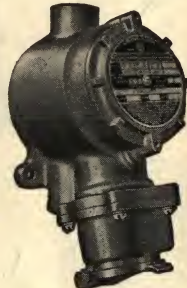
## FSQ Series Interlocked Plug Receptacle and Switch Condulets

Explosion-Proof and Dust-Tight

Class I, Groups C and D; Class II, Group G; and Classes III and IV



Type FSQC, with Threaded Housing



Type FSQC, with Spring Door

Furnished with tumbler type switch and receptacle, either with threaded housing or spring door housing.

Takes FP and BP plugs.



Type FSQ



Type FSQC

## With Threaded Housing

30-Ampere, 250-V. A.C. or D.C.  
2-Hp., 230-V., 1-Hp., 460-V. A.C.

STYLE	Wire	Pole	*Form	Hub Size Inches	Type FSQ	No.	Each	Type FSQC	No.	Each
2	3	E		$\frac{3}{4}$	FSQ232	\$23.00		FSQC232	\$23.00	
2	3	E		1	FSQ332	23.20		FSQC332	23.20	
30-Amp., 250-V. or 20-Amp., 460-V. A.C. or D.C. 2-Hp., 230-V. or 460-V., 3-Phase A.C.										
3	4	F		$\frac{3}{4}$	FSQ233	\$26.00		FSQC233	\$26.00	
3	4	F		1	FSQ333	26.20		FSQC333	26.20	

## With Spring Door Housing

30-Ampere, 250-V. A.C. or D.C.  
2-Hp., 230-V., 1-Hp., 460-V. A.C.

2	3	B		$\frac{3}{4}$	FSQ230	\$23.00		FSQC230	\$23.00	
2	3	B		1	FSQ330	23.20		FSQC330	23.20	

\*Order by number.



## Plugs for FSQ Series Condulets

Schedule CE

Furnished with cable grip and rubber bushing. Grounded through extra pole and shell. Made of cast aluminum.



Type FP



Type BP

## Type FP—For Threaded Housings

Wire	Pole	Cable Diam., In.	No.	Each
2	3	.500 to .875	FP323	\$6.00
3	4	.500 to .875	FP334	7.00

## Type BP—For Spring Door Housings

2	3	.375 to .500	BP49	\$6.00
2	3	.500 to .625	BP59	6.00
2	3	.625 to .750	BP69	6.00
2	3	.750 to .875	BP79	6.00

## Type EYS Sealing Condulets

## Explosion-Proof

For Sealing Vertical Runs of Conduit

In hazardous locations, Class I, the conduit system should be sectionalized by sealing at frequent intervals. Furnished with pipe plug.



## With Female Hub Top and Bottom

Hub Size Inches	Length Inches	Turn- ing Radius Inches	Approx. Internal Volumes Cu. In.	No.	Each
1/2	3 3/32	1 5/8	1	EYS1	\$ .65
3/4	3 11/16	1 23/32	1 3/4	EYS2	.80
1	4 3/16	2 3/8	4	EYS3	1.05
1 1/4	5 1/16	1 23/32	6 1/2	EYS4	1.30
1 1/2	5 1/2	2 1/16	8 1/2	EYS5	1.95
2	6 1/4	2 3/16	18	EYS6	2.55
2 1/2	7 1/2	2 11/16	30	EYS7	4.00
3	8 1/2	3 3/16	64	EYS8	5.00

## \*Male and Female Hub

Hub Size Inches	Length Inches	Turn- ing Radius Inches	Approx. Internal Volumes Cu. In.	No.	Each
1/2	3 3/32	1 5/8	1	EYS16	\$ .65
3/4	3 11/16	1 23/32	1 3/4	EYS26	.80
1	4 3/16	2 3/8	4	EYS36	1.05
1 1/4	5 1/16	1 23/32	6 1/2	EYS46	1.30
1 1/2	5 1/2	2 1/16	8 1/2	EYS56	1.95
2	6 1/4	2 3/16	18	EYS66	2.55
2 1/2	7 1/2	2 11/16	30	EYS76	4.00
3	8 1/2	3 3/16	64	EYS86	5.00

## Type EZS Sealing Condulets

## Explosion-Proof

For Sealing Vertical or Horizontal Runs of Conduit

Condulets have round cover openings and provide ample room for placing dams around and between conductors.



Hub Size Inches	Length Inches	Turn- ing Radius Inches	Approx. Int. Vol. Cu. In.	No.	Each
1/2	4 3/16	1 3/4	5 1/2	EZS1	\$1.15
3/4	4 3/16	1 3/4	6	EZS2	1.45
1	4 15/16	2 1/16	9	EZS3	1.85
1 1/4	5 1/16	2 3/16	12 1/2	EZS4	2.35
1 1/2	5 3/16	2 1/4	14	EZS5	3.50
2	7 1/16	3 3/16	46	EZS6	4.60
2 1/2	7 13/16	3 3/8	55	EZS7	7.40
3	8 5/8	3 3/4	88	EZS8	10.70

## \*Male and Female Hub

Hub Size Inches	Length Inches	Turn- ing Radius Inches	Approx. Int. Vol. Cu. In.	No.	Each
1/2	4 3/16	1 3/4	5 1/2	EZS16	\$1.15
3/4	4 3/16	1 3/4	6	EZS26	1.45
1	4 15/16	2 1/16	9	EZS36	1.85
1 1/4	5 1/16	2 3/16	12 1/2	EZS46	2.35
1 1/2	5 3/16	2 1/4	14	EZS56	3.50
2	7 1/16	3 3/16	46	EZS66	4.60
2 1/2	7 13/16	3 3/8	55	EZS76	7.40
3	8 5/8	3 3/4	88	EZS86	10.70

\*Male and female hub listings include a close conduit nipple which may be used interchangeably in top or bottom hub.

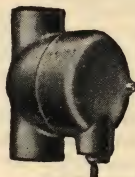
†With cover removed.

## Type ECD Inspection and Drain Sealing Condulets

Schedule CE

## Explosion-Proof

For Sealing Vertical Runs of Conduit



Provides conduit systems in Class I hazardous locations with a means by which the systems can be drained of water, if there is a likelihood of water accumulation.

## Inspection Seal Condulets

Hub Size Inches	Length Inches	*Turning Radius Inches	Internal Volume Cu. In.	No.	Each
1/2	4 3/16	2 1/16	5	EZD10	\$1.35
3/4	4 3/16	2 3/16	6	EZD20	1.70
1	4 15/16	2 1/16	10	EZD30	2.20
1 1/4	4 15/16	2 3/16	11	EZD40	2.75
1 1/2	5 3/16	2 11/16	13	EZD50	4.10
2	7 1/4	3 11/16	40	EZD60	5.40
2 1/2	8	3 7/8	50	EZD70	6.50

## Drain Seal Condulets

1/2	4 3/16	2 1/16	5	EZD111	\$2.85
3/4	4 3/16	2 3/16	6	EZD211	3.20
1	4 15/16	2 1/16	10	EZD311	3.70
1 1/4	4 15/16	2 3/16	11	EZD411	4.25
1 1/2	5 3/16	2 11/16	13	EZD511	5.60
2	7 1/4	3 11/16	40	EZD611	6.90
2 1/2	8	3 7/8	50	EZD711	8.00

\*With cover removed.

## Chico A Sealing Compound

Not affected by gasoline, alcohol, acetone, etc.

Put up in air-tight and moisture proof packages.

No.	A2	A3	A4	A23	A24	A44	A8
Each	\$ .40	.65	1.00	1.10	1.90	1.80	3.60
*Volume...cu. in.	8	16	16	32	32	64	1.28
Package No....	2	3	4	23	24	44	8
Weight...pounds	1/2	1	†1	2	†2	4	8

\*Number of cubic inches volume this amount fills when set.

†With 3/4-ounce Chico X Fiber.

†With 2-ounce Chico X Fiber.

## Chico X Fiber

No.	X1	X2	X3	X4	X5	X6	X7
Per Package.....	\$ .25	.40	.50	.90	1.70	2.90	4.80
Amount Grams...	10.6	21.2	28.3	56.5	113.0	226.0	452.0
Package No.....	1	2	3	4	5	6	7
Weight...ounces	3/8	3/4	1	2	4	8	16

Approximate amount of fiber required per Condulet hub:

Size Hub...inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Grams Required..	4	6	8	10	15	21	40	90

## Type ECD Drain and Breather Valves

## Explosion-Proof

Class I, Group D



For Water Only Automatic



For Water Under Oil, Manual



For Air Only Automatic

Type ECD breather valve is similar to Type ECD drain but is designed to be installed in the top of explosion-proof housings, allowing air to pass in or out as conditions vary. The labyrinth handle is a rotating cap to prevent dirt from interfering with the action of the valve.

Size Pipe Thread Inches	For Water Only	For Water Under Oil	For Air Only
	No.	No.	No.
1/4	ECD282	ECD282	ECD283
3/8	ECD381	ECD382	ECD383
1/2	ECD11	ECD12	ECD13
	Each	Each	Each
1/4	\$1.65	\$1.65	\$1.65
3/8	1.65	1.65	1.65
1/2	1.65	1.65	1.65



## Type EC Flexible Couplings

Schedule CE

Explosion-Proof, Dust-Tight, and Weatherproof  
Class I Group D, and Classes II and III

For use in hazardous locations where it is necessary to employ flexible fittings, as at motor terminals. Suitable for switchboard and other wiring in refineries, for gasoline pumps, and explosion-proof floodlights.

Also watertight, and are, therefore, suitable for use in damp locations or under water, such as connections to underwater floodlights and fountain lights.

## Type ECJ

## Type ECG

## Type ECH



Two Female Nipples

One Female Nipple  
One Male Nipple

Two Male Nipples

Type ECJ			Type ECG			Type ECH		
Size Inches	No.	Each	No.	Each		No.	Each	
1/2	ECJ14	\$4.75	ECG14	\$4.75	7 1/2	ECH14	\$4.75	8
3/4	ECJ24	5.70	ECG24	5.70	7 1/2	ECH24	5.70	8
10 Inches								
1/2	ECJ110	6.25	ECG110	6.25	13 1/2	ECH110	6.25	14
3/4	ECJ210	7.80	ECG210	7.80	13 1/2	ECH210	7.80	14
1	ECJ310	13.50	ECG310	13.50	14 1/2	ECH310	13.50	14 1/2
18 Inches								
1/2	ECJ118	8.25	ECG118	8.25	21 1/2	ECH118	8.25	22
3/4	ECJ218	10.60	ECG218	10.60	21 1/2	ECH218	10.60	22
1	ECJ318	17.50	ECG318	17.50	22 1/2	ECH318	17.50	22 1/2
1 1/4	ECJ418	25.40	ECG418	25.40	23 1/4	ECH418	25.40	23 1/8
1 1/2	ECJ518	34.30	ECG518	34.30	23 3/8	ECH518	34.30	23 3/8
2	ECJ618	44.00	ECG618	44.00	22 3/8	ECH618	44.00	22 3/8
27 Inches								
1/2	ECJ127	10.50	ECG127	10.50	30 1/2	ECH127	10.50	31
3/4	ECJ227	13.75	ECG227	13.75	30 1/2	ECH227	13.75	31
1	ECJ327	22.00	ECG327	22.00	31 1/2	ECH327	22.00	31 1/2
1 1/4	ECJ427	31.25	ECG427	31.25	32 1/4	ECH427	31.25	32 1/8
1 1/2	ECJ527	41.50	ECG527	41.50	32 3/8	ECH527	41.50	32 3/8
2	ECJ627	53.00	ECG627	53.00	31 3/4	ECH627	53.00	31 3/8
36 Inches								
1/2	ECJ136	12.75	ECG136	12.75	39 1/2	ECH136	12.75	40
3/4	ECJ236	16.90	ECG236	16.90	39 1/2	ECH236	16.90	40
1	ECJ336	26.50	ECG336	26.50	40 1/2	ECH336	26.50	40 1/2
1 1/4	ECJ436	37.10	ECG436	37.10	41 1/4	ECH436	37.10	41 1/8
1 1/2	ECJ536	48.70	ECG536	48.70	41 5/8	ECH536	48.70	41 3/8
2	ECJ636	62.00	ECG636	62.00	42 1/4	ECH636	62.00	40 3/8

## Type ECL

## Type ECK

One Female Union  
One Female NippleOne Female Union  
One Male Nipple

Type ECL			Type ECK		
Size Inches	No.	Each	No.	Each	
1/2	ECL14	\$5.15	ECK14	\$5.15	8 1/4
3/4	ECL24	6.10	ECK24	6.10	8 1/4
10 Inches					
1/2	ECL110	\$6.65	ECK110	\$6.65	14 1/4
3/4	ECL210	8.20	ECK210	8.20	14 1/4
1	ECL310	14.50	ECK310	14.50	14 1/2
18 Inches					
1/2	ECL118	\$8.65	ECK118	\$8.65	22 1/4
3/4	ECL218	11.00	ECK218	11.00	22 1/4
1	ECL318	18.50	ECK318	18.50	22 1/2
1 1/4	ECL418	26.90	ECK418	26.90	23 1/8
1 1/2	ECL518	36.05	ECK518	36.05	23 1/8
2	ECL618	47.50	ECK618	47.50	23 5/8
27 Inches					
1/2	ECL127	\$10.90	ECK127	\$10.90	31 1/4
3/4	ECL227	14.15	ECK227	14.15	31 1/4
1	ECL327	23.00	ECK327	23.00	31 1/2
1 1/4	ECL427	32.75	ECK427	32.75	32 1/8
1 1/2	ECL527	43.25	ECK527	43.25	32 1/8
2	ECL627	56.50	ECK627	56.50	32 5/8
36 Inches					
1/2	ECL136	\$13.15	ECK136	\$13.15	40 1/4
3/4	ECL236	17.30	ECK236	17.30	40 1/4
1	ECL336	27.50	ECK336	27.50	41 1/8
1 1/4	ECL436	38.60	ECK436	38.60	41 1/8
1 1/2	ECL536	50.45	ECK536	50.45	41 1/8
2	ECL636	65.50	ECK636	65.50	41 5/8

Also available in standard lengths of 6, 8, 12, 15, 21, 24, 30 and 33 inches.

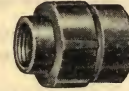
Condulet Unions  
Explosion-Proof and Dust-Tight

## Type UNY—Male



Size Inches	Length	Diam.	No.	Each
1/2	2 1/16	1 1/2	UNY105	\$1.50
3/4 to 1/2	2 1/8	1 3/4	UNY215	.50
3/4	2 1/8	1 3/4	UNY205	.65
1	2 1/8	2 1/16	UNY305	.95
1 1/4	2 15/16	2 1/16	UNY405	1.90
1 1/2	3 1/8	3 1/8	UNY505	2.30
2	3 1/4	3 1/16	UNY605	3.65

## Type UNF—Female

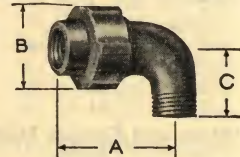


Size Inches	Length	Diam.	No.	Each
1/2	1 3/4	1 1/2	UNF105	\$1.50
3/4 to 1/2	1 3/4	1 3/4	UNF215	.50
3/4	1 3/4	1 3/4	UNF205	.65
1	1 15/16	2 1/16	UNF305	.95
1 1/4	2	2 1/16	UNF405	1.90
1 1/2	2 3/16	3 1/8	UNF505	2.30

## Type UNL 90° Angle Unions

Schedule CE

Explosion-Proof and Dust-Tight



For connecting conduit to a Condulet.

Size Inches	A	B	C	No.	Each
1/2 to 3/4	2 3/4	1 3/4	1 5/8	UNL125	\$1.40
3/4 to 1/2	2 1/8	1 3/4	1 5/8	UNL215	1.40
3/4 to 3/4	2 3/8	1 3/4	1 5/8	UNL205	1.40

\*Size of right end is given first.

## Type UNA Connectors and Unions

A convenient coupling or union for conduit joints made at angles from 90° to 180°. A single clamping nut provides a union feature as well as easy adjustment to required angles.

Unless a Type UNA universal union is placed at or near an outlet, or unless it is installed at an angle of about 140° to 180°, it may prove to be difficult to fish wires through union. For this reason, these devices are not approved as conduit unions for general use.

## Box Connectors—Male

For use only if adjacent to a Condulet.  
Explosion-proof and dust-tight.

Size Inches	Length	Width	No.	Each
1/2	4	2 1/2	UNA16	\$1.45
3/4	4 1/2	2 7/8	UNA26	1.75
1	5 1/4	3 1/2	UNA36	2.00

## Universal Unions—Female



Size Inches	Length	Width	No.	Each
1/2	3 3/8	2 1/2	UNA1	\$1.30
3/4	3 3/8	2 7/8	UNA2	1.45
1	4 5/8	3 1/2	UNA3	1.75



## R &amp; S Watertight Air Break Cast Circuit Breakers



Frame ratings are from 15 to 50 amperes, 15 to 100 amperes, 50 to 100 amperes, 70 to 125 to 600 amperes either 250 volts a.c.—125/250 volts d.c. or 600 volts a.c.—250 volts d.c. The maximum rating of each frame size indicates the maximum continuous current-carrying capacity of that frame. On all frames except the 15 to 50-ampere and the 15 to 100-ampere sizes, the thermal and magnetic trip is built into a separate unit, so that the breaker rating can be changed by changing the trip unit. Within the capacity limitations of the various frames, trip units are available in ratings corresponding to standard wire and cable sizes. The breaker unit comes complete with the trip unit assembled to it and requires no adjusting on installation.

Made of cast iron. Corrosion resisting finish.

Furnished with or without circuit breaker.

Enclosures are provided with heavy pads for conduit tapping. When ordering, specify size and location of outlets. Catalog numbers determine size of frame, ampere trip rating and voltage, and should also be given.

## 50-Ampere Frame With Non-Interchangeable Trip—5000 Amp. I. R. C.

Amp.	Single Pole 250 V. A.C.—125 V. D.C.			2-Pole 250 V. A.C.—125/250 V. D.C.			3 Pole 250 V. A.C.—125/250 V. D.C.		
	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.
15	WP4296-15	\$23.00		WP4297-15	\$29.50		WP4258-15	\$41.00	
20	WP4296-20	23.00		WP4297-20	29.50		WP4258-20	41.00	
25	WP4296-25	23.00	WP4296 \$18.00	WP4297-25	29.50	WP4296 \$18.00	WP4258-25	41.00	WP4258 \$25.00
35	WP4296-35	24.50		WP4297-35	31.00		WP4258-35	44.00	
50	WP4296-50	24.50		WP4297-50	31.00		WP4258-50	44.00	

## 100 Ampere Frame With Non-Interchangeable Trip—15,000 Amp. I. R. C.

Amp.	2 Pole 250 V. A.C.—125/250 V. D.C.			3 Pole 250 V. A.C.—125/250 V. D.C.			600 V. A.C.		
	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.
15	WP42092-15	\$47.00		WP42096-15	\$56.50		WP42572-15	\$51.50	WP42576-15 \$63.00
20	WP42092-20	47.00		WP42096-20	56.50		WP42572-20	51.50	WP42576-20 63.00
25	WP42092-25	47.00		WP42096-25	56.50	WP4209 \$30.00	WP42572-25	51.50	WP42576-25 63.00
35	WP42092-35	49.25		WP42096-35	58.75		WP42572-35	55.00	WP42576-35 66.50
50	WP42092-50	49.25		WP42096-50	58.75		WP42572-50	55.00	WP42576-50 66.50
70	WP42092-70	56.00		WP42096-70	66.00		WP42572-70	64.00	WP42576-70 74.00
90	WP4209A2-90	65.00		WP4209A6-90	75.00	WP4209A 39.00	WP4257A2-90	73.00	WP4257A6-90 83.00
100	WP4209A2-100	65.00		WP4209A6-100	75.00		WP4257A2-100	73.00	WP4257A6-100 83.00

## 100 Ampere Frame with Interchangeable Trip Units—15,000 Amp. I. R. C.

Amp.	2 Pole 250 V. A.C.—125/250 V. D.C.			3 Pole 250 V. A.C.—125/250 V. D.C.			600 V. A.C.		
	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.
50	WP42192-50	\$122.00		WP42196-50	\$130.00		WP42592-50	\$132.00	WP42596-50 \$145.00
70	WP42192-70	122.00		WP42196-70	130.00	WP4219 \$85.00	WP42592-70	132.00	WP42596-70 145.00
90	WP42192-90	122.00		WP42196-90	130.00		WP42592-90	132.00	WP42596-90 145.00
100	WP42192-100	122.00		WP42196-100	130.00		WP42592-100	132.00	WP42596-100 145.00

## 225 Ampere Frame With Interchangeable Trip Units—15,000 Amp. I. R. C.

Amp.	2 Pole 250 V. A.C.—125/250 V. D.C.			3 Pole 250 V. A.C.—125/250 V. D.C.			600 V. A.C.		
	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.
70	WP42292-70	\$190.00		WP42296-70	\$205.00		WP42692-70	\$210.00	WP42696-70 \$230.00
90	WP42292-90	190.00		WP42296-90	205.00		WP42692-90	210.00	WP42696-90 230.00
100	WP42292-100	190.00		WP42296-100	205.00		WP42692-100	210.00	WP42696-100 230.00
125	WP42292-125	190.00		WP42296-125	205.00	WP4229 \$100.00	WP42692-125	210.00	WP42696-125 230.00
150	WP42292-150	190.00		WP42296-150	205.00		WP42692-150	210.00	WP42696-150 230.00
175	WP42292-175	190.00		WP42296-175	205.00		WP42692-175	210.00	WP42696-175 230.00
200	WP42292-200	190.00		WP42296-200	205.00		WP42692-200	210.00	WP42696-200 230.00
225	WP42292-225	190.00		WP42296-225	205.00		WP42692-225	210.00	WP42696-225 230.00

## 600 Ampere Frame With Interchangeable Trip Units—25,000 Amp. I. R. C.

Amp.	2 Pole 250 V. A.C.—125/250 V. D.C.			3 Pole 250 V. A.C.—125/250 V. D.C.			600 V. A.C.		
	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.	COMPLETE BREAKER AND ENCLOSURE No.	Each	*ENCLOSURE WITHOUT BREAKER No.
125	WP42392-125	\$460.00		WP42396-125	\$490.00		WP42792-125	\$540.00	WP42796-125 \$570.00
150	WP42392-150	460.00		WP42396-150	490.00		WP42792-150	540.00	WP42796-150 570.00
175	WP42392-175	460.00		WP42396-175	490.00		WP42792-175	540.00	WP42796-175 570.00
200	WP42392-200	460.00		WP42396-200	490.00		WP42792-200	540.00	WP42796-200 570.00
225	WP42392-225	460.00		WP42396-225	490.00		WP42792-225	540.00	WP42796-225 570.00
250	WP42392-250	460.00		WP42396-250	490.00		WP42792-250	540.00	WP42796-250 570.00
275	WP42392-275	460.00		WP42396-275	490.00		WP42792-275	540.00	WP42796-275 570.00
300	WP42392-300	460.00		WP42396-300	490.00	WP4239 \$220.00	WP42792-300	540.00	WP42796-300 570.00
325	WP42392-325	460.00		WP42396-325	490.00		WP42792-325	540.00	WP42796-325 570.00
350	WP42392-350	460.00		WP42396-350	490.00		WP42792-350	540.00	WP42796-350 570.00
400	WP42392-400	460.00		WP42396-400	490.00		WP42792-400	540.00	WP42796-400 570.00
450	WP42392-450	500.00		WP42396-450	530.00		WP42792-450	590.00	WP42796-450 620.00
500	WP42392-500	500.00		WP42396-500	530.00		WP42792-500	590.00	WP42796-500 620.00
550	WP42392-550	500.00		WP42396-550	530.00		WP42792-550	590.00	WP42796-550 620.00
600	WP42392-600	500.00		WP42396-600	530.00		WP42792-600	590.00	WP42796-600 620.00

\*Customer's breakers will be assembled in the above housing at an additional charge.

†Can be furnished in No. WP4209 or WP4257 enclosure (small size) at \$9.00 reduction in list.

†Can be furnished in No. WP4209A or WP4257A enclosure (large size) at \$9.00 list additional.



## R&amp;S Air Break Circuit Breaker Cabinets

Vaportight and Dust-Tight

Class II, Groups E, F, and G



No. CBC615

Furnished with terminal block, on which is mounted a neutral bus with wire terminals, so that circuit breakers may be used independently or as a panel board.

Enclosure is made of cast iron with corrosion resisting finish.

Outlets: maximum, 2 inches. Specify size and location when ordering.

Can be furnished with 35-ampere or 50-ampere breakers at additional cost.

## Type CBC

With Single-Pole, 125 Volts D.C.—250 Volts A.C. Branch Circuit Breakers

No. of Circuit Breakers	15 Amperes		20 Amperes		25 Amperes	
	No.	Each	No.	Each	No.	Each
2	CBC215	\$45.00	CBC220	\$45.00	CBC225	\$45.00
3	CBC315	60.00	CBC320	60.00	CBC325	60.00
4	CBC415	75.00	CBC420	75.00	CBC425	75.00
5	CBC515	85.00	CBC520	85.00	CBC525	85.00
6	CBC615	90.00	CBC620	90.00	CBC625	90.00

## Type DBC

With 2-Pole, 250 Volt Branch Circuit Breakers

2	DBC215	\$70.00	DBC220	\$70.00	DBC225	\$70.00
3	DBC315	80.00	DBC320	80.00	DBC325	80.00

R & S Watertight Connectors  
Standard ServiceNo. 3720  
Male EndNo. 3913  
Female End10 Amperes, 440 Volts A.C.—250 Volts D.C.  
20 Amperes, 125 Volts D.C.

Style	Wire	Pole	Max. Cable Inches	COMPLETE MALE AND FEMALE		MALE END ONLY		FEMALE END ONLY	
				No.	Each	No.	Each	No.	Each
*2	2		2 1/8	3902	\$6.50	3710	\$3.00	3912	\$3.50
2	3		2 1/8	3903	7.50	3720	3.50	3913	4.00
3	4		2 1/8	3904	8.50	3730	4.00	3914	4.50
20 Amperes, 440 Volts A.C. 30 Amperes, 250 Volts D.C.									
*2	2		1 1/16	3922	\$7.50	3740	\$3.50	3932	\$4.00
2	3		1 1/16	3923	8.50	3750	4.00	3933	4.50
3	4		1 1/16	3924	9.50	3760	4.50	3934	5.00

\*Has no provision for equipment grounding. All others have equipment ground through separate pole.

## R &amp; S Type A Cable Connectors

15 to 200 Amperes—2, 3, and 4-Wire—Polarized  
250 Volts D.C.—440 Volts A.C.

15 Amperes

Style	No.	Complete Connector		Male End Only		Female End Only	
		No.	Each	No.	Each	No.	Each
2-W. 2-P.	3202		\$9.30	3106	\$3.90	3206	\$5.40
†2-W. 3-P.	3203		10.50	3107	4.50	3207	6.00
3-W. 3-P.	3203W		10.50	3107W	4.70	3207W	6.20
†3-W. 4-P.	3204		11.70	3108	5.10	3208	6.60
4-W. 4-P.	3204W		12.10	3108W	5.30	3208W	6.80
30 Amperes							
2-W. 2-P.	3212		\$9.90	3116	\$3.90	3216	\$6.00
†2-W. 3-P.	3213		11.10	3117	4.50	3217	6.60
3-W. 3-P.	3213W		11.50	3117W	4.70	3217W	6.80
†3-W. 4-P.	3214		12.30	3118	5.10	3218	7.20
4-W. 4-P.	3214W		12.70	3118W	5.30	3218W	7.40
60 Amperes							
2-W. 2-P.	3222		\$15.60	3126	\$5.40	3226	\$10.20
†2-W. 3-P.	3223		16.80	3127	6.00	3227	10.80
3-W. 3-P.	3223W		17.30	3127W	6.25	3227W	11.05
†3-W. 4-P.	3224		18.00	3128	6.60	3228	11.40
4-W. 4-P.	3224W		18.50	3128W	6.85	3228W	11.65
100 Amperes							
2-W. 2-P.	3232		\$34.00	3136	\$12.00	3236	\$22.00
†2-W. 3-P.	3233		36.00	3137	13.00	3237	23.00
3-W. 3-P.	3233W		38.00	3137W	14.00	3237W	24.00
†3-W. 4-P.	3234		38.00	3138	14.00	3238	24.00
4-W. 4-P.	3234W		40.00	3138W	15.00	3238W	25.00
200 Amperes							
2-W. 2-P.	3242		\$90.00	3146	\$30.00	3246	\$60.00
†2-W. 3-P.	3243		100.00	3147	35.00	3247	65.00
3-W. 3-P.	3243W		104.00	3147W	37.00	3247W	67.00
†3-W. 4-P.	3244		110.00	3148	40.00	3248	70.00
4-W. 4-P.	3244W		114.00	3148W	42.00	3248W	72.00

†Equipment grounded through separate pole. All others have equipment ground through shell only.

## R &amp; S Type B Watertight Cable Connectors

15 to 200 Amperes—2, 3, and 4-Pole—Polarized  
250 Volts D.C.—440 Volts A.C.

15 Amperes

Style	No.	Complete Connector		Male End Only		Female End Only	
		No.	Each	No.	Each	No.	Each
*2-W. 2-P.	3402		\$14.70	3306	\$6.60	3406	\$8.10
2-W. 3-P.	3403		15.90	3307	7.20	3407	8.70
3-W. 4-P.	3404		17.10	3308	7.80	3408	9.30
30 Amperes							
*2-W. 2-P.	3412		\$15.60	3316	\$6.60	3416	\$9.00
2-W. 3-P.	3413		16.80	3317	7.20	3417	9.60
3-W. 4-P.	3414		18.00	3318	7.80	3418	10.20
60 Amperes							
*2-W. 2-P.	3422		\$23.40	3326	\$8.10	3426	\$15.30
2-W. 3-P.	3423		24.60	3327	8.70	3427	15.90
3-W. 4-P.	3424		25.80	3328	9.30	3428	16.50
100 Amperes							
*2-W. 2-P.	3432		\$39.00	3336	\$16.00	3436	\$23.00
2-W. 3-P.	3433		41.00	3337	17.00	3437	24.00
3-W. 4-P.	3434		43.00	3338	18.00	3438	25.00
200 Amperes							
*2-W. 2-P.	3442		\$100.00	3346	\$35.00	3446	\$65.00
2-W. 3-P.	3443		110.00	3347	40.00	3447	70.00
3-W. 4-P.	3444		120.00	3348	45.00	3448	75.00

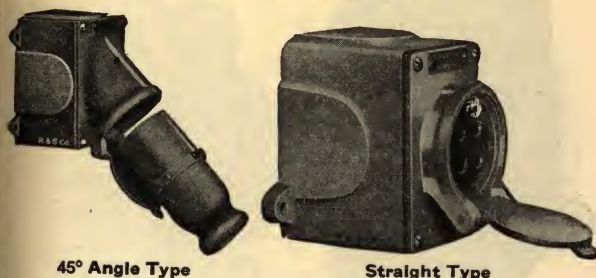
\*Has no provision for equipment grounding. All others have equipment ground through separate pole.

Plugs (male ends) listed will also fit wall receptacles. These connectors can also be furnished in 600 volts.



## Type A R&S Weathertight Angle Type Receptacles

2, 3, and 4-Wire—Polarized  
250 Volts D.C.—440 Volts A.C.



45° Angle Type

Straight Type

Box and receptacle housing are heavy castings provided with gaskets and a cast, hinged spring flap cover.

Has positive polarization to insure assembly of contact members. Provision is made for grounding to meet Underwriters' requirements.

Plug housing is light in weight and easy to handle.

Outlets: maximum, 15 amperes, 1-inch; 30-60 amperes, 1½-inch; 100 amperes, 2½-inch; 200 amperes, 3-inch.

Specify size and location of outlets when ordering.

Corrosion resisting finish.

Also available for 600 volts a.c.

Straight type: numbers shown are for 45° angle type; for straight type, add prefix RA to number.

### 15 Amperes

STYLE	Wire	Pole	Receptacles without Plugs		No.	Each	2-Gang		No.	Each	Plugs Only	
			Single-Gang	No.			2-Gang	No.			No.	Each
2	2		3102		3109	\$5.40		3106		\$3.90		
*2	3		3103		3110	6.00		3107		4.50		
3	3		3103W		3110W	6.00		3107W		4.50		
*3	4		3104		3111	6.60		3108		5.10		
4	4		3104W		3111W	6.60		3108W		5.30		

### 30 Amperes

2	2		3112		3119	\$6.00		3116		\$3.90		
*2	3		3113		3120	6.60		3117		4.50		
3	3		3113W		3120W	6.60		3117W		4.70		
*3	4		3114		3121	7.20		3118		5.10		
4	4		3114W		3121W	7.20		3118W		5.30		

### 60 Amperes

2	2		3122		3129	\$10.20		3126		\$5.40		
*2	3		3123		3130	10.80		3127		6.00		
3	3		3123W		3130W	10.80		3127W		6.25		
*3	4		3124		3131	11.40		3128		6.60		
4	4		3124W		3131W	11.40		3128W		6.85		

### 100 Amperes

2	2		3132		3139	\$22.00		3136		\$12.00		
2	3		3133		3140	23.00		3137		13.00		
*3	3		3133W		3140W	23.00		3137W		14.00		
3	4		3134		3141	24.00		3138		14.00		
*4	4		3134W		3141W	24.00		3138W		15.00		

### 200 Amperes

2	2		3142		3149	\$60.00		3146		\$30.00		
*2	3		3143		3150	65.00		3147		35.00		
3	3		3143W		3150W	65.00		3147W		37.00		
*3	4		3144		3151	70.00		3148		40.00		
4	4		3144W		3151W	70.00		3148W		42.00		

\*Equipment grounded through separate pole; all others have equipment ground through shell only.

## Type B R&S Watertight Angle Type Receptacles

2, 3, and 4-Pole—Polarized  
250 Volts D.C.—440 Volts A.C.



45° Angle Type

Straight Type

Box and receptacle housing are heavy castings provided with a screw thread to take gasketed brass cap and plug collar.

Has positive polarization to insure assembly of contact members. Provision for grounding to meet Underwriters' requirements. External rib to provide visual indication for plug insertion. Large conduit bosses and ample space for wiring.

Plug housing is light in weight and convenient to handle.

Maximum outlets: 15 amperes, 1-inch; 30-60 amperes, 1½-inch; 100 amperes, 2½-inch; 200 amperes, 3-inch.

Specify size and location of outlets when ordering.

Also available for 600 volts a.c.

Furnished with a rubber gland cable outlet.

Corrosion resisting finish.

Straight type: numbers shown are for 45° angle type receptacles; for straight type, add prefix RA to numbers.

### 15 Amperes

STYLE	Wire	Pole	Receptacles Without Plugs		No.	Each	2-Gang		No.	Each	Plugs Only	
			Single-Gang	No.			2-Gang	No.			No.	Each
*2	2		3302		3309	\$8.10		3306		\$6.60		
2	3		3303		3310	8.70		3307		7.20		
3	4		3304		3311	9.30		3308		7.80		

### 30 Amperes

*2	2		3312		3319	9.00		3316		\$6.60		
2	3		3313		3320	9.60		3317		7.20		
3	4		3314		3321	10.20		3318		7.80		

### 60 Amperes

*2	2		3322		3329	\$15.30		3326		\$8.10		
2	3		3323		3330	15.90		3327		8.70		
3	4		3324		3331	16.50		3328		9.30		

### 100 Amperes

*2	2		3332		3339	\$23.00		3336		\$16.00		
2	3		3333		3340	24.00		3337		17.00		
3	4		3334		3341	25.00		3338		18.00		

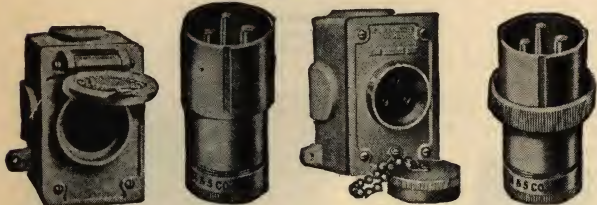
### 200 Amperes

*2	2		3342		3349	\$65.00		3346		\$35.00		
2	3		3343		3350	70.00		3347		40.00		
3	4		3344		3351	75.00		3348		45.00		

\*Have no provision for equipment grounding; all others have equipment ground through separate pole.



Types FS and FD R&S Receptacles  
and Plugs  
For Standard Service



No. 3746 Weathertight    No. 3819 Weathertight    No. 3743 Watertight    No. 3720 Watertight  
Finish: cast iron, corrosion resisting finish; cast brass, bright dip. Outlets: maximum, 1-inch 4-way; specify size and location when ordering.

		Weathertight					
		10 Amperes, 440V. A.C.—20 Amperes, 125V. D.C.			Without Plugs		
Wire	Pole	Cast Iron		Cast Brass		Plugs Only	
		With Box No. 3701	Each	With Box No. 3721	Each	No.	Each
*2	2	3745	\$3.30	3765	\$6.30	3818	\$3.00
2	3	3746	3.80	3766	6.80	3819	3.50
3	4	3747	4.30	3767	7.30	3820	4.00
		20 Amperes, 440V. A.C.—130 Amperes, 125V. D.C.					
*2	2	3755	\$4.80	3768	\$7.80	3828	\$3.50
2	3	3756	5.30	3769	8.30	3829	4.00
3	4	3757	5.80	3770	8.80	3830	4.50

		Watertight					
		10 Amperes, 440V. A.C.—20 Amperes, 125V. D.C.					
Wire	Pole	With Box No. 3701	Each	With Box No. 3721	Each		
		3742	\$3.30	3762	\$6.30	3710	\$3.00
2	3	3743	3.80	3763	6.80	3720	3.50
3	4	3744	4.30	3764	7.30	3730	4.00
		20 Amperes, 440V. A.C.—130 Amperes, 125V. D.C.					
*2	2	3752	\$4.80	3772	\$7.80	3740	\$3.50
2	3	3753	5.30	3773	8.30	3750	4.00
3	4	3754	5.80	3774	8.80	3760	4.50

\*No provision for equipment grounding. All others have equipment ground through separate pole.  
†Also rated at 30 amperes, 250 volts d.c.

Types FS & FD R&S Conduit Box Fittings



No. 3801

No. 3808

Maximum outlets, 1 inch, 4-way. Specify size and location when ordering.

Cast iron boxes have corrosion resisting finish; cast brass, bright dip. Covers and other exposed parts are finished to match boxes.

Watertight Pilot Light Indicators

Complete with 120-Volt Lamp

Description	Cast Iron		Cast Brass	
	With Box No. 3701	Each	With Box No. 3721	Each
1-Light with Clear Lens...	3801	\$5.00	3811	\$8.00
1-Light with Ruby Lens...	3801R	5.00	3811R	8.00
1-Light with Green Lens...	3801G	5.00	3811G	8.00
1-Light with Amber Lens...	3801A	5.00	3811A	8.00
2-Light, Any Above Lens...	3807	8.00	3817	11.00

Weathertight Convenience Receptacles

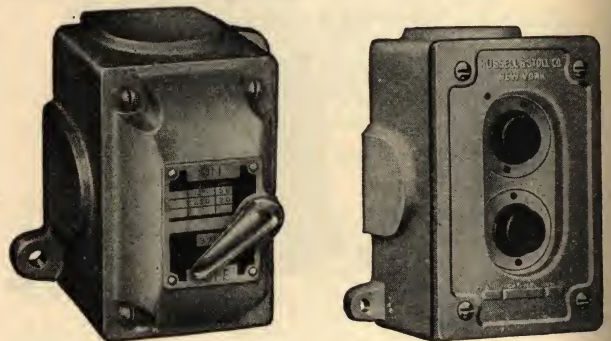
15 Amperes, 125 Volts

Description	Cast Iron		Cast Brass	
	With Box No. 3701	Each	With Box No. 3721	Each
2-Pole.....	3908	\$3.00	3918	\$6.00

Adapter plates for flush mounting.

Types FS and FD R&S Switches  
Watertight

Outlets: maximum, 1-inch, 4-way. Specify size and location when ordering. Finish: cast iron, corrosion resisting finish; cast brass, bright dip.



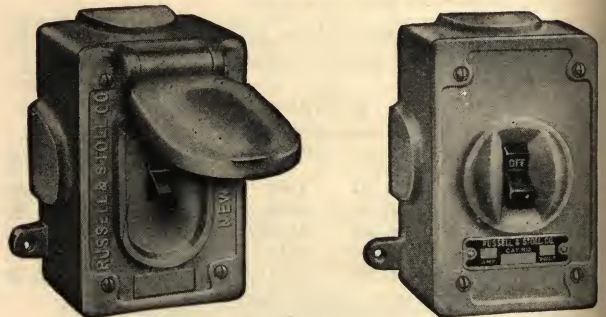
No. 3705

No. 3749

Style	Cast Iron		Cast Brass		125	250
	With Box No. 3701	Each	With Box No. 3721	Each	Volts	Volts
Single Pole.....	3705	\$4.00	3725	\$7.00	10	5
2-Pole.....	3706	5.00	3726	8.00	10	10
3-Pole.....	3707	8.00	3727	11.00	15	15
3-Way.....	3708	6.00	3728	9.00	10	5
4-Way.....	3709	10.00	3729	13.00	10	5

Push Button Station					
Start (Normally Open).....	3741	\$6.00	3751	\$9.00	.. ..
Stop (Normally Closed).....	3748	6.00	3758	9.00	.. ..
Start and Stop....	3749	7.50	3759	10.50	.. ..

Weathertight and Protected



No. 3802

No. 3832

Style	Cast Iron		Cast Brass		125	250
	With Box No. 3701	Each	With Box No. 3721	Each	Volts	Volts
Single-Pole	3802	\$4.00	3832	\$3.50	3812	\$6.50
2-Pole	3803	5.00	3833	4.50	3813	7.50
3-Pole	3804	8.00	3834	7.50	3814	10.50
3-Way	3805	6.00	3835	5.50	3815	8.50
4-Way	3806	10.00	3836	9.50	3816	12.50

\*Also available in ratings of 20 and 30 amperes. Prices on request.

Explosion-Proof Equipment

Russell & Stoll Co., Inc.

are in a position to furnish a complete line of

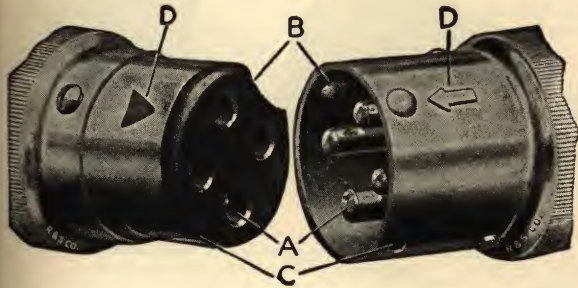
Explosion-Proof Equipment.

Lighting — Switches — Panelboards

A detailed catalog is available upon application to our nearest office.



## R & S Ever-Lok Receptacles, Plugs, and Cord Connectors



### One Large and 3 Smaller Contacts

The large (grounded) contact A will not fit into any but the one large hole A. The three smaller contacts fit into their corresponding holes. The staggered lugs B and C in the plug shell, will fit only into the corresponding staggered grooves in the shell of the connector or receptacle. (B to B only and C to C only.)

The interiors of molded bakelite are grooved to fit upset lugs on the shells so that improper assembly or alignment of the interior is impossible. Shell caps are fiber lined to prevent stray wire ends touching the shell.

Terminals of the 4-pole devices are marked X, Y, Z, and G (ground). Terminals of 3-pole devices are marked 1, 2, and G. These markings maintain identity of polarity throughout.

### Double Locking and Balanced Support

The outer shell of the plug floats on the inner shell and turns within the limits allowed by two screws in two slots on opposite sides of the shell. As the plug is inserted in a connector or receptacle, the lugs on outer shell ride diagonally down into the funnel-shaped grooves until they strike the bottom. The outer shell automatically turns on its axis by means of a spring in its base, and the lugs snap into position.

This double locking arrangement (on opposite sides of the shell) provides balanced support and prevents poor alignment.

### Locks in Place

To unlock, it is necessary to grasp the plug firmly and give it a short reverse twist to bring the lugs back to where they will pull out of the grooves. Outer shoulders are knurled to facilitate this action, but the lock is positive and the plug cannot be withdrawn without first giving it this reverse twist.

### Unit Assembly

Casings are positively grounded by double phosphor bronze springs. Equipment grounding is secured by a separate set of contacts which make first and break last (as required by Underwriters' Laboratories).

### Positive Grounding

Contacts and terminals are permanently assembled in bakelite body permitting removal of interior only as a unit for wiring. All connections are entirely enclosed, thus obviating accidental short circuits and tampering by inexperienced persons.

## R&S Ever-Lok Fusible Plugs and Connectors

3 and 4-Pole—Polarized  
20 Amperes, 250 Volts D.C.—30 Amperes, 125 Volts D.C.

For protection of branch circuit extensions or for motor overload protection of small motors.

### No. 9114 Standard N.E.C. Fusible Type Plugs

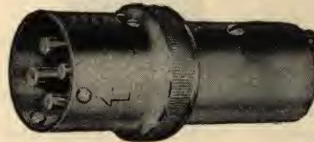


No. 9114

Safety bakelite holder for Standard N.E.C. fuses or Fusetrons.

No. 9114, 3 Fused and 1 Grounded Pole ..... each \$5.50

### No. 9144 Midget Fusible Type Plugs



For Midget fuses or Midget Fusetrons. Enclosure is made of steel. Maximum cable, 5/8-inch diameter. Cadmium plated finish.

No. 9144, 3 Fused and 1 Grounded Pole ..... each \$4.50

### No. 9124 Standard N.E.C. Fusible Connectors

3 and 4-Pole—Polarized  
20 Amperes, 250 Volts D.C.—30 Amperes, 125 Volts D.C.



Complete with safety bakelite holder for N.E.C. fuses. For disconnect use only. Enclosure is made of steel. Maximum cable, 5/8-inch diameter. Cadmium plated finish. Fuses not included.

No. 9124, 3 Fused and 1 Grounded Pole ..... each \$5.00

## R&S Ever-Lok Plugs and Receptacles

2, 3, and 4-Pole—Polarized



No. 8014  
Plug—Male End  
With Clamp Type Cable Grip



No. 8153  
Plug—Male End  
With Bushing Type Cable Grip



No. 8024  
Connector—Female End  
With Clamp Type Cable Grip



No. 8093  
Connector—Female End  
With Bushing Type Cable Grip

Plug is steel-clad with encased locking spring in non-separable housing, and has adjustable cord grip. Contacts are machined, self-wiping, and self-aligning.

Connector is steel-clad and has adjustable grip. Contacts are machined, self-wiping, and self-aligning.

Cadmium plated finish.

10 Amperes, 250 Volts D.C.—440 Volts A.C.

20 Amperes, 125 Volts D.C.

STYLE Wire Pole		With Clamp Type Cable Grip					With Bushing Type Cable Grip					Max. Cable Inches
		Plug		Connector		Max. Cable Inches	Plug		Connector			
		Male End No.	Each	Female End No.	Each		Male End No.	Each	Female End No.	Each		
2	2	8012	\$1.60	8022	\$2.35	1/2	8152	\$2.10	8092	\$2.85	1 1/16	
2	3	8013	1.70	8023	2.45	1/2	8153	2.20	8093	2.95	1 1/16	
3	4	8018	1.80	8028	2.50	1/2	8158	2.30	8098	3.05	1 1/16	
20 Amperes, 440 Volts A.C.												
30 Amperes, 250 Volts D.C.												
2	2	8016	\$1.65	8026	\$2.55	5/8	8156	\$2.15	8096	\$3.05	1	
2	3	8015	1.75	8025	2.65	5/8	8155	2.25	8095	3.15	1	
3	4	8014	1.85	8024	2.75	5/8	8154	2.35	8094	3.25	1	



**R&S Ever-Lok Flush Type Receptacles**

2, 3, and 4-Pole—Polarized

For Standard Outlet Box  $\frac{3}{4}$ -Inch Raised CoversNo. 8043  
With Double Hinged DoorNo. 8070  
Without Door

Plate: brass; brushed finish standard.

Standard package, 100 assorted receptacles, plugs and connectors.

10 Amperes, 250 Volts D.C.—440 Volts A.C.  
20 Amperes, 125 Volts D.C.

STYLE Wire Pole	Single-Gang				2-Gang				Plug No.
	With Double Hinged Door		Without Door		With Double Hinged Door		Without Door		
	No.	Each	No.	Each	No.	Each	No.	Each	
2	2	8042 \$4.25	8069 \$3.00	*8066 \$8.50	*8062 \$6.00	8012			
2	3	8043 4.35	8070 3.10	*8067 8.70	*8063 6.20	8013			
3	4	8044 4.45	8071 3.20	*8068 8.90	*8064 6.40	8018			
20 Amperes, 440 Volts A.C. 30 Amperes, 250 Volts D.C.									
2	2	8048 \$5.25	8019 \$3.15	†8102 \$10.50	†8055 \$6.70	8016			
2	3	8049 5.35	8020 3.25	†8103 10.70	†8056 6.90	8015			
3	4	8050 5.45	8021 3.35	†8104 10.90	†8057 7.10	8014			

\*Requires standard 2-gang outlet box raised covers.

†Requires standard 3-gang outlet box raised covers.

Can also be furnished in any number of gangs.

Plugs not included.

**For Combination with Toggle Switch**No. 8053  
With Double Hinged DoorNo. 8113  
Without Door

For standard 2-gang outlet box raised covers. Any standard type of toggle switch may be used.

Plate: brass; brushed finish standard.

Switches and plugs are not included.

10 Amperes, 250 Volts D.C.—440 Volts A.C.  
20 Amperes, 125 Volts D.C.

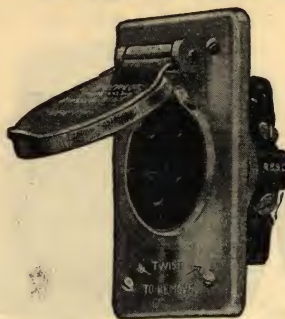
Wire	Pole	With Double Hinged Door		Without Door		Takes Plug No.
		No.	Each	No.	Each	
2	2	8052	\$6.75	8112	\$5.00	8012
2	3	8053	6.85	8113	5.10	8013
3	4	8054	6.95	8114	5.20	8018
20 Amperes, 440 Volts A.C. 30 Amperes, 250 Volts D.C.						
2	2	8106	\$7.75	8109	\$5.15	8016
2	3	8107	7.85	8110	5.25	8015
3	4	8108	7.95	8111	5.35	8014

Other combinations are available upon request.

**R&S Ever-Lok Conduit Box Type Receptacles**

2, 3, and 4-Pole—Polarized

For Type FS and Similar Conduit Fittings



No. 8004



No. 8138

Outlets: maximum, 1-inch conduit. Specify size and location when ordering.

Covers measure  $4\frac{3}{8} \times 2\frac{1}{8}$  inches; struck up steel, .063 inches. Furnished with four retained, cadmium plated screws for mounting on box. Standard finish: cadmium plated. Other finishes available at extra cost. Also available with cast iron box with corrosion resisting finish (No. 8009) for surface mounting at additional cost.10 Amperes, 250 Volts D.C.—440 Volts A.C.  
20 Amperes, 125 Volts D.C.

STYLE Wire Pole	With Spring Hinged Door		Without Door		Takes Plug No.
	No.	Each	No.	Each	
2	2	8002 \$2.50	8133	\$2.30	8012
2	3	8003 2.60	8134	2.40	8013
3	4	8008 2.70	8135	2.50	8018
20 Amperes, 440 Volts A.C. 30 Amperes, 250 Volts D.C.					
2	2	8006 \$2.65	8136	\$2.45	8016
2	3	8005 2.75	8137	2.55	8015
3	4	8004 2.85	8138	2.65	8014

Plugs are not included.

**No. 8091 Adapter Sub-Plate**

For Ever-Lok Conduit Box Type Receptacles

Permits the use of Ever-Lok conduit box type receptacles in any standard switch box with raised cover.

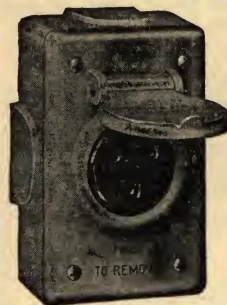
No. 8091.....each \$.50

**R&S Ever-Lok Conduit Type Box Receptacles**

2, 3, and 4-Pole—Polarized

Mounted on Single or Gang Type FS Conduit Boxes

With Spring Hinged Door



No. 8083

Outlets: maximum, 1-inch. Single-gang, 4-way; multi-gang, one outlet on one side, one per gang on opposite side and one on each end. Specify size and location when ordering.

Cover finish: cadmium plated standard. Cast iron boxes, corrosion resisting finish. Other finishes at extra cost.

Plugs are not included.

10 Amperes, 250 Volts D.C.—440 Volts A.C.  
20 Amperes, 125 Volts D.C.

STYLE Wire Pole	Single-Gang		2-Gang		3-Gang		4-Gang		Plug Pkg No.
	No.	Each	No.	Each	No.	Each	No.	Each	
2	2	8082 \$3.30	8127 \$6.60	8159 \$10.40	8171 \$14.20	8012			
2	3	8083 3.40	8128 6.80	8160 10.70	8172 14.60	8013			
3	4	8084 3.50	8129 7.00	8161 11.00	8173 15.00	8018			
20 Amperes, 440 Volts A.C. 30 Amperes, 250 Volts D.C.									
2	2	8029 \$3.45	8130 \$6.90	8162 \$10.85	8174 \$14.80	8016			
2	3	8030 3.55	8131 7.10	8163 11.15	8175 15.20	8015			
3	4	8031 3.65	8132 7.30	8164 11.45	8176 15.60	8014			



### R&S Ever-Lok Weathertight Type Receptacles

2, 3, and 4-Pole—Polarized

**Regular Service—Female Receptacle for Male Plug**  
With No. 333 Junction Box



Conduit: maximum,  $\frac{3}{4}$ -inch. Specify size and location when ordering.

Box and cover are made of cast iron with corrosion resisting finish. Screw cap and chain are brass.

Plugs not included.

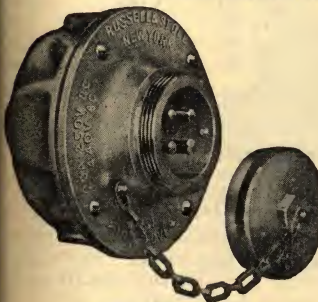
No. 8047

10 Amperes, 250 Volts D.C.—440 Volts A.C.

20 Amperes, 125 Volts D.C.

Wire	STYLE	Pole	With Spring Door		With Screw Cap and Chain		Takes Plug No.
			No.	Each	No.	Each	
2	2	2	8035	\$4.10	8121	\$4.75	8012
2	3	3	8036	4.20	8122	4.85	8013
3	4	4	8037	4.30	8123	4.95	8018
20 Amperes, 440 Volts A.C.							
30 Amperes, 250 Volts D.C.							
2	2	2	8045	\$4.25	8124	\$4.90	8016
2	3	3	8046	4.35	8125	5.00	8015
3	4	4	8047	4.45	8126	5.10	8014

**Reverse Service—Male Receptacle for Female Plug**  
With No. 2401 Junction Box



Conduit: maximum, 1-inch. Specify size and location when ordering.

Box and cover are made of cast iron with corrosion resisting finish. Screw cap and chain made of brass.

Plugs not included.

No. 8221

10 Amperes, 250 Volts D.C.—440 Volts A.C.

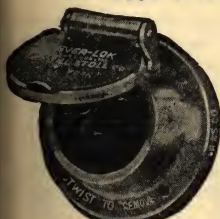
20 Amperes, 125 Volts D.C.

Wire	STYLE	Pole	With Spring Door		With Screw Cap and Chain		Takes Plug No.
			No.	Each	No.	Each	
2	2	2	8238	\$5.50	8216	\$6.15	8022
2	3	3	8239	5.60	8217	6.25	8023
3	4	4	8240	5.70	8218	6.35	8028
20 Amperes, 440 Volts A.C.							
30 Amperes, 250 Volts D.C.							
2	2	2	8241	\$6.00	8219	\$6.65	8026
2	3	3	8242	6.10	8220	6.75	8025
3	4	4	8243	6.20	8221	6.85	8024

### R&S Ever-Lok Conduit Box Type Receptacles

2, 3, and 4-Pole—Polarized

**For Type W and Similar Conduit Fittings**



Cover is flanged to fit any Type W or similar conduit fittings.

Outlets: maximum,  $\frac{3}{4}$ -inch. Specify size and location when ordering.

Furnished with four screw-hole knockouts.

Finish: cadmium plated standard. Also available with cast iron box, (No. 8039) at \$0.65 additional.

Plugs not included.

No. 8033

10 Amperes, 250 Volts D.C.—440 Volts A.C.

20 Amperes, 125 Volts D.C.

Wire	STYLE	Pole	With Spring Hinged Door		Without Spring Hinged Door		Takes Plug No.
			No.	Each	No.	Each	
2	2	2	8032	\$2.50	8139	\$2.30	8012
2	3	3	8033	2.60	8140	2.40	8013
3	4	4	8034	2.70	8141	2.50	8018

### R&S Ever-Lok Weathertight Heavy Service Receptacles and Plugs

30, 60, 100, and 200 Amperes—250 Volts D.C.  
30, 60, 100, and 200 Amperes—440 Volts A.C.  
2, 3, and 4-Pole—Polarized



45° Angle Type

Outlets: maximum, 30 and 60 amperes,  $1\frac{1}{2}$  inches; 100 amperes,  $2\frac{1}{2}$  inches; 200 amperes, 3 inches. Specify size and location when ordering.

Box and cover is made of cast iron with corrosion resisting finish. Composition interior.

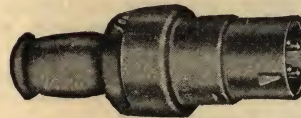
Plugs not included.

30 Amperes				Takes Plug No.
Wire	STYLE	Pole	No.	
*2	2	2	8402	\$9.00
2	3	3	8403	9.60
3	4	4	8404	10.20
60 Amperes				
*2	2	2	8412	\$15.30
2	3	3	8413	15.90
3	4	4	8414	16.50
100 Amperes				
*2	2	2	8422	\$23.00
2	3	3	8423	24.00
3	4	4	8424	25.00
200 Amperes				
*2	2	2	8432	\$65.00
2	3	3	8433	70.00
3	4	4	8434	75.00

\*No provision for equipment grounding. All others have equipment grounded through separate pole.

### R&S Ever-Lok Weathertight Heavy Service Connectors and Plugs

30, 60, 100, and 200 Amperes—250 Volts D.C.  
30, 60, 100, and 200 Amperes—440 Volts A.C.  
2, 3, and 4-Pole—Polarized



Male End



Female End

Cast aluminum housing. Composition interior.  
Prices upon application.

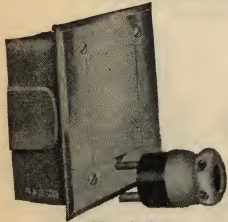
30 Amperes				Takes Plug No.
Wire	STYLE	Pole	No.	
*2	2	2	8406	\$13.20
2	3	3	8407	14.40
3	4	4	8408	15.60
60 Amperes				
*2	2	2	8416	\$16.20
2	3	3	8417	17.40
3	4	4	8418	18.60
100 Amperes				
*2	2	2	8426	\$24.00
2	3	3	8427	25.50
3	4	4	8428	27.00
200 Amperes				
*2	2	2	8436	\$52.50
2	3	3	8437	60.00
3	4	4	8438	67.50

\*No provision for equipment grounding; all others have equipment grounded through separate pole.



R&S Flush Receptacles and Plugs

2 and 3-Wire—Polarized  
With Flush Gravity Cover  
30 Amperes, 250 Volts



No. 956

Box is made of cast iron with corrosion resisting finish.

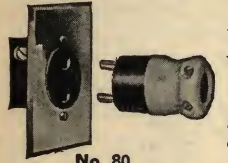
Plate: brass; brushed finish standard. Other finishes available at extra cost.

Outlets: maximum 1 1/4-inch conduit. Specify size and location of outlets when ordering.

Style  
2-Wire  
3-Wire

With Plug		Plug Only	
No.	Each	No.	Each
956	\$12.00	556	\$1.80
966	13.00	157	2.10

For Standard Outlet Box Raised Cover  
30 Amperes, 250 Volts—2 and 3 Wire—Polarized



No. 80

Receptacle and plug are made of bakelite and have self-aligning contacts.

Plate: brass, brushed finish standard. Other finishes available at extra cost.

Style  
2-Wire  
3-Wire

With Plug		Plug Only	
No.	Each	No.	Each
80	\$3.75	556	\$1.80
81	4.50	157	2.10

R&S Weathertight Receptacles and Plugs

30 Amperes, 250 Volts  
2 and 3-Wire—Polarized  
With Flap Cover



No. 83

Surface Type

Box and cover are made of cast iron with corrosion resisting finish.

Style  
2-Wire  
3-Wire

Single-Gang		2-Gang		Plug Only	
No.	Each	No.	Each	No.	Each
82	\$6.00	282	\$12.00	556	\$1.80
83	7.00	283	14.00	157	2.10

Flush Type

Box and cover are made of cast iron with corrosion resisting finish.

Plate is brass with hinged spring flap cover, and black oxidized finish. Other finishes available at extra cost.

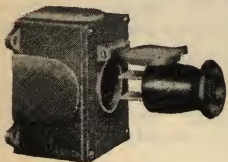
Outlets: maximum 1 1/4-inch conduit. Specify size and location of outlets when ordering.

Style  
2-Wire  
3-Wire

With Plug		Plug Only	
No.	Each	No.	Each
31	\$10.50	556	\$1.80
25	11.50	157	2.10

R&S Weathertight Receptacles and Plugs

Surface Type  
Single and 2-Gang—2, 3, and 4-Wire—Polarized  
\*70 Amperes, 250 Volts



No. 143

Box and cover are made of cast iron with corrosion resisting finish.

Receptacle interior and plug base are made of molded composition with heavy, self-aligning, machined contacts. Plug will also fit floor receptacles and other wall receptacles.

Outlets: maximum, 1 1/2 inches. Specify size and location when ordering.

Style  
2-Wire  
3-Wire  
4-Wire

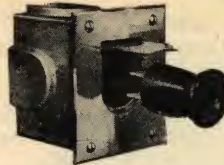
Single-Gang		2-Gang		Plug Only	
No.	Each	No.	Each	No.	Each
143	\$12.00	144	\$24.00	140	\$3.00
84	14.00	285	28.00	150	4.00
1784	16.00	275	32.00	337	5.00

\*To be used in series with switches and not for closing or opening circuits under load.

R&S Flush Type Receptacles and Plugs

2-Wire

60 Amperes,  
250 Volts—Polarized



No. 14

Box is made of cast iron with corrosion resisting finish.

Plate is brass with flush gravity drop.

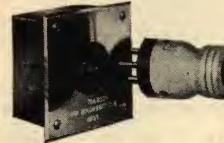
Receptacle interior and plug interior are made of molded composition with heavy, self-aligning machined contacts.

Plug can also be used with other fittings.

No. 14, with Plug.....each \$20.00  
No. 140, Plug Only.....each 3.00

2, 3, and 4-Wire

60, \*70, and \*100 Amperes  
250 Volts—Polarized



No. 1762

Box is made of heavy gage steel.

Outlets: maximum for Nos. 1752, 1762 and 1763, 1 1/2 inches (slip hole); No. 1791 maximum conduit, 3 1/2 inches (slip hole). Specify size and location when ordering.

Plate: brass brushed finish standard. Other finishes available at extra cost.

Receptacle interior and plug interior are made of molded composition with heavy, self-aligning machined contacts.

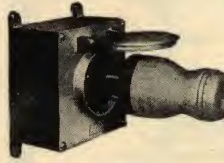
Plug can also be used with other fittings.

Amperes	Wire	With Plug		Plug Only	
		No.	Each	No.	Each
60	2	1752	\$12.00	140	\$3.00
70	3	1762	14.00	150	4.00
70	4	1763	16.00	337	5.00
100	3	1791	24.00	975	6.00

\*To be used in series with switches and not for closing or opening circuits under load.

R&S Receptacles and Plugs

3-Wire—Polarized  
\*75 Amperes, 440 Volts—\*100 Amperes, 250 Volts  
Weathertight—With Flap Cover



No. 85

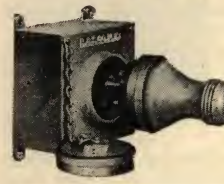
Box is made of cast iron; corrosion resisting finish. Receptacle interior and plug interior are made of molded composition with self-aligning machined contacts.

Outlets: maximum, for Nos. 153 and 85, 2 inches; for Nos. 226 and 1785, 3 1/2 inches. Specify size and location when ordering.

Nos. 153 and 226 are furnished with overhanging beveled brass plate for flush mounting. Black oxidized finish is standard. Other finishes available at extra cost.

Amperes	Flush Type		Plug Only	
	No.	Each	No.	Each
75	153	\$24.00	151	\$5.00
100	226	30.00	975	6.00
75	Surface Type		151	\$5.00
	85	\$20.00		
100	1785	26.00	975	6.00

Watertight—With Screw Cap Cover



No. 223

Box is made of cast iron; corrosion resisting finish. Receptacle interior is made of molded composition with self-aligning machined contacts. Plug handle is made of hard maple wood and is provided with heavy brass screw collar, gasketed to make the connection watertight when plug is inserted.

Outlets: maximum, No. 223, 2 inches; No. 1783, 3 1/2 inches. Specify size and location when ordering.

Amperes	With Plug		Plug Only	
	No.	Each	No.	Each
75	223	\$27.00	224	\$12.00
100	1783	34.00	973	13.00

\*To be used in series with switches and not for closing or opening circuits under loads.



## R&S Vaportight Pendent Fixtures With Screw Globe

Globes: clear glass standard; colored glass available at additional cost.

Reflectors: steel, porcelain enameled green outside, white inside.

Outlets: 1/2 or 3/4-inch. Specify size when ordering.

### Without Reflector



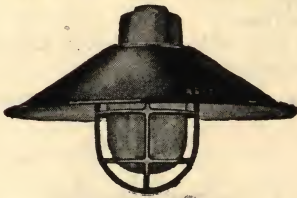
Max. Lamp Watts	Reflector Diameter Inches	Cast Brass				Cast Iron			
		Without Guard		With Brass Guard		Without Guard		With Brass Guard	
		No.	Each	No.	Each	No.	Each	No.	Each
100	....	5003	\$4.00	5000	\$5.00	6344	\$3.35	6345	\$4.35
200	....	5004	6.70	5001	8.50	6346	4.70	6324	6.50
*300	....	1417	12.30	1413	15.00	6347	9.30	6328	12.00
100	....	†428	6.00	†430	7.00	†6348	5.35	†6349	6.35

### With Standard Dome Steel Reflector



100	12	6201	\$8.00	6202	\$9.00	6360	\$7.35	6361	\$8.35
150	14	6203	11.70	6204	13.50	6303	9.00	6304	10.75
200	16	6205	12.70	6206	14.50	6305	10.00	6306	11.75
*300	18	6207	20.30	6208	23.00	6307	16.30	6308	19.00

### With Flat Steel Reflector



100	12	6251	\$8.00	6252	\$9.00	6362	\$7.35	6369	\$8.35
200	15	6263	12.20	6264	14.00	6363	9.45	6364	11.25
*300	18	6265	20.30	6266	23.00	6365	16.30	6366	19.00

### With Angle Steel Reflector



100	11 1/4	6230	\$8.00	6231	\$9.00	6387	\$7.35	6388	\$8.35
200	16	6234	11.70	6235	13.50	6232	9.00	6233	10.75
*300	16	6236	19.30	6237	22.00	6238	16.30	6239	19.00

\*Mogul base.

†Nos. 428, 430, 6348, and 6349 are furnished with switch; all others without switch.

## R&S Vaportight Junction Box Fixtures With Screw Globe and Cast Iron Junction Box

Globes: clear globes standard; colored globes available at additional cost.

Reflectors: steel porcelain enameled green outside, white inside.

Outlets: maximum, 3/4 inch. Specify size and location when ordering. Deep boxes can be furnished to allow for larger outlets at additional cost.

All fixtures furnished with junction box No. 333 as standard. Cast brass box No. 332 is available at additional cost.

### Without Reflector



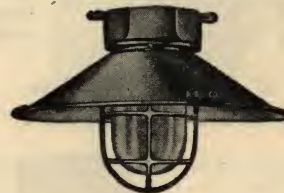
Max. Lamp Watts	Reflector Diameter Inches	Cast Brass				Cast Iron			
		Without Guard		With Brass Guard		Without Guard		With Brass Guard	
		No.	Each	No.	Each	No.	Each	No.	Each
100	....	5051	\$4.00	5045	\$5.00	5066	\$3.35	6321	\$4.35
200	....	5052	6.70	5047	8.50	5067	4.70	6334	6.50
*300	....	5053	12.30	1414	15.00	5068	9.30	6338	12.00
100	....	†5054	6.00	†431	7.00	†5069	5.35	†6322	6.35

### With Standard Dome Steel Reflector



100	12	6211	\$8.00	6212	\$9.00	6311	\$7.35	6312	\$8.35
150	14	6213	11.70	6214	13.50	6313	9.00	6314	10.75
200	16	6215	12.70	6216	14.50	6315	10.00	6316	11.75
*300	18	6217	20.30	6218	23.00	6317	16.30	6318	19.00

### With Flat Steel Reflector



100	12	6271	\$8.00	6272	\$9.00	6329	\$7.35	6330	\$8.35
200	15	6283	12.20	6284	14.00	6383	9.45	6384	11.25
*300	18	6285	20.30	6286	23.00	6385	16.30	6386	19.00

### With Angle Steel Reflector



100	11 1/4	6240	\$8.00	6241	\$9.00	6342	\$7.35	6343	\$8.35
200	16	6244	11.70	6245	13.50	6242	9.00	6243	10.75
*300	16	6246	19.30	6247	22.00	6248	16.30	6249	19.00

\*Mogul base.

†Nos. 5054, 431, 5069, and 6322 are furnished with switch; all others without switch.



R & S Vaportight Fixtures

Junction box: bracket fixtures furnished with iron junction box No. 333 as standard; No. 332 cast brass box available at additional cost.

Outlets: maximum, 3/4-inch. Specify size and location when ordering. Deep boxes can be furnished to allow for larger outlets at additional cost.

Guards: furnished without guard at reduction in price. Clear globes furnished standard. Colored globes are available at additional cost. Also available with heat-resisting globes on special order.

Ceiling Type

With Screw Globe and Guard

For Mounting to 4-Inch Cast Junction Box



Max. Lamp Watts	Cast Brass		Cast Iron	
	No.	Each	No.	Each
100	5090	\$4.40	6323	\$3.75
200	5091	7.90	6335	5.90
100	*5028	6.40	*5038	5.75
For Mounting to 4-Inch Steel Outlet Box				
100	5093	\$5.00	6333	\$4.35
200	5094	7.90	6336	5.90
100	*5029	7.00	*5039	6.35

45° Angle Bracket Type

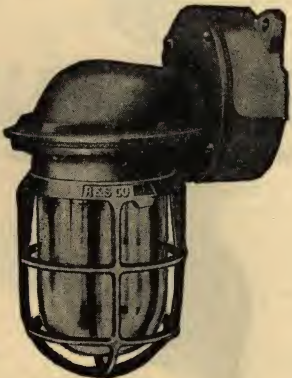
With Screw Globe and Guard



Max. Lamp Watts	Cast Brass with Iron Box		Cast Iron with Iron Box	
	No.	Each	No.	Each
100	5070	\$7.00	6270	\$6.35
200	5072	12.50	6269	10.00
100	*439	9.00	6268	8.35

90° Angle Bracket Type

With Screw Globe and Guard



Max. Lamp Watts	Cast Brass with Iron Box		Cast Iron with Iron Box	
	No.	Each	No.	Each
100	6255	\$7.00	449	\$6.00
200	1426	12.50	6254	10.00
100	*6256	9.00	*450	8.00

\*Furnished with switch; all others without switch.

R & S Vaportight Fixtures

Cast Brass—With Screw Globes



No. 4932  
Ceiling Type

Has brass guard. Globes: clear globes regularly furnished; opal, ruby, blue, green and amber globes at extra cost.

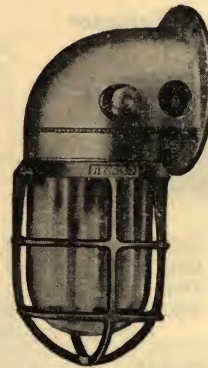
Outlets: max. 3/4-inch; conduit outlet in top, back, and sides only. Specify size and location when ordering.

Furnished with or without switch.



No. 230  
Bracket Type

Maximum Lamp Watts	Ceiling Type		Bracket Type	
	No.	Each	No.	Each
60	4932	\$5.00	4933	\$5.50
100	4942	5.00	5005	5.50
200	4952	9.00	5006	10.50
With Switch				
60	4937	\$7.00	230	\$7.50
100	4947	7.00	330	7.50



No. 4967  
Wall Bracket Type

Has brass guard. Furnished with or without switch.

Maximum Lamp Watts	Without Switch		With Switch	
	No.	Each	No.	Each
60	4962	\$7.00		
100	4972	7.00		
60	4967	\$9.00		
100	4977	9.00		

Can also be used with R&S 4-inch junction box for concealed conduit systems.

R & S Non-Guarded Type Ceiling Fixtures

Cast Brass



No. 648

Fixture has white enameled finish. Globe is frosted inside.

For 4-Inch R & S Cast Junction Box

Maximum Lamp Watts	COMPLETE		REPLACEMENT GLOBE		OVERALL DIMENSIONS, INCHES	
	No.	Each	No.	Each	Diameter	Depth
100	394	\$7.20	2356	\$1.80	4 5/8	5 3/4
150	395	12.00	2446	2.40	5 3/4	8
For 4-Inch Steel Outlet Box						
100	648	\$7.80	2356	\$1.80	4 5/8	5 3/4
150	658	12.00	2446	2.40	5 3/4	8



**R&S Ceiling Fixtures****Cast Brass**

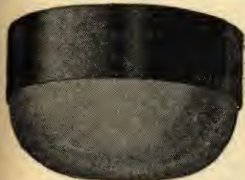
Made of cast brass and finished black oxidized.

Globe: inside frosted is standard. Clear or opal globes are available on request.

Finish: black oxidized standard. Other finishes are available at extra cost.

Outlets: side outlets can be tapped 4-way for 1/2 or 3/4-inch conduit. Specify size and location when ordering.

**Non-Guarded—Screw Bowl and Straight Side Types**



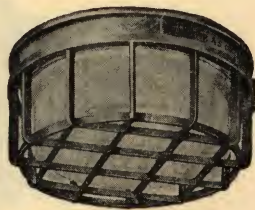
No. 370



No. 1470F

Size Inches	Complete		Replacement Globe		OVERALL DIMENSIONS, IN.		No. of Lamp		*Outlet Location
	No.	Each	No.	Each	Diameter	Height	Lamps	Watts	
6	373	\$10.00	2451	\$2.40	6 1/4	3	1	25	Top
6	371	12.00	2451	2.40	6 1/4	4 1/2	1	25	Side
8	372	12.50	2454	2.75	8 1/4	3 3/4	2	100	Top
8	370	15.00	2454	2.75	8 1/4	5	2	100	Side
12	350	30.00	2464	5.00	12 1/2	8	3	100	Top
12	351	30.00	2464	5.00	12 1/2	8	3	100	Side
<b>Vaportight Straight Side Bowl</b>									
8	1470F	\$14.00	2465	\$4.00	8 1/4	3 3/4	2	60	Top
8	1370F	16.50	2465	4.00	8 1/4	5	2	60	Side

**Guarded—Vaportight Screw Bowl and Straight Side Types**

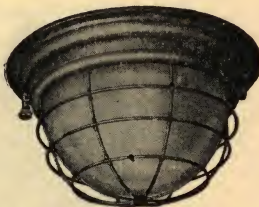
No. 1370A  
For Side OutletNo. 1470FG  
For Top Outlet

Size Inches	Complete		Replacement Globe		OVERALL DIMENSIONS, IN.		No. of Lamp		*Outlet Location
	No.	Each	No.	Each	Diameter	Height	Lamps	Watts	
6	1471A	\$20.00	2451	\$2.40	8	4 1/4	1	25	Top
6	1371A	23.50	2451	2.40	8	5 1/4	1	25	Side
8	1470A	25.00	2454	2.75	10	5	2	100	Top
8	1370A	30.00	2454	2.75	10	6	2	100	Side
12	1350	45.00	2464	5.00	14	9	3	100	Top
12	1351	45.00	2464	5.00	14	9	3	100	Side
<b>Straight Side</b>									
8	1470FG	\$26.50	2465	\$4.00	10	5	2	60	Top
8	1370FG	31.50	2465	4.00	10	6	2	60	Side

**Guarded—Flared Lip Globe Types**



No. 552



No. 2773

Size Inches	Complete		Replacement Globe		OVERALL DIMENSIONS, IN.		No. of Lamp		*Outlet Location
	No.	Each	No.	Each	Diameter	Height	Lamps	Watts	
12	552	\$45.00	388	\$6.00	12 1/2	9 1/2	4	100	†
<b>Non-Watertight</b>									
12	2773	\$45.00	388	\$6.00	15	8 3/4	4	100	†

\*Top outlet fixtures are designed for mounting to No. 333 junction box set flush in ceiling. Fixtures can also be arranged for mounting to standard steel outlet boxes with stud if specified. Box is not included.

†Outlet location is top or side.

†Fixture base is drilled for mounting direct to ceiling. Flush outlet box should be provided in ceiling for wiring of fixture.

**R&S Underwater Lighting Fixtures****For Swimming Pools**

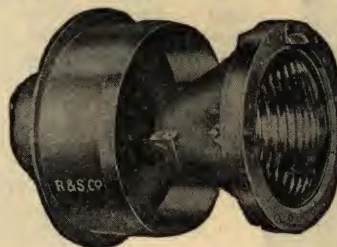
Made of cast bronze with Alzak aluminum reflector and clear spread light lens.

Lamps are not furnished with fixtures. Type G floodlight service lamps should be used.

Conduit and drain connections are not furnished.

All metal parts are effectively grounded.

Drawings showing recommended method of installing floodlights furnished upon request.

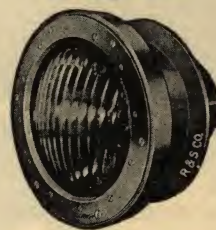
**Removable Water-Cooled Type**

For any pool where it is inconvenient or not economical to drain the water for relamping.

Relamping is accomplished by releasing the surplus cable in the pull box and removing the floodlight unit from the housing in the concrete wall.

No.	Each	Lamp Watts	Description
2362	\$60.00	250-400	*Removable Floodlight Only
2398	150.00	1000-1500	*Removable Floodlight Only
2362-H	30.00	250-400	Housing for No. 2362
2362-SH	40.00	250-400	Housing for No. 2362
2398-H	50.00	1000-1500	Housing for No. 2398
2363	20.00	.....	Cable Box for Nos. 2362 or 2398
2362-TP	10.00	.....	Trunion Plates (Set of 2)
2362-B	5.00	.....	Support Bracket

\*Equipped with 16 feet of heavy duty cable.

**Front Relamped Type  
Floodlight Only**

Used in pools which are drained frequently or at regular intervals. At time of drainage, a burned-out lamp can be replaced by the removal of the front bezel.

No. 2360, 250-Watt Lamp.....each \$60.00

**Back Relamped Type  
Floodlight Only**

Designed for indoor pools which are constructed with passageway or space behind the pool walls.

To relamp, the back cover plate is removed by loosening wing nuts.

No. 2364, 250-Watt Lamp.....each \$60.00

No. 2365, 400-Watt Lamp.....each 80.00



## R &amp; S Watertight Fixtures

## Fountain Lights

## Reflector Type



No. 2303

For fountains, small pools, and lily ponds.

No. 2096 is similar to No. 2303 but is made of aluminum for fish ponds.

No.	Each	Lamp Watts	Description
2303	\$20.00	60	Bronze
2096	25.00	60	Aluminum
2417	40.00	150	Bronze

## Globe Type



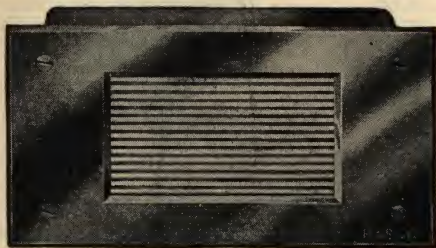
No. 2396

Designed for installation in small pools and fountains for general illumination of water.

Has flared lip globe.

No.	Each	Lamp Watts
2366	\$7.50	15
2367	10.00	100
2368	12.50	150
2369	17.00	200

## No. 2090 Step Lights



Designed to illuminate steps, terraces, entrance gates, patios, etc.

For flush mounting.

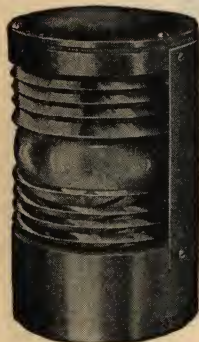
Bronze construction eliminates corrosion.

Furnished with prismatic glass panels which re-direct the light downward.

Standard finish, statuary bronze. Other finishes are available.

No. 2090, 100-Watt Lamp.....each \$20.00

## No. 2090 Curb Lights



Designed for installation along driveways, catwalks, and terraces.

Fresnel lens makes possible a wide horizontal beam of light, eliminating any tendency of light being thrown upwardly on the surrounding landscape.

Made of cast bronze with all external parts brush bronze finished. Other finishes are available.

No. 2092, 100-Watt Lamp..each \$20.00

## R&amp;S Watertight Marine Receptacles and Plugs

## Cast Brass

10 Amperes, 125 Volts  
Standard Round Type  
2-Wire—Polarized

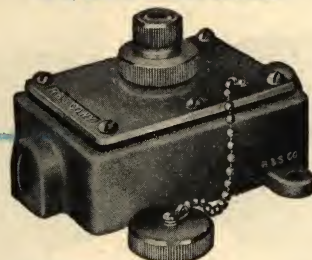


No. 447

Outlets: maximum, 3/4-inch straight through. Specify size and location when ordering.

Also available with overhang cover for flush mounting at extra cost.

No. 447, with Plug.....each \$4.00  
No. 452, Plug Only.....each 1.00

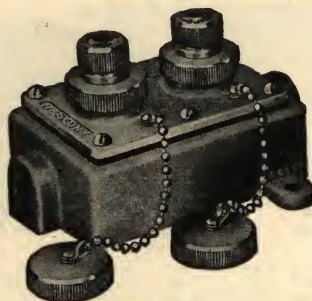
Standard Rectangular Type—Single-Gang  
2, 3, and 4-Wire—Polarized

No. 479

Outlets: maximum, 3/4-inch straight through for conduit or integral terminal glands. Specify size and location when ordering.

Also available with overhang cover for flush mounting, at extra cost.

Style	With Plug		Plug Only	
	No.	Each	No.	Each
2-Wire	479	\$4.50	452	\$1.00
3-Wire	1479	5.50	1453	1.50
4-Wire	1579	8.50	1463	2.50

Standard Rectangular Type—2, 3, and 4-Gang  
2-Wire—Polarized

No. 495

Outlets: maximum, 3/4-inch straight through for conduit or integral terminal glands. Specify size and location when ordering.

Also available with overhang cover for flush mounting, at extra cost.

No. 495, 2-Gang, with 2 Plugs.....each \$6.50  
No. 638, 3-Gang, with 3 Plugs.....each 10.00  
No. 639, 4-Gang, with 4 Plugs.....each 15.00  
No. 452, Plug Only.....each 1.00

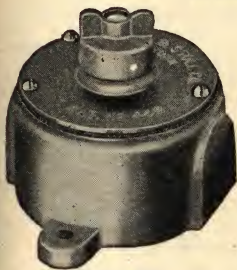


## R&S Marine Watertight Switches and Receptacles

Cast Brass

### Single-Gang Switches

10 Amperes, 250 Volts



No. 448



No. 448S

Round type box is suitable for 1/2 or 3/4-inch outlet one way, or straight through.

Straight side type is provided with two 1/2 or 3/4-inch outlets in side.

Specify size and location of outlets when ordering.

Style	Round Box Type No.	Each	Straight Side Type No.	Each
Single-Pole.....	448	\$4.00	448S	\$4.50
2-Pole.....	1520	4.50	1520S	5.00
3-Way.....	1522	5.00	1522S	5.50

### Single 2, 3, and 4-Gang Switches

10 Amperes, 250 Volts



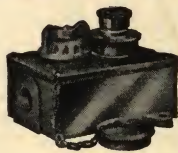
No. 627

Outlets: maximum, 3/4-inch straight through for conduit or terminal glands. Specify size and location of outlets when ordering.

Style	Single-Gang No.	Each	2-Gang No.	Each	3-Gang No.	Each	4-Gang No.	Each
Single-Pole .	496	\$4.00	627	\$6.50	628	\$10.00	629	\$15.00
2-Pole.....	1493	4.50	631	7.50	632	11.50	633	17.00
3-Way.....	1496	5.00	634	8.50	635	13.00	636	19.00

### Switch and Receptacle with Plugs

10 Amperes, 125 Volts—2 Wire



No. 478

Combination of single or 2-pole switch and one or two receptacles mounted in one box. Other combinations are available on special order.

Outlets: maximum, 3/4-inch straight through for conduit or terminal glands. Specify size and location of outlets when ordering.

Style	Single-Pole No.	Each	2-Pole No.	Each
1 Receptacle—1 Plug.....	478	\$6.00	1478	\$6.50
2 Receptacle—2 Plug.....	498	10.00	1498	10.50
Plug Only.....	452	1.00	452	1.00

## R&S Waterproof Marine Standard Receptacles and Plugs

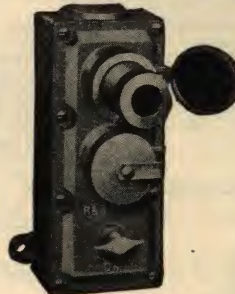
Cast Bronze

With Extra Pole for Grounding

Ratings: receptacles and plugs, 10 amperes, 250 volts d.c., 440 volts, a.c., 20 amperes, 125 volts d.c.; switches, 10 amperes, 250 volts.

All switch and receptacle interiors are interchangeable.

### Straight Type



No. 498-45



No. 479-45

### Receptacle Complete—Without Plugs

#### 2-Wire—3-Pole

No.	Each	Description
479-45	\$6.50	1-Gang
495-45	9.00	2-Gang
638-45	12.00	3-Gang
3720B	3.50	Plug Only

#### 3-Wire—4-Pole

No.	Each	Description
1479-45	\$7.00	1-Gang
1495-45	10.00	2-Gang
1638-45	13.50	3-Gang
3730B	4.00	Plug Only

### Switch and Receptacle Complete—Without Plugs

#### \*2-Wire—3-Pole

No.	Each	Description
478-45	\$9.00	Single-Pole Switch and 1 Receptacle
1478-45	9.50	2-Pole Switch and 1 Receptacle
498-45	12.00	Single-Pole Switch and 2 Receptacles
1498-45	12.50	2-Pole Switch and 2 Receptacles
3720B	3.50	Plug Only

### Angle Type



No. 173-45



No. 175-45

### Receptacle Complete—Without Plugs

#### 2-Wire—3-Pole

No.	Each	Description
171-45	\$5.50	1-Gang
172-45	9.00	2-Gang
173-45	12.00	3-Gang
3720B	3.50	Plug Only

#### 3-Wire—4-Pole

No.	Each	Description
1171-45	\$6.00	1-Gang
1172-45	10.00	2-Gang
1173-45	13.50	3-Gang
3730B	4.00	Plug Only

### Switch and Receptacle Complete—Without Plugs

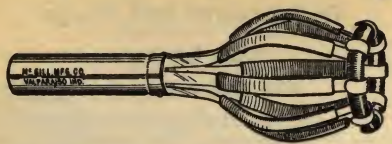
#### \*2-Wire—3-Pole

No.	Each	Description
175-45	\$9.00	Single-Pole Switch and 1 Receptacle
177-45	9.50	2-Pole Switch and 1 Receptacle
176-45	12.00	Single-Pole Switch and 2 Receptacles
178-45	12.50	2-Pole Switch and 2 Receptacles
3720B	3.50	Plug Only

\*Can also be furnished with 3-wire, 4-pole receptacles at additional cost.



McGill Adaptable Lamp Changers

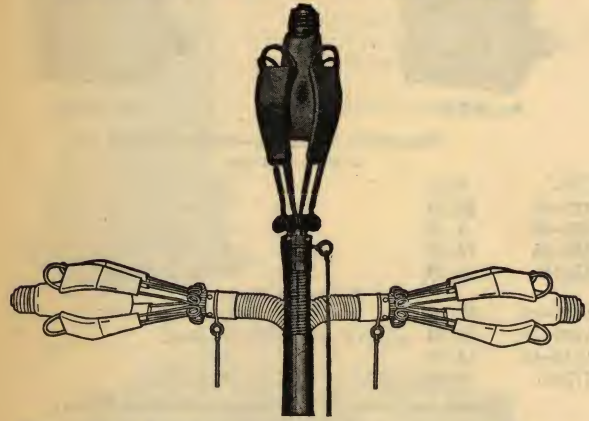


Coil spring grips lamp firmly and makes it easy to remove. The lamp changer with plain fingers and without coil spring is recommended when used with poles longer than 10 feet.

Poles longer than 30 feet are not recommended.

	Plain Fingers, Angle Adjustment		Coil Spring, Angle Adjustment		Coil Spring, No Angle Adjustment	
No.	150	151	150C	151C	152C	153C
Each	\$6.50	6.50	6.50	6.50	7.00	7.50
Lamp watts	15-60	100-200	15-60	100-200	300-500	750-1500
Poles, 5½-Foot Sections, Steel	each \$4.50					

Matthews Holdfast Lamp Changers



Removes and replaces lamps in high places, such as ceilings, side walls, electric signs, etc. Like a human hand on the end of a wooden pole. Saves time and prevents ladder accidents. To remove or replace lamps from side walls or at an angle, pull cord attached to the swivelled ring, this bends the wristlike coil spring so that the changer will work just as well at a right angle to the rotating pole as in vertical position.

**No. 2**  
For 50-Watt Rough Service, 15 to 100-Watt Mazda, and Other Lamps up to 3 Inches in Diameter  
No. 2, Shipping Weight Each, 1 Pound..... each \$11.00

**No. 3**  
For 60 to 500-Watt Mazda Lamps and Other Large and Odd Shapes up to 5 Inches in Diameter  
No. 3, Shipping Weight Each, 1 Pound..... each \$12.00

Specially treated wood handles can be furnished in 6-foot sections at \$8.00 per section, including couplings. Prices quoted are for small quantities. Write for quotations on large quantities.

McGill Protector O Lamp Guards

This guard gives full protection to lamp bulbs; the removable trap at bottom prevents pilfering. Yet the trap can be attached and removed quickly and easily for lamp replacement and cleaning—simply press inward on the guard rim where the trap hooks on it and snap the trap on or off.

Made of No. 14 steel wire, heavily tinned, and finished with plain steel screws for attaching to sockets. Made for 25 to 75-watt lamps and for brass and weatherproof sockets with bottom bead measuring from 1 1/16 to 1 3/4 inches in extreme diameter.



No.	Per Dozen	Lamp Size Watts	Fits Socket	Weight Pounds per Doz.
1429	\$4.25	25-75	Brass	2 1/2
1429-T with Trap	4.80	25-75	Brass	3
1432	4.25	25-75	W.P.	2 1/2
1432-T with Trap	4.80	25-75	W.P.	3
2932 Trap Only	.72	.....	.....	1 1/2

McGill Loxon Locking Lamp Guards

Used in garages, factories, yards, shops, basements and closets to secure double protection against breakage and unauthorized removal. Made of steel wire, heavily tinned; available in sizes to fit all sockets and for regular and mill type lamps. Easily attached and locked with key. One key is included with each dozen guards.



Plain Guards				
No.	Per Dozen	Lamp Size Watts	Fits Socket	Weight Pounds per Doz.
*1420	\$5.50	25-40	Brass	2½
*1420 A	5.50	25-40	W.P.	2½
*1420-B	5.50	25-40	W.P.	3
1425	5.50	50-60	Brass	2½
1426	5.75	60-100	Brass	2¾
1427-A	5.50	50-60	W.P.	2¾
1427-B	5.50	50-60	W.P.	3¼
1428-A	5.75	60-100	W.P.	3
1428-B	5.75	60-100	W.P.	3½
2443	7.00	100-150	Brass	4½
2444	9.00	150-200	Brass	3
2446-A	9.00	150-200	W.P.	3
2446-B	9.00	150-200	W.P.	3½

Reflector Guards				
*1400	\$8.50	25-40	Brass	3½
*1401-A	8.50	25-40	W.P.	3½
*1401-B	8.50	25-40	W.P.	4
1443	8.50	50-60	Brass	4½
1444-A	8.50	50-60	W.P.	4½
1444-B	8.50	50-60	W.P.	5¼

\*Also 50-watt rough service and 50-watt mill type lamps.

\*Also 50-watt rough service and 50-watt mill type lamps.

All numbers followed by "A" fit any W.P. Socket with bottom bead measuring 1 1/16 to 1 11/16 inches in extreme diameter.

All numbers followed by "B" fit any W. P. Socket with bottom bead measuring 1 3/4 inches in extreme diameter.

For W. P. Sockets or receptacles with bottom bead measuring 1 1/2 inches in diameter, specify regular catalog number of guard desired followed by letter "N." Sockets not coming with the above dimensions can be fitted by sending a sample socket.

Aluminum sockets can be fitted by giving number and manufacturer's name.

McGill Gripon Non-Locking Lamp Guards

For regular and mill type lamps. Tinned steel wire with plain steel screws.



Plain Guards				
No.	Per Dozen	Lamp Size Watts	Fits Socket	Wt. Lb. per Doz.
1600	\$4.25	50- 60	Brass	2 3/4
1601	4.50	60-100	Brass	2 3/4
1602-A	4.25	50- 60	W. P.	2 3/4
1602-B	4.25	50- 60	W. P.	3 1/4
1603-A	5.00	60-100	W. P.	3
1603-B	5.00	60-100	W. P.	3 1/2
1605	7.50	100-200	Brass	3
1606-A	7.50	100-200	W. P.	3
1606-B	7.50	100-200	W. P.	3 1/2
*1608	4.25	25- 40	Brass	2 1/4
*1608-A	4.25	25- 40	W. P.	2 1/2
*1608-B	4.25	25- 40	W. P.	3
Reflector Guards				
*1610	\$7.25	25-40	Brass	3 1/2
*1611-A	7.25	25-40	W. P.	3 1/2
*1611-B	7.25	25-40	W. P.	4
1620	7.25	50-60	Brass	4 1/4
1621-A	7.25	50-60	W. P.	4 1/2
1621-B	7.25	50-60	W. P.	5 1/4

\*Also 50-watt rough service and 50-watt mill type lamps.

All numbers followed by "A" fit any W.P. Socket with bottom bead measuring 1 1/16 to 1 11/16 inches in extreme diameter.

All numbers followed by "B" fit any W.P. Socket with bottom bead measuring 1 3/4 inches in extreme diameter.



## Matthews Holdfast Lamp Guards



For Brass Sockets

The rigid construction of these guards; the fact that they are permanently clamped to the socket; and the spiral spring cushion in the center make it a protection against breakage of incandescent lamps. The trap which is clamped across bottom opening prevents unauthorized removal of lamps. Guard is locked to socket by bending set screw.



For Weatherproof Sockets

The hot lamp cannot get closer than one inch to any inflammable material and the guard does not have to be removed from the socket to replace the lamp.

Approved by all insurance companies and underwriters. Guaranteed 10 years. Collars of guards for brass shell sockets are 1 1/4 inches, for weatherproof sockets, 1 1/2 inches.

**For 50-Watt Rough Service, 25 and 40-Watt Mazda Lamps and Other Lamps Not Exceeding 4 1/4 In. in Length and 2 3/8 In. in Diameter**

## For Brass Shell Sockets

## For Weatherproof Sockets

No.	Size Wire B. W. G.	Per 100	No.	Size Wire B. W. G.	Per 100
MT14B	14	\$84.00	MT14WP	14	\$84.00

**For 50, 60 and 75-Watt Mazda Lamps and Other Lamps Not Exceeding 5 5/16 In. in Length and 2 3/4 In. in Diameter**

114B	14	\$80.00	114WP	14	\$80.00
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**For 100-Watt Rough Service and 150-Watt Mazda Lamps and Other Lamps Not Exceeding 6 15/16 In. in Length and 3 1/4 In. in Diameter**

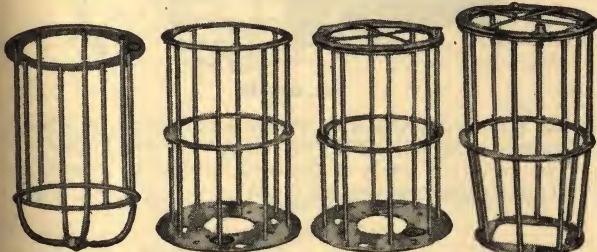
514B	14	\$104.00	514WP	14	\$104.00
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**For 200-Watt Type C Pear Shape Mazda Lamps and Other Lamps Not Exceeding 8 1/8 In. in Length and 3 3/4 In. in Diameter**

714B	14	\$180.00	714WP	14	\$180.00
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Prices quoted are for small quantities. Write for quotations on large quantities.

## McGill Crescent Wall Lamp Guards



No. 1438

No. 1439

No. 1440

No. 1581

These wall lamp guards protect against theft and breakage in public buildings, gymnasiums, schools, theatres, hallways, etc. Made of first quality steel wire; keyhole slots in base rings permit easy installation or removal from ordinary light outlets. Cannot be knocked off accidentally.

Boxes and sockets are not furnished with the guards.

## Outlet Box Cover Guards

No.	Each	Size Outlet Box, Inches	Lamp Size Watts	Inside Diam. Inches	Depth Inches	Weight Pounds per Doz.
1436	\$1.00	3	60	2 13/16	5 3/4	6 1/2
1438	1.25	4	100	3 1/8	6 5/8	7 1/2

## Wall-Ring Guards

1437	\$1.75	Wall Type	100	3 1/8	6 3/4	4 1/2
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## Receptacle Guards

1439	\$1.25	3 or 4	100	3 1/8	5 5/8	8 1/2
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*1439-B	1.25	3 or 4	100	3 1/8	5 5/8	9 1/4
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1580	1.25	Condulet or Unilet	60	3 1/8	6 3/8	8
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## Loxon Wall Guards with Bottom Trap

1440	\$2.00	3 or 4	100	3 1/8	5 5/8	9 1/2
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*1440-B	2.00	3 or 4	100	3 1/8	5 5/8	10 1/2
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1581	1.75	Condulet or Unilet	60	3 1/8	6 3/8	9
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1590	2.25	3 or 4	150	3 1/2	6 7/8	15
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1591	2.75	3 or 4	200	4 1/8	8 1/4	16
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\*These guards fit the 4-inch square outlet, as well as the 3 and 4-inch round.

## Morse Eureka Open End Lamp Guards

## Non-Locking

## For Brass Sockets



Light			Heavy		
No.	Each	For Size Watts	No.	Each	For Size Watts
1	\$.42	40-60	3	\$.64	40-60
2	.52	75-100	4	.84	75-100

## For Weatherproof Sockets

No.	Each	For Size Watts	No.	Each	For Size Watts
5	\$.42	40-60	7	\$.64	40-60
6	.52	75-100	8	.84	75-100

## Morse Eureka Open End Lamp Guards

## With Cushion Rings

## For Brass Sockets



Light			Heavy		
No.	Each	For Size Watts	No.	Each	For Size Watts
161	\$.52	40-60	163	\$.76	40-60
162	.64	75-100	164	.96	75-100

## For Weatherproof Sockets

No.	Each	For Size Watts	No.	Each	For Size Watts
165	\$.52	40-60	167	\$.76	40-60
166	.64	75-100	168	.96	75-100

## Morse Eureka Closed End Lamp Guards

## Non-Locking

## For Brass Sockets



No.	Each	For Size Watts	B.&S. Gage Wire
198	\$.84	60	14
200	1.20	100	14
202	1.40	150	14
204	1.80	200	14
206	2.90	300	12
208	4.60	500	12
211	7.90	1000	10

When desired for use on waterproof sockets, add WP to above numbers.

## Morse Eureka Tubular Lamp Guards



No. 99



No. 100

For use over T-8 and T-10 bulbs.

## Open End

No.	Each	Description	B.&S. Gage Wire
99	\$.96	For Brass Sockets.....	18
99WP	.96	For Weatherproof Sockets.....	18

## Closed End

100	\$.96	For Brass Sockets.....	18
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## Morse Eureka Portable Hand Guards

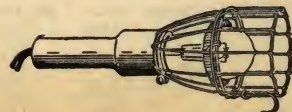
## Open Bottom

## Without Brass Socket



No.	Each	Watts	Ga. Wire
70	\$1.70	50-60	12
72	2.00	100	12
69	3.40	200	12

## With Weatherproof Socket



No.	Each	Watts	Ga. Wire
75	\$2.00	50-60	12
77	2.56	100	12
73	3.96	200	12



### Hubbell Locking Type Lamp Guards For Brass Shell Sockets



No. 5685

One No. D-4307 key is furnished with each carton of guards. Extra keys, \$5.50 per 100.

Size lamp, 40 to 60 watt.

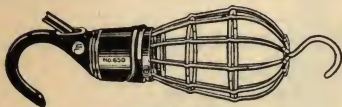
Carton, 10. Standard package, 100.

Weight per standard package, 32 pounds.

No. 5685, For Brass Shell Sockets.....per 100 **\$36.50**

No. 5730, For Weatherproof Sockets.....per 100 **36.50**

### No. 650 Series McGill Portable Lamp Guards With Rubber Hook Handles



No. 650 MSR

Widely used in airports, machine shops, railroad yards and repair shops.

Socket portion of handle is made of pliable molded rubber; hook is made of hard molded rubber with a steel cord. The socket rubber and hook rubber are thoroughly vulcanized together into a single unit. The rubber hook handle insures against shock while guard is hanging from any angle or place. Cord wires are run through a tough fiber disk and knotted, taking all strain off cord and socket connection.

Cage is made of 10 extra heavy Bessemer steel wires, electrically welded, zinc plated to prevent corrosion. Fiber washers prevent cage screws from dropping out when lamp is changed. Cage does not roll when laid down.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
*650	\$2.50	Plain Closed	40-100	4003 Keyless	15 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>
*650-R	3.00	Refl. Closed	40-75	4003 Keyless	15 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>
650-S	3.00	Plain Closed	40-100	4005 Lever	15 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>
650-SR	3.50	Refl. Closed	40-75	4005 Lever	15 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>
*650-M	2.25	Plain Closed	+50	4003 Keyless	13 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>16</sub>
*650-MR	2.75	Refl. Closed	+50	4003 Keyless	13 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>16</sub>
650-MS	2.75	Plain Closed	+50	4005 Lever	13 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>16</sub>
650-MSR	3.25	Refl. Closed	+50	4005 Lever	13 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>16</sub>
*651	2.50	Open Type	40-100	4003 Keyless	12 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>16</sub>
651-S	3.00	Open Type	40-100	4005 Lever	12 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>16</sub>
*651-M	2.25	Open Type	+50	4003 Keyless	11 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>
*651-MR	2.50	Open Refl.	+50	4003 Keyless	11 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>
651-MS	2.70	Open Type	+50	4005 Lever	11 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>
651-MSR	2.75	Open Refl.	+50	4005 Lever	11 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>

\*Available with grounding attachment; add 20 cents each.

†Rough service lamp.

The letter "R" indicates a reflector guard.

The letter "S" denotes switch or lever.

Rubber coated cages available at slight extra cost.

### No. 999 McGill Insulated Lamp Guards



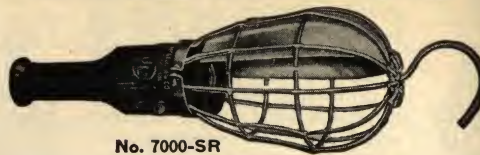
No. 999SR

Used where protection against short circuiting is vital. Molded Insurok cage has high resistance to heat, cold,

moisture, oils, fumes, most chemicals and weak alkalies. Rubber hook handle; straight rubber handle if desired. For 50-watt rough service lamp. Length, 11<sup>1</sup>/<sub>8</sub> inches.

No.	Each	Cage	Socket No.	Keyless	Lever	Wt. Lb. Each
999	\$4.50	Closed	4003	.....	.....	1 <sup>1</sup> / <sub>4</sub>
999-R	5.00	Closed Refl.	4003	.....	.....	1 <sup>1</sup> / <sub>8</sub>
999-S	5.00	Closed	.....	.....	4005	1 <sup>1</sup> / <sub>4</sub>
999-SR	5.25	Closed Refl.	.....	.....	4005	1 <sup>1</sup> / <sub>8</sub>

### McGill Portable Lamp Guards No. 7000 Series—With Rubber Handles



No. 7000-SR

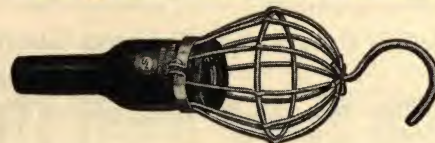
These guards are made in a wide range of sizes for every need in industrial plants, garages, railroads, power plants, etc.

The handle is of high quality black molded rubber, formed to provide a solid rubber edge to support a tough fibre disk. Cord wires are run through holes in the disk and knotted, taking all strain off the cord and socket connection.

Cage is composed of ten extra heavy Bessemer steel wires, electrically welded. Cage does not roll when laid down.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
*7000	\$2.50	Plain Clsd.	40-100	4003 Keyless	14	1 <sup>3</sup> / <sub>8</sub>
*7000-R	3.00	Refl. Clsd.	40-75	4003 Keyless	14	1 <sup>1</sup> / <sub>16</sub>
7000-S	3.00	Plain Clsd.	40-100	4005 Lever	14	1 <sup>3</sup> / <sub>8</sub>
7000-SR	3.50	Refl. Clsd.	40-75	4005 Lever	14	1 <sup>1</sup> / <sub>16</sub>
*7001	2.50	Open Type	40-100	4003 Keyless	12	1 <sup>3</sup> / <sub>8</sub>
7001-R	3.00	Open Refl.	100	4003 Keyless	12	1 <sup>3</sup> / <sub>8</sub>
7001-S	3.00	Open Type	40-100	4005 Lever	12	1 <sup>3</sup> / <sub>8</sub>
7001-SR	3.25	Open Refl.	100	4005 Lever	12	1 <sup>3</sup> / <sub>8</sub>
7002	5.50	Open Type	200	4003 Grounded	.....	.....
*7000-M	2.25	Plain Clsd.	+50	4003 Keyless	12 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>
*7000-MR	2.75	Refl. Clsd.	+50	4003 Keyless	12 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>
7000-MS	2.75	Plain Clsd.	+50	4005 Lever	12 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>
7000-MSR	3.25	Refl. Clsd.	+50	4005 Lever	12 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>
*7001-M	2.25	Open Type	+50	4003 Keyless	10 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>16</sub>
*7001-MR	2.50	Open Refl.	+50	4003 Keyless	10 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>16</sub>
7001-MS	2.75	Open Type	+50	4005 Lever	10 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>16</sub>
7001-MSR	3.00	Open Type	+50	4005 Lever	10 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>16</sub>

### No. 8000 Series—With Wood Handles



No. 8000-M

No. 8000 Series Guards are identical in style, number for number, to the No. 7000 Series except for the handles.

The handle is made of polished hardwood. Sturdy and well constructed for long service.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
*8000	\$2.50	Plain Clsd.	40-100	4003 Keyless	14	1 <sup>3</sup> / <sub>8</sub>
*8000-R	3.00	Refl. Clsd.	40-75	4003 Keyless	14	1 <sup>1</sup> / <sub>16</sub>
8000-S	3.00	Plain Clsd.	40-100	4005 Lever	14	1 <sup>3</sup> / <sub>8</sub>
8000-SR	3.50	Refl. Clsd.	40-75	4005 Lever	14	1 <sup>1</sup> / <sub>16</sub>
*8001	2.50	Open Type	40-100	4003 Keyless	12	1 <sup>3</sup> / <sub>8</sub>
8001-R	3.00	Open Refl.	100	4003 Keyless	12	1 <sup>3</sup> / <sub>8</sub>
8001-S	3.00	Open Type	40-100	4005 Lever	12	1 <sup>3</sup> / <sub>8</sub>
8001-SR	3.25	Open Refl.	100	4005 Lever	12	1 <sup>3</sup> / <sub>8</sub>
8002	5.50	Open Type	200	4003 Grounded	.....	.....
*8000-M	2.25	Plain Clsd.	50	4003 Keyless	12 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>
*8000-MR	2.75	Refl. Clsd.	50	4003 Keyless	12 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>
8000-MS	2.75	Plain Clsd.	50	4005 Lever	12 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>
8000-MSR	3.25	Refl. Clsd.	50	4005 Lever	12 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>
*8001-M	2.25	Open Type	50	4003 Keyless	10 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>16</sub>
*8001-MR	2.50	Open Type	50	4003 Keyless	10 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>16</sub>
8001-MS	2.75	Open Type	50	4005 Lever	10 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>16</sub>
8001-MSR	3.00	Open Refl.	50	4005 Lever	10 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>16</sub>

\*These guards can be supplied with grounding attachment. For guards so equipped, add 20 cents each to the price.

†Rough service lamp.

The letter "R" indicates a reflector guard.

The letter "S" denotes switch or lever.

Guards can be supplied with thumbnut instead of screw at base of cage at no additional charge.

Cages also supplied for regular weather-proof sockets.

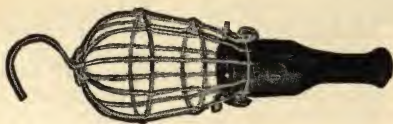
Rubber coated cages available at slight extra cost.

For special Loxon attachment, add 20 cents each.



## No. 7100 Series McGill Portable Lamp Guards

With Rubber Handles



No. 7100

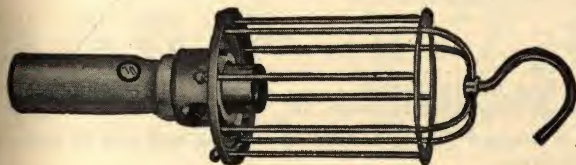
No. 7100 Series incorporates two features: a wire collar instead of a flat steel collar, and a clamp arrangement instead of screws to hold the cage to the handle. This clamp arrangement allows for variation in the size of the handle and makes lamp changing easier and faster because it requires no tools.

No.	Each	Cage	Lamp Size Watts	Socket	Lgth. In.	Wt. Lb. Each
7100	\$2.50	Plain Closed	40-100	4003 Keyless	14	13 <sup>1</sup> / <sub>8</sub>
7100-R	2.70	Refl. Closed	40-100	4003 Keyless	14	17 <sup>1</sup> / <sub>16</sub>
7100-S	2.80	Plain Closed	40-100	4005 Lever	14	13 <sup>1</sup> / <sub>8</sub>
7100-SR	3.00	Refl. Closed	40-100	4003 Keyless	14	17 <sup>1</sup> / <sub>16</sub>
*7100-M	2.30	Plain Closed	50	4003 Keyless	12 <sup>3</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>16</sub>
*7100-MR	2.40	Refl. Closed	50	4003 Keyless	12 <sup>3</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>16</sub>
*7100-MS	2.60	Plain Closed	50	4005 Lever	12 <sup>3</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>16</sub>
*7100-MSR	2.70	Refl. Closed	50	4005 Lever	12 <sup>3</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>16</sub>

\*Rough service lamp.

## McGill Bulldog Portable Lamp Guards

With Wood Handles



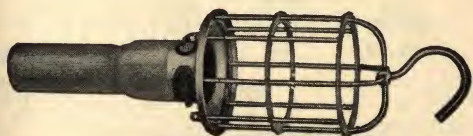
No. 4675

Made of best grade steel wire; hook and cage are zinc plated. Polished hardwood handle, furnished with McGill Levolver Socket or keyless socket for any size lamp cord.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
4675	\$3.00	Plain Closed	25-100	4004 Lever	15 <sup>1</sup> / <sub>4</sub>	13 <sup>1</sup> / <sub>16</sub>

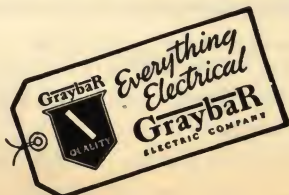
## No. 4000 McGill Dreadnaught Portable Lamp Guards

With Wood Handles

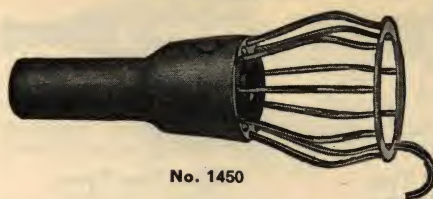


A heavy closed cage guard used by railroads, quarries and other heavy industries. High grade steel wire cage and hook are zinc plated. Weatherproof composition keyless socket.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
4000	\$2.80	Plain Closed	25-60	4003 Keyless	14 <sup>7</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>16</sub>



## McGill National Portable Lamp Guards With Wood Handles



No. 1450

A heavy duty guard used by railroads, machine shops, etc. Heavily tinned steel wire cage. Socket has spring contacts.

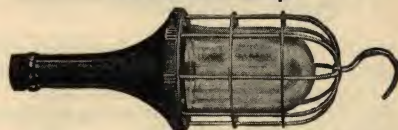
No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
*1450	\$2.50	Plain Open	25-40	4003 Keyless	11 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>8</sub>
*1450-R	3.00	Refl. Open	25-40	4003 Keyless	11 <sup>1</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>16</sub>
1451	2.50	Plain Open	25-75	4003 Keyless	11	11 <sup>1</sup> / <sub>16</sub>
1452	2.75	Plain Open	25-100	4003 Keyless	11 <sup>3</sup> / <sub>4</sub>	13 <sup>1</sup> / <sub>16</sub>

\*Will take 50-watt rough service lamp.

The letter "R" indicates a reflector guard.

## No. 3005 McGill Safety Vaporproof Portable Lamp Guards

With Tight-Seating Globes—With Insurok Handles For 100-Watt Lamps



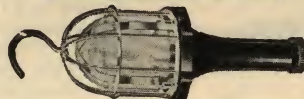
Wherever inflammable gases, vapor or materials are present, safety guards should be used.

Insurok handle is available in brown or black. Brass or black oxidized cage in made of  $\frac{3}{32}$ -inch solid brass wire reinforced with three solid brass rings.

No.	Each	Cage	Lamp Size Watts	Socket	Length Inches	Wt. Lb. Each
3005	\$12.00	Plain Closed	100	4003 Keyless	16 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>
3005-R	13.00	Refl. Closed	100	4015 Keyless	16 <sup>1</sup> / <sub>2</sub>	4 <sup>3</sup> / <sub>8</sub>

## No. 3002 McGill Safety Vaporproof Portable Lamp Guards

With Bakelite Handles



No. 3002

Mercerized bakelite handle is equipped with bakelite packing nut and rubber packing gland. Gland makes guard waterproof and acts as a strain relief. Cage is of brass wire with two brass rings for bracing and is grounded to the socket. Globe is of heat and impact resisting glass.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
3002	\$11.00	Plain Closed	60	4015	14 <sup>1</sup> / <sub>2</sub>	2 <sup>5</sup> / <sub>16</sub>
3002-R	12.00	Refl. Closed	60	4015	14 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>

No. 3002-G Globes Only.....per dozen \$15.00

## McGill Safety Vaporproof Guards



No. 3007

Strong, portable guard that will light up those hard-to-get-at places without the lamp being exposed to moisture. Will float if dropped in water.

Equipped with an extra strong swivel hook.

No. 3007 is shock-proof, non-sparking, and entirely free of metal, and has durable fiber cage, treated to prevent warping. Handle is made of plastic.

No.	Each	Description	Weight Ounces
3006	\$7.50	Plain Steel Cage	25
3006-R	8.00	Reflector Steel Cage	26
3007	8.50	Fiber Cage	23



### Protex Rubber Handle Portable Lamps



No. 100



No. 112

With oil-resisting high-grade rubber handle, Watertite type molded rubber socket and steel wire guard with hook.

#### Closed End Type Without Reflector

No.	Each	Watts	Std. Pkg.	Pkg. Wt. Lb.
100	\$3.50	25-60	30	41
102	3.80	75-100	30	42
103	6.30	200	30	47
<b>With Reflector</b>				
104	\$4.40	25-60	30	45
106	4.70	75-100	30	47
107	7.40	200	30	52

#### Open End Type Without Reflector

No.	Each	Watts	Std. Pkg.	Pkg. Wt. Lb.
108	\$3.50	25-60	30	43
110	3.80	75-100	30	44
111	6.30	200	30	51
<b>With Reflector</b>				
112	\$4.40	25-60	30	49
114	4.70	75-100	30	49
115	7.40	200	30	57

### Protex Double Outlet Portable Lamps



Any of the above numbers can be furnished with plug-in type side outlet which permits a tool to be plugged into the handle of the portable lamp as illustrated.

For Parallel Type Plug. When ordering add letter (K) to above number and add \$1.25 to price.

For Polarity Type Plug. When ordering add letter (Z) to above number and add \$1.35 to price.

For Three Wire Type Side Outlet. When ordering add letter (K3) to above number and add \$1.45 to price.

#### Rubber Insulated Guards

For safe use around switchboards, in electric sub-stations and on electric locomotives. For chemical and oil conditions.

Guard is thoroughly insulated with an even coating of tough rubber to prevent electrical shorts.

For rubber covered type guard on any of the above numbers add letter (I) to above number and add \$3.00 to price.

#### With Fiber Guards



Consists of rubber handle, keyless socket and screwless type of closed end fiber guard with hook and reflector. Guard is made of the

strongest fiber obtainable and is waterproof.

Standard package 30, weight 37 pounds.

No.	Each	Watts	Std. Pkg.	Pkg. Wt. Lb.
117	\$17.50	60-100	30	118
118	7.00	60-100	30	118

\*Without reflector.

#### With Bakelite Guards



Consists of rubber handle, keyless socket and closed end guard with hook. Entire guard is molded Bakelite with a

canvas filler to give it maximum strength.

Standard package, 30.

No.	Each	Watts	Std. Pkg.	Pkg. Wt. Lb.
119	\$120	40-60	30	120
120	40-60	40-60	30	120
Weight, Standard Package	36	40		

\*Without reflector.

### Protex Portable Inspection Lamps

Designed for use on jobs where concentrated illumination is required, such as automobile body and castings inspection.

Unit consists of rubber handle, keyless socket and highly polished reflector.

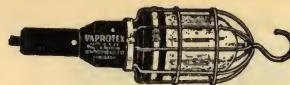
Standard package, 30.

No.	Each	Watts	Std. Pkg.	Pkg. Wt. Lb.
121	\$120	40-60	30	121
122	40-60	40-60	30	121
Reflector Shape	4 1/2 x 5 Bell			
Weight, Standard Package	34			

If key type socket is desired, specify so, and add \$1.00 to price.

### Vaprotex Portable Lamps

#### With Steel Wire Guard



For illumination purposes where gases, dust and other explosives exist. When assembled according to our design they may be used in the most hazardous locations with absolute safety. It is impossible for vapors to enter the glass globe.

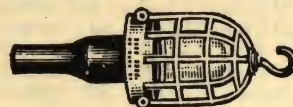
Includes rubber handle, bakelite socket, glass globe and steel wire guard with hook.

Standard package, 12.

No.	Each	Watts	Std. Pkg.	Pkg. Wt. Lb.
1200	\$11.20	60-75	100	1203
1201	12.40	60-75	100	1203
1202	13.00	60-75	100	1203
1203	14.20	60-75	100	1203
Weight Standard Package	37	42	40	48

For Rubber Covered Guard on any of the above numbers add the letter (I) to number and add \$4.70 to list price.

#### With Non-Sparking Aluminum Guards



Includes rubber handle, bakelite socket, glass globe, and non-sparking aluminum guard with hook.

Standard package, 12.

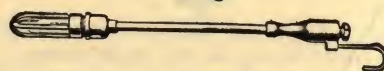
No.	Each	Watts	Std. Pkg.	Pkg. Wt. Lb.
1204	\$17.90	60-75	100	1207
1205	19.30	60-75	100	1207
1206	19.70	60-75	100	1207
1207	21.10	60-75	100	1207
Weight Standard Package	44	48	46	51

If Ground Clip is desired, specify so, and add 60 cents to list price.

If Neotex Handles are desired, add \$2.80 to list price.

### Vaprotex Bunghole Lamps

#### Long



A vaporproof lighting unit for inspecting gasoline, oil, chemical and other drums used for explosives.

Made of non-sparking metal throughout.

Packed 1 in a standard package.

No.	Each	Watts	Lgth. In.	O.D. In.	Wt. Lb. Std. Pkg.
1300	\$27.00	15	30	1 1/2	5
1303	29.00	25	32 1/2	1 1/2	5 1/2

#### Short



No.	Each	Watts	Lgth. In.	O.D. In.	Wt. Lb. Std. Pkg.
1301	\$22.00	15	12	1 1/2	3 1/2
1304	24.00	25	14 1/2	1 1/2	3 1/2

### No. 1302 Protex Bunghole Lamps



A non-vaporproof unit for inspecting beer, lard, syrup and other barrels used for non-explosive solutions.

Length 30 inches. Outside diameter 1 inch.

Takes 15 watt bulb.

Packed 1 in standard package, weight, 4 pounds.

No. 1302..... each \$19.00



## Safeway Lo-Volt Portable Lamps

75 Watts, 60 Cycles



This portable lamp assures a much higher factor of safety, reducing the possibility of shock and burns when used in boilers, tanks, etc., on steel, cement or damp wood floors and other hazardous places.

Composed of a 75-watt, 125, 32 or 6-volt a.c. transformer, molded into a high quality, heat and oil resisting rubber jacket. Primary lead is a 10-foot, No. 16 all rubber cord, to which is attached a Safeway plug with cord grip. Secondary lead is a 20-foot, No. 14 all rubber cord, and may be equipped with either a Protex or Vaprotex unit.

Packed 1 in a standard package.

## Complete with Protex and Safeway Plug

No.	With Reflector Each	Without Reflector Each	VOLTAGE		Wt., Lb. Std. Pkg.
			Primary	Secondary	
1600	.....	\$69.50	125	6	13
1601	\$70.40	.....	125	6	13

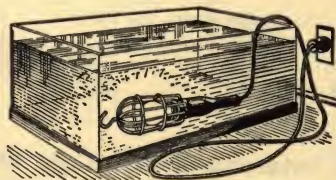
## Complete with Vaprotex and Steel Guard

No.	With Stuffing Box Each	Without Stuffing Box Each	VOLTAGE		Wt., Lb. Std. Pkg.
			Primary	Secondary	
1620	.....	\$77.20	125	6	15
1621	\$79.00	.....	125	6	15

## Complete with Vaprotex and Aluminum Guard

No.	With Stuffing Box Each	Without Stuffing Box Each	Primary	Secondary	Wt., Lb. Std. Pkg.
1630	.....	\$83.90	125	6	15
1631	\$85.70	.....	125	6	15

## No. 123 Protex Waterproof Trouble Lamps



A rubber handle portable lamp with 25 feet of No. 18-2 type S cord and Safeway cap with grip.

Packed 2 in a carton, 12 in a standard package.

Weight per dozen, 46 pounds.

No. 123.....each \$9.20

## No. 1153 Closed End Lamp Guards

For No. 103 Protex Rubber Handle Portable Lamps  
For 200 Watt Globes

Guard is furnished only with hook, no reflector.

Standard package, 30; weight, 27 pounds.

No. 1153.....each \$4.30

## No. 1173 Protex Lamp Guard Handles

## Keyless Socket Type

Oil-resisting handle of rubber compound. Neotex is a special compound embodying Neoprene. It is absolutely proof against oil and many chemicals. No. of watts, 40-200. Standard package, 30. Weight, 30 pounds.

No. 1173, Regular Rubber Handle.....each \$1.70

No. 1173, In Neotex Rubber.....each 3.20

## Drop-Lite Portable Lamp Guards



No. 2060

Consists of a rubber handle, socket, plated wire guard with hook and half shade reflector, No. 18-2 SJ approved rubber cord and non-breakable rubber plug.

Rubber handle is made of an oil-resisting compound and will protect the user against electric shocks and burns and the lamp from breakage. Furnished with or without side outlet; also with or without switch.

Wire guard is heavily constructed. Socket is simple to wire. A strain relief is provided to prevent the wires from detaching.

## Without Side Outlet

## With Handle, Switchless Socket, Guard, Cord and Plug

No.	Each	Cord Lgth. Feet	Watts	No. in Carton	No. in Std. Pkg.
2060	\$3.65	20	75	12	24
2560	4.15	25	75	12	24
3560	5.15	35	75	12	24
5060	6.65	50	75	12	24

## With Handle, Socket with Switch, Guard, Cord and Plug

No.	Each	Cord Lgth. Feet	Watts	No. In. Carton	No. In. Std. Pkg.
2060S	\$3.85	20	75	12	24
2560S	4.35	25	75	12	24
3560S	5.35	35	75	12	24
5060S	6.85	50	75	12	24

## With Side Outlet

## With Handle, Switchless Socket, Guard, Cord and Plug

No.	Each	Cord Lgth. Feet	Watts	No. In. Carton	No. In. Std. Pkg.
2060K	\$4.40	20	75	12	24
2560K	4.90	25	75	12	24
3560K	5.90	35	75	12	24
5060K	7.40	50	75	12	24

## With Handle, Socket with Switch, Guard, Cord and Plug

No.	Each	Cord Lgth. Feet	Watts	No. In. Carton	No. In. Std. Pkg.
2060KS	\$4.60	20	75	12	24
2560KS	5.10	25	75	12	24
3560KS	6.10	35	75	12	24
5060KS	7.60	50	75	12	24

## Miscellaneous Parts

Packed 12 in a carton; 24 in a standard package.

No.	Description	Each
206	Handle, Switchless Socket and Guard.....	\$1.45
206S	Handle, Socket with Switch and Guard.....	1.65
206K	Handle, Switchless Socket, Side Outlet and Guard.....	2.20
206KS	Handle with Switch, Side Outlet, Socket and Guard.....	2.40
1	Handle and Socket Only.....	.65
1S	Handle and Socket with Switch.....	.85
1K	Handle, Switchless Socket and Side Outlet..	1.40
1KS	Handle with Switch, Side Outlet and Socket	1.60
260	Guard Only.....	.80
1420	Plug, 25 in Carton, 100 in Std. Pkg.....	.20

For cord of other lengths than above, add to or subtract 10 cents from price for each foot of cord.



### Bryant Brass Socket Bodies

Listed by Underwriters' Laboratories, Inc.

#### With Key

No. 10 Single-Pole  
250 Watts, 250 Volts

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
10	\$36.00	25	250	33

No. 12 Single-Pole High Capacity  
660 Watts, 250 Volts

12	\$70.00	25	250	42
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#### No. 13 Keyless

660 Watts, 250 Volts

13	\$28.00	25	250	38
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#### No. 15 with Pull Chain

Single Pole

250 Watts, 250 Volts

15	\$50.00	25	250	35
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#### No. 34 With Push Button

Single Pole

660 Watts, 250 Volts

34	\$42.00	25	250	34
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### No. AW Bryant New Wrinkle Porcelain Cleat Bases

Supporting screw spacing, 2 1/2 inches.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
AW	\$45.00	10	100	28

### No. BA Bryant New Wrinkle Porcelain Angle Concealed Bases

Screw spacings, 1 1/8 inches.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
BA	\$46.00	10	100	23

### Bryant Hemco Bright Dipped Shell Sockets

#### Standard Size



No. HT10



No. HA15

#### Key Sockets

250 Watts, 250 Volts

No.	Per 100	Style Cap	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
HA10	\$43.00	1/8-Inch Cap.....	25	250	50
HC10	\$50.00	3/8-Inch Cap.....	25	250	52
HT10	\$42.00	Pendent Cap.....	25	250	44

#### Pull Sockets

250 Watts, 250 Volts

HA15	\$57.00	1/8-Inch Cap.....	25	250	52
HC15	\$64.00	3/8-Inch Cap.....	25	250	54
HT15	\$56.00	Pendent Cap.....	25	250	48

### Bryant Open Catch Brass Socket Caps

#### No. HA 1/8-Inch Female



No. HA

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
HA	\$11.00	25	250	12

#### No. HB 1/4-Inch Female

HB	\$32.00	5	25	1
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#### No. HC 3/8-Inch Female

HC	\$18.00	25	100	5
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#### No. HD 1/2-Inch Female

HD	\$34.00	25	50	4
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#### No. HM 1/8-Inch Female Angle

HM	\$42.00	25	50	3
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#### No. HP 3/8-Inch Female Angle

HP	\$48.00	5	25	1
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#### No. HQ Cord Grip

For 1/8 to 1/2-inch cords.

HQ	\$30.00	25	100	7
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#### No. HT Pendent Cap

With composition bushing; 1 1/8-inch hole.

HT	\$10.00	25	250	7
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#### No. HU Strain Relief Pendent Cap

With porcelain bushing; 1 1/8-inch hole.

HU	\$10.00	25	100	4
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### Bryant New Wrinkle Porcelain Bases



No. AX



No. AZ

#### No. AX Slotted Base

No.	Per 100	O.D. Base Inches	Supporting Screw Spacing Inches	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
AX	\$35.00	2 1/16	1 1/8	10	100	19
AY	35.00	2 1/16	1 1/8	10	100	19

#### No. AZ Large Concealed Base

AZ	\$45.00	2 3/4	2 1/4	10	100	32
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Fits Type 500 Adaptiboxes, Types GN, HM, and W Octagonal Unilets and Size 10 Round Opening Pipe Taplets.

### Bryant Interchangeable Cold Molded Black Composition Socket Caps and Bodies

These sockets, made of black composition, are suitable for installation in many cases where metal shell sockets may not prove satisfactory. Each cap will fit either body.

#### Socket Caps



FA



FQ



FT

Wash nickel is standard finish on exposed metal parts.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
FA	\$35.00	1/8-Inch Metal Bushing.....	10	100	13
FC	\$42.00	3/8-Inch Metal Bushing.....	10	100	15
FQ	\$36.00	Cord Grip 3/8 to 1/2-Inch.....	10	100	16
FT	\$20.00	Pendent Cap.....	10	100	10



No. 3770

3770	\$40.00	Key, 250 Watts, 250 Volts...	10	100	23
3773	\$34.00	Keyless, 660 Watts, 250 Volts.	10	100	14

#### Socket Bodies

With Groove for Weatherproof Shade-Holders



No. 3773



## Bryant Titan Brass Socket Caps and Bodies

Listed as Standard by Underwriters' Laboratories.



No. TA



No. TT



No. TA-4315  
Showing  
Method of  
Fastening  
Shell to Cap

The connection between the socket body and cap is effected by means of a threaded ring which engages with a corresponding thread in the shell.

The threaded ring is packed with the socket body.

Each cap will fit all bodies.

Packed 25 in a carton.

### Titan Brass Caps

No.	Per 100	Description	Std. Pkg.	Wt. Lb.
TA	\$19.00	1/8-Inch Cap.....	250	11
TB	35.00	1/4-Inch Cap.....	50	3
TC	22.00	3/8-Inch Cap.....	100	5
TQ	33.00	Cord Grip, 3/8 to 1/2-Inch Cap....	100	7
TT	15.00	Pendent Cap.....	250	6

### Titan Brass Socket Bodies

with Rings (without Caps)

250 Watts, 250 Volts

4310	\$54.00	*Key, Single-Pole.....	250	39
4315	66.00	Pull, Single-Pole.....	250	40

660 Watts, 250 Volts

4313	\$38.00	Keyless.....	250	45
4314	56.00	Push-Button.....	250	40

\*Standard length of key, 1 inch.

### Bryant Bakelite Titan Socket Bodies and Caps

Titan Caps



No. LA



No. LC



No. LG



No. LT

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lb.
LA	\$14.00	1/8-Inch Female Cap.....	10	100	4
LC	18.00	3/8-Inch Female Cap.....	10	100	4 3/4
LG	26.00	Cord Grip Cap for 3/8 to 1/2-Inch Cord.....	10	100	5 1/2
LT	14.00	Pendent Cap, 1 1/2-Inch.....	10	100	2

### Titan Bodies with Rings (without Caps)

250 Volts



No. 4710



No. 4713



No. 4714



No. 4715

4710	\$48.00	Key, 250 Watts, S. P.....	10	100	16
4713	37.00	Keyless, 660 Watts.....	10	100	19
4714	48.00	Push, 660 Watts.....	10	100	19
4715	54.00	Pull, 250 Watts, S. P.....	10	100	16

Standard chain is 6 1/2 inches long.

### No. 66237 Bryant Electrolite Keyless Sockets

660 Watts, 250 Volts



The cap and shell screw together. Standard finish is brush brass. Cap, 1/8-inch. Carton, 50. Standard package, 250. Weight per standard package, 45 pounds.

No. 66237.....per 100 \$98.00

## Bryant Lumiline Lampholders

660 Watts, 250 Volts

Listed as Standard by Underwriters' Laboratories

Designed to provide compact mounting means for Lumiline lamps used extensively in the illumination of show cases, display windows, signs, cove and trough lighting and other applications.

### End Caps

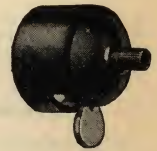
Shallow Collar



No. 3890



No. 3889



No. 3893

Has a five-point engagement with lamp which insures secure contact at all times.

No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lb.
3890	\$10.80	Black	50	200	2
3890-W	12.00	White	50	200	2

### Deep Collar

3889	\$23.20	Black	50	200	5
3889-W	32.50	White	50	200	5

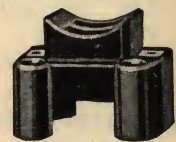
### Deep Collar—with Switch

3893	\$26.40	Black	50	200	5
3893-W	27.60	White	50	200	5

### Bases—Flush or Surface Mounting



No. 3891



No. 3892

Off-center terminal arrangement in wire channel makes wiring easy in any installation. Mounting hole spacings for flush, 1 1/8 inches; for surface, 1 inch.

### Single

No.	Each	Description	Carton	Std. Pkg.	Wt., Lb.
3891	\$20.40	Black.....	50	200	7
3891-W	22.80	White.....	50	200	7

### Twin

3892	\$31.20	Black.....	50	200	13
3892-W	33.60	White.....	50	200	13

## Bryant Lampholders

For Mercury, Black Light and Sun Lamps

660 Watts, 250 Volts

Listed by Underwriters' Laboratories, Inc.

With Admedium screw shell. The regular medium base lamp will not fit this lampholder.

Packed 10 in a carton, 100 in a standard package.



No. 4383

### With Female Caps

No.	Per 100	Size In.	Wt., Lb. Std. Pkg.
4381	\$108.00	1/8	30
4383	108.00	3/8	30



**Bryant Intermediate Base Sockets**

Listed by Underwriters' Laboratories, Inc.

**Socket Caps**

No. 1A



No. 1T

 $\frac{1}{8}$ -Inch

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
IA	\$21.00	25	100	2 $\frac{1}{2}$

**Pendent**With bakelite bushing  $1\frac{1}{32}$ -inch hole.

IT	\$21.00	25	100	2
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**Socket Bodies**

No. 4610



No. 4613

**Key**

75 Watts, 125 Volts

4610	\$55.00	25	100	7
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**Keyless**

75 Watts, 250 Volts

4613	\$37.00	25	100	7
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Above caps and bodies are Wrinkle type and are interchangeable.

Standard finish is brush brass. Standard length of chain on pull socket bodies is 4 inches.

**Keyless Candle Sockets**

75 Watts, 250 Volts



Composition.

Has  $\frac{1}{8}$ -inch female thread bushing.

Adjustable,  $3\frac{1}{2}$  to 5 inches long. Outside diameter of paper jacket,  $\frac{7}{8}$  inch.

9652	\$30.00	25	100	14
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**Green Bakelite Pendent Sockets**

75 Watts, 250 Volts



Weatherproof.

Has 6-inch leads of No. 18 stranded rubber covered weatherproof wire.

For longer wires add \$2.00 per 100 devices for each extra foot on each conductor.

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
9650	\$28.00	25	100	4 $\frac{1}{4}$

**Porcelain Cleat Receptacles**

75 Watts, 250 Volts



For surface wiring. Diameter base,  $1\frac{1}{2}$  inches; over lugs,  $1\frac{7}{8}$  inches; overall height,  $1\frac{1}{16}$  inches; screw spacing,  $1\frac{1}{2}$  inches.

9653	\$24.00	25	100	16
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**Porcelain Sign Receptacles**75 Watts, 250 Volts  
No. 9663

For metal signs. Two screw mounting, screw terminals.

Fits 1-inch holes. Depth of back,  $1\frac{1}{32}$  inches. Equipped with No. 8-32,  $\frac{1}{2}$ -inch long, bronze supporting screws spaced  $1\frac{3}{8}$  inches.

9663	\$30.00	25	100	13
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No. 9690



For metal signs. Screw ring, screw terminals.

Fits  $1\frac{1}{16}$ -inch holes; outside diameter of both screw ring and body,  $1\frac{3}{8}$  inches. Depth of back, 1 inch.

9690	\$29.00	25	100	13
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**Adapters**

Medium base to intermediate base adapter.

9691	\$21.00	25	100	4
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**Bryant Candelabra Lampholders**

75 Watts, 125 Volts

**Key Socket with Wrinkle Style Shell**

Fastening

With  $\frac{1}{8}$ -Inch Cap

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
434	\$80.00	25	100	9

**Keyless Socket with Threaded Shell**

Fastening

With  $\frac{1}{8}$ -Inch Cap

321	\$70.00	25	100	6
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**Porcelain Keyless Socket**

With Male Thread Stud

Supporting stud is  $\frac{5}{16}$  inch outside diameter, 27 threads per inch.

Outside diameter of porcelain,  $1\frac{1}{16}$  inch. Length over all,  $1\frac{3}{8}$  inches.

328	\$38.00	25	100	3
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**With Female Thread Bushing**

Bushing is threaded for  $\frac{1}{8}$ -inch iron pipe, .405-inch outside diameter, 27 threads per inch.

Outside diameter of porcelain,  $1\frac{1}{16}$  inch. Length over all,  $1\frac{3}{32}$  inches.

347	\$32.00	25	100	5
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**Bryant Miniature and Candelabra****Receptacles**

75 Watts, 125 Volts

**Porcelain Cleat**

Outside diameter of base,  $1\frac{1}{32}$  inches. Thickness of base,  $\frac{1}{2}$  inch. Height No. 366,  $1\frac{1}{8}$  inches; No. 367,  $1\frac{1}{32}$  inches. Supporting screw spacing,  $1\frac{1}{16}$  inches.

No.	Per 100	Miniature Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
366	\$26.00	25	100	10
367	\$26.00	25	100	11

**Miniature**

Outside diameter of base,  $1\frac{1}{16}$  inches. Thickness of base,  $\frac{3}{32}$  inch. Height,  $\frac{3}{4}$  inch. Supporting screw spacing,  $1\frac{1}{16}$  inch.

*9445	\$25.00	25	200	9
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**Candelabra**

Outside diameter of base,  $1\frac{11}{32}$  inches. Thickness of base,  $\frac{1}{16}$  inch. Height,  $\frac{1}{8}$  inch. Supporting screw spacing,  $1\frac{1}{16}$  inches.

*9446	\$25.00	25	200	13
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**Candelabra with Oblong Base**

Base,  $1\frac{1}{16} \times 1$  inch. Thickness of base,  $\frac{1}{32}$  inch. Supporting screw spacings,  $1\frac{1}{32}$  by  $1\frac{1}{32}$  inch. Height, No. 325,  $1\frac{1}{16}$  inches; No. 612,  $1\frac{1}{16}$  inches.

No.	Per 100	Porcelain Base	Std. Pkg.	Wt. Lb. Std. Pkg.
325	\$22.00	10	100	9
*612	\$46.00	10	100	9

**Porcelain Base****Composition Base****Porcelain for Metal Signs****Candelabra**

Hole required,  $\frac{3}{4}$  inch in diameter. Depth, 1 inch. Supporting screw spacing,  $1\frac{1}{16}$  inches. Wires clear the supporting surface by  $1\frac{1}{16}$  inches.

388	\$36.00	10	100	10
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**With Removable Ring for Metal Signs**

Hole required,  $\frac{3}{4}$  inch in diameter. Diameter,  $1\frac{1}{16}$  inches. Depth No. 389,  $\frac{5}{8}$  inch; No. 390,  $\frac{1}{8}$  inch. Thickness of ring,  $\frac{1}{4}$  inches.

No.	Per 100	Candelabra	Std. Pkg.	Wt. Lb. Std. Pkg.
390	\$36.00	25	100	9

\*Not listed as standard by Underwriters' Laboratories.



**Bryant Prefocusing Lampholders**

Listed by Underwriters' Laboratories, Inc.

Designed so that the light source is always at the focal point of the reflector. Used on landing fields, projection lamps, for general photographic work, etc., where correct focusing and reflecting of light are essential.



No. 3740



No. 3741

**For Medium Prefocusing Lamps**

1000 Watts, 250 Volts

Black Bakelite, for Surface or Concealed Wiring

No.	Per 100	Height Over-all Inches	Screw Centers Inches	Diameter Inches	Cord Hold Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
3740	\$149.60	1 7/8	2	...	...	10	100	21
<b>Porcelain, with Pendant Type Cap</b>								
3741	121.20	2 5/8	...	1 3/4	1 3/2	10	100	35
<b>Porcelain, with Fibre Washer</b>								
3742	116.00	1 7/8	1 5/8	1 3/4	...	10	100	32

**For Mogul Prefocusing Lamps**

2500 Watts, 250 Volts

Porcelain



No.	Per 100	Height Over-all Inches	Screw Centers Inches	Diameter Inches	Cord Hold Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
3842	\$451.00	2 3/4	3	3 3/4	...	5	50	50

**Bryant Marine, Railway and Industrial Lamp Receptacles****Heavy Duty**

With Bakelite Base and Lamp Grip  
Diameter of base, 2 inches. Height, 1 13/16 inches. Supporting screw spacing, 1 3/8 inches.

Key receptacle, center of base to end of key, 1 11/16 inches.

Single Pole Key, 250 Watts, 250 Volts

Regularly supplied with two 3/4-inch 8x32 round head pointed brass screws.  
Center of base to end of key, 1 11/16 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
4160	\$88.00	10	100	28

Keyless, 660 Watts, 250 Volts

Regularly supplied with two 3/4-inch 8x32 round head pointed brass screws.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
4161	\$60.00	10	100	21

Bakelite Screw Shell Insulator

For Nos. 4160 and 4161.

Has screw mounting.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
4260	\$40.00	10	100	9 1/2

**Watertight Keyless Receptacle**  
With Composition Base  
660 Watts, 250 Volts

Has one binding screw on each terminal.

Diameter, 2 3/4 inches. Height above mounting surface, 1/8 inch. Four mounting screw holes on 2 5/16 inch circle

Regularly furnished without sealing compound over terminal plates and fastening screws.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
4146	\$44.00	10	100	36



No. 4260

No. 4146

**Bryant Porcelain Socket Bodies****No. 70 Single Pole-Key**

250 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
70	\$44.00	10	100	26



No. 70

**No. 71 Push-Button**

660 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
71	\$76.00	10	100	31



No. 71

**No. 73 Keyless**

660 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
73	\$34.00	10	100	16



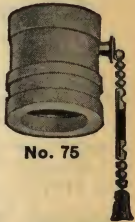
No. 73

**No. 75 Single-Pole Pull**

250 Watts, 250 Volts

No. 513 insulating link is inserted in the chain. Standard finish of exposed metal is nickel.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
75	\$85.00	10	100	30



No. 75

**Bryant Porcelain Caps**

Standard finish of metal on caps is Perma nickel.

**No. PA 1/8-Inch Female Brass**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
PA	\$38.00	10	100	14



No. PA

**No. PC 3/8-Inch Female Brass**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
PC	\$42.00	10	100	14



No. PP

**No. PD 1/2-Inch Female Brass**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
PD	\$58.00	10	100	16

**No. PP 3/8-Inch Female Brass Angle**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
PP	\$108.00	10	100	23

**No. RW 1/2-Inch Female Brass Angle**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
RW	\$114.00	10	100	28

**No. PQ Cord Grip**

For from 3/8 to 1/2-inch cord.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
PQ	\$36.00	10	100	17

**No. PT Pendant**

With 1/8-inch cord hole.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
PT	\$20.00	10	100	10



No. PQ



No. PT

**Bryant Porcelain Bases**

No. PZ

**No. PZ Concealed Base**

This base will fit Type No. 500 Adaptibox.

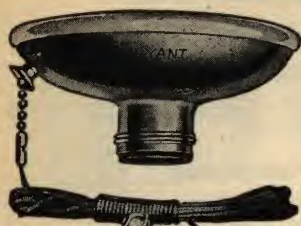
Cat. No.	Per 100	O.D. Inches	Supporting Screw Spacing Inches	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
PZ	\$30.00	2 3/4	1 1/8, 2 1/2	10	100	38

**No. RM 3/4 and 4-Inch Box Base**

Cat. No.	Per 100	O.D. Inches	Supporting Screw Spacing Inches	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
RM	\$57.00	4 1/8	2 3/4, 3 1/2, 3 3/2	5	50	37



## Bryant Surface and Outlet Box Receptacles With Binding Screws



No. 4104

These receptacles are flat on the back and are therefore suitable for use either on outlet boxes or without them. Also approved for use on walls or ceilings containing metal lathing and upon metal surfaces.

The standard finish is brush brass which will be furnished when no finish is specified.

### Keyless

660 Watts, 250 Volts  
For 3¼ or 4-Inch Outlet Boxes

Diameter of base, 4½ inches. Height, 1½ inches. Supporting screw spacings, 2¾ and 3½ inches.

Carton, 2; standard package, 50. Weight package, 46 lb.  
No. 4100.....per 100 \$110.00

### Pull

250 Watts, 250 Volts  
For 3¼ or 4-Inch Outlet Boxes

Diameter of base, 4½ inches. Height, 2 inches. Supporting screw spacings, 2¾ and 3½ inches.

Equipped with short chain, 4 feet of small cord, and small composition pendant ball.

Carton, 2; standard package, 50. Weight package, 56 lb.  
No. 4104.....per 100 \$216.00

## Bryant Porcelain Outlet Box Receptacles With Shade-Holder Groove



No. 4278

Can be mounted on standard 3¼ and 4-inch outlet boxes.

Diameter of base, 4½ inches. Height, 2½ inches. Supporting screw spacing, 2¾ to 3½ inches on centers.

Pull chain receptacles are fitted with nickel chains and tassel pendants but will be furnished with brush brass chains at no extra charge.

### Keyless—660 Watts, 250 Volts

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs.
4273	\$116.00	Keyless Receptacle.....	2	50	59

### Pull—250 Watts, 250 Volts

4275	\$168.00	6½-Inch Chain.....	2	50	58
4278	168.00	Short Chain, 4-Foot Cord.....	2	50	58

## Bryant Porcelain Medium Base Lampholders

660 Watts, 250 Volts  
Listed by Underwriters' Laboratories, Inc.



No. H227



No. H73

With shadeholder groove and screw terminals.

No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs.
H227	\$37.00	For 3¼-Inch Box.....	5	100	62
H228	42.00	For 4-Inch or Switch Box.....	5	50	45
H73	44.00	Mounted on 3¼-Inch Cadmium-Plated Cover.....	10	100	50
H74	50.00	Mounted on 4-Inch Cadmium-Plated Cover.....	5	100	68

## Bryant Porcelain Medium Base Lampholders

250 Watts, 250 Volts

Listed by Underwriters' Laboratories, Inc.

With shadeholder groove.

Packed 10 in a carton, 50 in a standard package.

### Removable Interior Type

For 3¼-Inch Boxes  
Diameter, 3½ Inches

No.	Per 100	Description	Wt., Lb. Std. Pkg.
H165	\$62.00	6-Inch Chain....	30
H167	67.00	Chain & Insulator	30
H168	62.00	Chain & Cord...	30

For 4-Inch and Switch Boxes  
Diameter 4½ Inches

H185	\$72.00	6-Inch Chain....	40
H187	77.00	Chain & Insulator	40
H188	72.00	Chain & Cord...	40

### One-Piece Type

For 3¼-Inch Boxes  
Diameter, 4½ Inches

H265	\$66.00	6-Inch Chain....	40
H267	71.00	Chain & Insulator	40
H268	66.00	Chain & Cord...	40

For 4-Inch and Switch Boxes  
Diameter, 5½ Inches

H285	\$76.00	6-Inch Chain....	60
H287	81.00	Chain & Insulator	60
H288	76.00	Chain & Cord...	60

### With Convenience Outlet

Outlet—15 Amperes, 125 Volts  
10 Amperes, 250 Volts

For 3¼-Inch Boxes

H135	\$70.00	6-Inch Chain....	40
H137	75.00	Chain & Insulator	40
H138	70.00	Chain & Cord...	40

For 4-Inch and Switch Boxes

H145	\$80.00	6-Inch Chain....	60
H147	85.00	Chain & Insulator	60
H148	80.00	Chain & Cord...	60

## No. 4700 Bryant Adjustable Angle Adapters

For Reflector Type Lamps

660 Watts, 250 Volts

Listed by Underwriters' Laboratories, Inc.

Horizontal adjustment, 340°; vertical, 70°.  
Thumb screw setting.



No.	Per 100	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
4700	\$120.00	10	100	50

## No. 50717 Bryant Pony Wall Keyless Sockets

With Base for Concealed Work

660 Watts, 250 Volts

Diameter of base, 2 inches. Height, 2 inches. Supporting screw spacing, 1¼ inches.

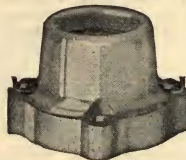


Cat. No.	Per 100	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
50717	\$60.00	10	100	22

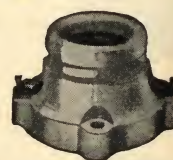
## Bryant Porcelain Cleat Medium Base Receptacles

Listed by Underwriters' Laboratories, Inc.

660 Watts, 250 Volts



No. 9402



No. 4013

Screw spacing, 2½ inches.

Packed 10 in a carton, 100 in a standard package.

No.	Per 100	Description	Wt., Lb. Std. Pkg.
9402	\$34.00	Plain.....	38
4013	45.00	With Shadeholder Groove.....	35



**Bryant Porcelain Cleat Receptacles****With Shade-Holder Groove**

660 Watts, 250 Volts

Length,  $3\frac{1}{4}$  in. Width, 1 in. Height,  $2\frac{1}{4}$  in. Supporting screw spacings,  $\frac{1}{16}$  by  $\frac{3}{16}$  inch.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
58300	\$62.00	5	100	55

**No. 4229 Bryant Porcelain Receptacles**

660 Watts, 250 Volts

**For Cleat or Concealed Wiring**Diameter base,  $2\frac{1}{8}$  inches. Height,  $1\frac{7}{8}$  inches. Holes for supporting screws are elongated to provide  $1\frac{3}{8}$  to  $1\frac{5}{8}$  in. on centers.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4229	\$40.00	10	100	32

**No. 42453 Bryant Porcelain Wood Molding Receptacles**

660 Watts, 250 Volts

Length,  $2\frac{5}{16}$  inches. Width,  $2\frac{1}{8}$  inches. Height,  $1\frac{1}{16}$  inches. Supporting screw spacing,  $1\frac{1}{16}$  inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
42453	\$49.00	10	100	47

**No. 4248 Bryant Double End Porcelain Receptacles****For Concealed, Cleat, or Molding Work****Medium Base, Keyless**

660 Watts, 250 Volts

For use with metal reflectors. The receptacle will take up to 100-watt lamps.

Mounting screw holes are staggered, centers  $1\frac{1}{8}$  inches on width and 1 inch on length.Size of base,  $2\frac{1}{4} \times 1\frac{3}{4}$  inches. Height,  $2\frac{5}{8}$  inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4248	\$73.00	10	100	60

**Bryant Porcelain Weatherproof Sockets****With Die Cast Caps**660 Watts, 600 Volts  
Keyless BodyLength overall,  $1\frac{1}{16}$  inches; diameter,  $1\frac{1}{2}$  inches.

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
No. 9429	\$26.00	10	100	17
9455	\$28.00	10	100	15
9457	\$28.00	10	100	13
9458	\$28.00	10	100	11
9460	\$36.00	10	100	16
9461	\$36.00	10	100	14

**Bryant Porcelain Weatherproof Sockets**

660 Watts, 600 Volts

These devices are regularly fitted with 6-inch leads of No. 14 R.C. stranded rubber covered wire.

Main diameter,  $1\frac{1}{2}$  inches. Flange diameter,  $1\frac{5}{8}$  inches. Length of porcelain,  $1\frac{3}{4}$  inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
399	\$30.00	10	100	27

**With Shade-Holder Groove**Main diameter,  $1\frac{1}{2}$  inches. Flange diameter,  $1\frac{5}{8}$  inches. Length of porcelain,  $1\frac{3}{4}$  inches.

9366	\$30.00	10	100	25
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**Bryant Porcelain Weatherproof Bragdon Sockets**

660 Watts, 600 Volts

**With Shade-Holder Groove**Main diameter,  $1\frac{5}{8}$  inches. Diameter of skirt,  $2\frac{1}{16}$  inches. Length,  $2\frac{3}{16}$  inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
50997	\$99.00	10	100	52

**Bryant Composition Weatherproof Sockets**

660 Watts, 600 Volts

**With Shade-Holder Groove**Main diameter tapers from  $1\frac{1}{16}$  to  $1\frac{1}{8}$  inches. Flange diameter,  $1\frac{1}{8}$  inches. Length of composition,  $2\frac{3}{16}$  inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
60666	\$36.00	10	100	25



No. 43310

**Pony Size, With Shade-Holder Groove**Main diameter,  $1\frac{1}{16}$  inches. Flange diameter,  $1\frac{5}{8}$  inches. Length of composition, 2 inches.

43310	\$26.00	10	100	21
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**No. H310 Bryant Hemco Bakelite Weatherproof Sockets**

Pony Size—660 Watts, 600 Volts

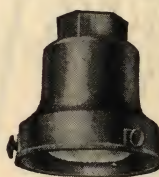
With  $4\frac{1}{2}$ -inch leads.

Packed 10 in a carton; 100 in standard package, weight 13 pounds.

No. H310.....per 100 \$24.00

**Bryant Weatherproof Lampholders**Aluminum—Die Cast Hood Type  
Listed by Underwriters' Laboratories, Inc.

660 Watts, 250 Volts



No. 3996



No. 3997



No. 3998

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
3996	\$80.00	For $2\frac{1}{4}$ -Inch Shade with $\frac{1}{2}$ -Inch Hexagonal Nipple...	10	100	55
3997	88.00	For $2\frac{1}{4}$ -Inch Shade with $\frac{1}{2}$ -Inch 90° Angle Nipple....	10	100	65
3998	76.00	With $\frac{1}{2}$ -In.Hexagonal Nipple	10	100	50



**Bryant Porcelain Receptacles****For Outlet Boxes, Metal Signs and Lighting Units**

No. 61988

The hole required for each of these receptacles is  $1\frac{1}{2}$  inches in diameter. Diameter of receptacles,  $1\frac{3}{4}$  inches. Diameter of rings,  $1\frac{3}{4}$  inches.

Carton, 10. Standard package, 100.

**Deep Receptacles with Shallow (½-Inch) Ring and 1 Lug**

660 Watts, 600 Volts

Cat. No.	Per 100	Description	Separation In.	Depth. Back In.	Wt. Lb. Pkg. Std.
61988	\$26.00	With Binding Screws.....	1	$1\frac{1}{4}$	28

**Shallow Receptacles with Deep (⅝-Inch) Ring and 1 Lug**

No. 59108



No. 4109 with Button Unscrewed

660 Watts, 250 Volts

59108	\$26.00	With Binding Screws.....	$\frac{5}{8}$	$1\frac{3}{16}$	23
4109	31.00	Binding Screws Covered....	$\frac{5}{8}$	$1\frac{3}{16}$	28

660 Watts, 600 Volts

4003	\$36.00	With 6-Inch Wires No. 14 R. C.	$2\frac{7}{32}$	$2\frac{7}{32}$	28
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**With Deep (⅝-Inch) Screw Ring and 1 Lug**

No. 4133



No. 4135

With groove for Weatherproof Shade-Holders.

660 Watts, 250 Volts

4133	\$28.00	With Binding Screws.....	$\frac{5}{8}$	$1\frac{3}{16}$	20
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660 Watts, 600 Volts

4135	\$40.00	With 6-Inch Wires No. 14 R. C.	$2\frac{7}{32}$	$2\frac{7}{32}$	26
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**Porcelain Screw Rings for Above Receptacles**

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
3803	\$12.00	Shallow, ½-Inch Ring.....	25	100	7
3804	12.00	Deep ⅝-Inch Ring.....	25	100	9
3805	14.00	Shade-Holder Ring.....	25	100	6

**No. 4063 Bryant Porcelain Receptacles****For Metal Signs, Border Lights and Cove Troughs**

660 Watts, 600 Volts

The binding screws are staked and will not fall out.

With two mounting screws and grooved back.

Size hole required,  $1\frac{3}{8}$  inches.

Diameter,  $1\frac{5}{8}$  inches. Depth,  $1\frac{1}{2}$  inches.

Supporting screw spacing,  $1\frac{13}{16}$  inches.

Carton, 10. Standard package, 100.

Weight package, 27 pounds.

No. ....	4063	*4063T
Per 100.....	\$30.00	36.00

\*With unthreaded shell for lamp testing.

**Hemco Sign Receptacles**

No. H100



No. H101



No. H114

No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
H100	\$22.00	With Binding Screws.....	25	250	55
H101	24.00	With Covered Back.....	25	250	69
H114	28.00	With 9-Inch Leads No. 14 Stranded Wire.....	25	250	75
H118	27.00	With 9-Inch Leads No. 18 Code Fixture Wire.....	25	250	68

**Hemco Cleat and Pull Receptacles**

No. H715



No. H978

H715	\$20.00	Bakelite Pony Cleat Receptacle	10	100	11
H975	54.00	Pull, with 6½-Inch Chain.....	10	100	38
H977	59.00	Pull, with Chain, Insulator....	10	100	38
H978	54.00	Pull, with Chain, and 4-Foot Cord.....	10	100	38

**Bryant Outlet Box Receptacles**

No. 9397

660 Watts, 250 Volts

Base,  $2 \times 1\frac{3}{8}$  inches. Height,  $1\frac{1}{2}$  inches. Supporting screw spacing,  $1\frac{1}{2}$  inches.

Cat. No.	Per 100	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
*9397	\$32.00	10	100	14

**No. 9514—2-Piece, Flush**

No. 9514

Hole required,  $1\frac{13}{32}$  inches in diameter. Flange,  $2\frac{1}{4}$  inches in diameter,  $1\frac{1}{32}$  inch thick. Depth from back of flange,  $1\frac{3}{4}$  inches. Supporting screw spacing,  $1\frac{1}{8}$  inches.

9514	\$51.00	10	100	32
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\*Not listed as standard by Underwriters' Laboratories.





**Bryant Porcelain Concealed Receptacles**

600 Watts, 250 Volts

Listed by Underwriters' Laboratories, Inc.



No. 4000



No. 50744

Packed 10 in a carton, 100 in a standard package.

No.	Per 100	Description	Diam. In.	Screw Spacing In.	Wt., Lb. Std. Pkg.
4000	\$50.00	Plain.....	2 $\frac{3}{8}$	1 $\frac{5}{8}$	37
4001	60.00	With Shadeholder Groove...	2 $\frac{3}{8}$	1 $\frac{5}{8}$	36
50744	60.00	With Porcelain Screw Ring..	2 $\frac{1}{32}$ to 1 $\frac{1}{4}$	1 $\frac{5}{16}$	35

**No. 9407 Bryant Weatherproof Porcelain Receptacles**

660 Watts, 600 Volts

Listed by Underwriters' Laboratories, Inc.

With side wires. Outside diameter of base, 2 $\frac{1}{16}$  inches; thickness, 1 inch. Screw spacings, 2 $\frac{3}{16}$  inches.

No.	Per 100	Ht. In.	Car- ton	Std. Wt., Lb. Std. Pkg.
9407	\$56.00	2 $\frac{1}{8}$	10	100 70

**No. 9171 Bryant Porcelain Cleat Receptacles**

660 Watts, 250 Volts, Not N. E. C.

Diameter of base, 1 $\frac{15}{16}$  inches.Height, 1 $\frac{1}{2}$  inches.

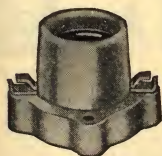
Supported by one screw in the center.

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
9171	\$26.00	10	100	25

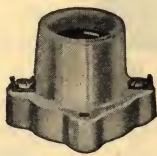
**Bryant Porcelain Pony Cleat Receptacles**

660 Watts, 250 Volts

Listed by Underwriters' Laboratories



No. 50714



No. 50715

Screw spacing, 1 $\frac{1}{32}$  inches.**With Solder Terminals**

No.	Per 100	Carton	Standard Package	Weight Pounds Standard Package
50714	\$24.00	10	100	25

**With Screw Terminals**

No.	Per 100	Carton	Standard Package	Weight Pounds Standard Package
50715	\$20.00	10	100	25

**No. H50721 Bryant Bakelite Receptacles**

Medium Base

Listed by Underwriters' Laboratories, Inc.

660 Watts, 250 Volts

With covered screw terminals. Screw spacing, 1 $\frac{3}{4}$  inches. Bakelite cover held in place by snap ring.

Packed 20 in a carton, 100 in a standard package. Standard package weight, 15 pounds.

No. H50721.....per 100 \$22.00

**Bryant Bakelite Pin Type Lampholders**

Listed by Underwriters' Laboratories, Inc.



No. 5464



No. 54644



No. 54643

For decorative, streamer and outdoor fixture work.

The terminals are pointed and pierce the wire insulation when the cap is screwed on. Furnished with hook.

Packed 10 in a carton, 100 in a standard package.

**Medium Base**

660 Watts, 250 Volts

No.	Per 100	Description	Wt., Lb. Std. Pkg.
5464	\$28.00	For Nos. 12 or 14 Wire.....	13
5465	28.00	For Nos. 10 or 12 Wire.....	13

**Intermediate Base**

75 Watts, 250 Volts

54644	\$17.00	For Nos. 16 or 18 Wire.....	4
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**Candelabra Base**

75 Watts, 250 Volts

54643	\$13.00	For No. 18 Wire.....	4
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**No. 4073 Bryant Mogul Base Lampholders**

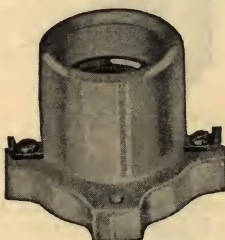
Listed by Underwriters' Laboratories, Inc.

**Porcelain Cleat Receptacles**

1500 Watts, 250 Volts

Diameter over lugs, 3 $\frac{1}{2}$  inches. Diameter of neck, 2 $\frac{1}{4}$  inches. Height, 2 $\frac{9}{16}$  inches. Screw spacing, 2 $\frac{7}{8}$  inches.

Packed 5 in a carton, 50 in a standard package.



No.....	4073
Per 100.....	\$98.00
Weight per Std. Pkg.....	pounds 40

**Bryant Mogul Base Porcelain Lampholders**

Listed by Underwriters' Laboratories, Inc.



No. 4123

Length, 2 $\frac{1}{2}$  inches.

Packed 5 in a carton, 50 in a standard package.

No.	Per 100	Description	Diam. In.	Wt., Lb. Std. Pkg.
4123	\$74.00	With Binding Screws at Top....	2 $\frac{3}{32}$	28
4062	84.00	With Binding Screws at Side....	2 $\frac{1}{4}$	30

**Aluminum Caps**

No. SA



No. SB

For use with Nos. 4123 and 4062 bodies.

Packed 10 in a carton, 50 in a standard package.

No.	Per 100	Description	Wt., Lb. Std. Pkg.
SA	\$88.00	$\frac{3}{8}$ -Inch Female Cap.....	3 $\frac{1}{2}$
SB	94.00	$\frac{1}{2}$ -Inch Female Cap.....	4



### Hubbell Standard Brass Socket Bodies



No. 61

Standard finish is brush brass. Special finishes available at addition in price.  
Pull sockets regularly equipped with 6½-inch chains. Extra length chain \$11.00 per 100 feet or fraction, cord \$2.00 per 100 feet or fraction.

Standard length of keys for all key sockets is 1 inch.

#### 250 Watts, 250 Volts



No. 60

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
60	\$50.00	Pull, Brush Brass...	25	250	41
60	48.00	Pull, Bright, Dipped	25	250	41
*61	36.00	Key, Brush Brass...	25	250	44
*61	34.00	Key, Bright Dipped	25	250	44

#### 660 Watts, 250 Volts

178	74.00	Pull, Brush Brass...	25	250	32
178	72.00	Pull, Bright Dipped	25	250	32
75	70.00	Key, Brush Brass...	25	250	44
62	28.00	Keyless, Brush Brass	25	250	34
62	26.00	Keyless, Bright Dipped	25	250	34

\*Fitted with porcelain bushing on keyshaft, at point where it passes through shell, to prevent wear.

### Hubbell Standard Pull Switch Bodies

3 Amperes, 125 Volts; 1 Ampere, 250 Volts



No. 63



No. 65

Standard finish is brush brass. Special finishes available at addition in price.

Pull switches regularly furnished with short chain and 4-foot black cord. Extra length chain \$11.00 per 100 feet or fraction, cord \$2.00 per 100 feet or fraction.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
63	\$102.00	Fixture.....	10	20	4
65	108.00	Rosette.....	10	20	4

### Hubbell Standard Brass Socket Caps



No. 11



No. 18



No. 14



No. 55

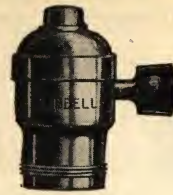
Standard finish is brush brass. Special finishes available upon request.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
11	\$11.00	Female, ½-Inch, Brush Brass...	25	250	12
11	9.00	Female, ½-Inch, Bright Dipped..	25	250	12
12	32.00	Female, ¼-Inch, Brush Brass...	25	25	2
13	18.00	Female, ¾-Inch, Brush Brass...	25	100	6
13	16.00	Female, ¾-Inch, Bright Dipped..	25	100	6
149	34.00	Female, ½-Inch, Brush Brass...	25	50	4
18	42.00	Angle, ½-Inch, Brush Brass....	25	50	4
20	48.00	Angle, ¾-Inch, Brush Brass....	25	50	5
14	10.00	Pendant, Brush Brass.....	25	250	8
14	8.00	Pendant, Bright Dipped.....	25	250	8
55	18.00	Porcelain Bushing, Brush Brass..	25	100	5

### Hubbell Standard Brass Shell Sockets



No. 2618



No. 2664



No. 2667

Standard finish is brush brass. Special finishes available at addition in price.

Pull sockets regularly equipped with 6½-inch chains. Extra length chain \$11.00 per 100 feet or fraction, cord \$2.00 per 100 feet or fraction.

Standard length of keys for all key sockets is 1 inch.

#### 250 Watts, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
2618	\$61.00	Pull, ½-Inch, Brush Brass....	25	250	53
2618	57.00	Pull, ½-Inch, Bright Dipped...	25	250	53
3620	60.00	Pull, Pendant, Brush Brass....	25	250	50
*2664	47.00	Key, ½-Inch, Brush Brass....	25	250	55
*2664	43.00	Key, ½-Inch, Bright Dipped...	25	250	55
*3665	54.00	Key, ¾-Inch, Brush Brass....	25	250	57
*3666	46.00	Key, Pendant, Brush Brass....	25	250	51
*3666	42.00	Key, Pendant, Bright Dipped..	25	250	51

#### 660 Watts, 250 Volts

2667	\$39.00	Keyless, ½-Inch, Brush Brass..	25	250	46
2667	35.00	Keyless, ½-Inch, Bright Dipped	25	250	46
3668	46.00	Keyless, ¾-Inch, Brush Brass..	25	250	50
3669	38.00	Keyless, Pendant, Brush Brass.	25	250	45

\*Fitted with porcelain bushing on keyshaft, at point where it passes through shell, to prevent wear.

### Hubbell Brass Shell Threaded-Catch Sockets

#### Socket Bodies



No. 1637



No. 1639



No. 1638

Threaded ring is included as part of socket body. Standard finish is brush brass.

#### 250 Watts, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
1637	\$54.00	Key Body.....	25	250	49
1639	66.00	Pull Body.....	25	250	45

#### 660 Watts, 250 Volts

1638	\$38.00	Keyless Body.....	25	250	39
1636	48.00	Pull Body.....	25	250	42

#### Socket Caps



No. 1630



No. 1632



No. 1634



No. 2502

Standard finish is brush brass.

1630	\$19.00	½-Inch Cap.....	25	250	10
1631	35.00	¼-Inch Cap.....	25	50	8
1632	22.00	¾-Inch Cap.....	25	100	14
1634	15.00	Pendant Cap.....	25	250	13

#### For .375 to .500-Inch Cord

2502	\$33.00	Pendant Cap, Cord Grip....	25	100	7
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## Hubbell Bakelite Threaded-Catch Sockets

### Socket Bodies



No. 3988

No. 3984

No. 3986

Threaded ring is included as part of socket body. Brown bakelite is standard.

Parts of bakelite and brass shell threaded-catch sockets do not interchange.

250 Watts, 250 Volts				
No.	Per 100	Description	Car-ton	Std. Pkg. Wt. Lb.
3984	\$48.00	Key Body.....	10	100 20
3988	\$54.00	Pull Body.....	10	100 19
660 Watts, 250 Volts				
3986	\$32.00	Keyless Body.....	10	100 17
3987	\$48.00	Push Body.....	10	100 17

### Socket Caps



Nos. 3980 and 3981

No. 3982

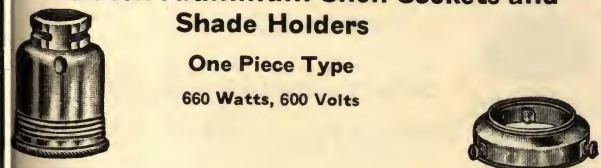
No. 3983

Brown bakelite is standard.				
No.	Per 100	Description	Car-ton	Std. Pkg. Wt. Lb.
3980	\$14.00	1/8-Inch Cap.....	10	100 5
3981	\$18.00	3/8-Inch Cap.....	10	100 6
3982	\$14.00	Pendant Cap.....	10	100 3
3983	\$26.00	Pendant Cap with Cord Grip...	10	100 7

## Hubbell Aluminum Shell Sockets and Shade Holders

### One Piece Type

660 Watts, 600 Volts



No. 3135 Socket

No. 3137 Shade Holder

Socket fitted with inside ring for holding porcelain body in shell.

No.	Per 100	Description	Car-ton	Std. Pkg. Wt. Lb.
3135	\$78.00	Socket with 3/8-Inch Nipple.....	10	50 16
3136	\$78.00	Socket with 1/2-Inch Nipple.....	10	50 16
3137	\$36.00	2 1/4-Inch Shadeholder.....	10	50 3

\*For use with Nos. 3135 and 3136 sockets only.

## Hubbell Socket Reducers and Bushings



No. 5380

No. 421

No. 392

No. 492

No.	Per 100	Description	Car-ton	Std. Pkg. Wt. Lb.
5380	\$2.00	1/8-Inch Socket Bushing, Comp.	*	1000 3
5381	\$4.00	3/8-Inch Socket Bushing, Comp.	*	1000 10
421	\$35.00	Mogul to Medium Reducer....	10	100 19
392	\$24.00	Medium to Candelabra Reducer	25	100 6
492	\$21.00	Medium to Intermediate Reducer	25	100 5

\*Packed in bulk.

## Hubbell Porcelain Socket Bodies and Caps

Standard finishes of exposed brass parts are brush brass and wash nickel. Brush brass furnished unless otherwise specified.

### Bodies



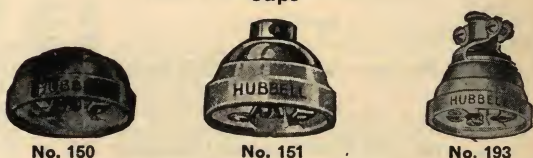
No. 160

No. 161

No. 162

No.	Per 100	Description	Car-ton	Std. Pkg. Wt. Lb.
160	\$85.00	Pull Body, 250 W., 250 V.....	10	100 31
161	\$40.00	Key Body, 250 W., 250 V.....	10	100 25
162	\$34.00	Keyless Body, 660 W., 250 V....	10	100 17

### Caps



No. 150

No. 151

No. 193

No.	Per 100	Description	Car-ton	Std. Pkg. Wt. Lb.
150	\$20.00	Pendant.....	10	100 11
151	\$35.00	1/8-Inch Brass.....	10	100 13
153	\$42.00	3/8-Inch Brass.....	10	100 14
191	\$58.00	1/2-Inch Brass.....	10	100 20
198	\$36.00	Pendant Cord Grip.....	10	100 18

## Hubbell Porcelain Cleat Receptacles

660 Watts, 250 Volts



No. 50715

No. 9402

Holes for screws spaced on centers: No. 50715, 1 15/16 inches; No. 9402, 2 3/8 inches. Base size: No. 50715, 2 1/2 x 2 3/8 inches; No. 9402, 2 15/16 x 2 3/8 inches.

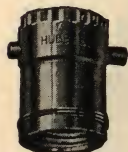
No.	Per 100	Description	Car-ton	Std. Pkg. Wt. Lb.
50715	\$20.00	With Binding Screws.....	10	100 12
9402	\$34.00	With Binding Screws.....	10	100 38

## No. 59 Hubbell Electrolier Push Through Socket Bodies

### Schedule B

660 Watts, 250 Volts

Standard finish is brush brass.



No.	Per 100	Car-ton	Std. Pkg. Wt. Lb.
59	\$38.00	25	250 32

## No. 441 Hubbell Electrolier Caps

1/8-Inch Female



No. ....	441
Per 100.....	\$13.00
No. Per Carton.....	25
No. in Standard Package.....	250
Weight per Standard Package....	11



### Hubbell Acorn Wiring Devices

These Acorn Devices are designed and offered to meet competition, and priced accordingly. They should not be confused with the regular line of Hubbell Wiring Devices listed elsewhere.

#### Standard Size Brass Shell Sockets



No. 2618



No. 2664



No. 2667

Caps or bodies are not sold separately.

#### Pull—250 Watts, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
2618	\$61.00	With $\frac{1}{8}$ -Inch Cap.	25	250	52

#### Key—250 Watts, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
2664	\$47.00	With $\frac{1}{8}$ -Inch Cap.	25	250	56

#### Keyless—660 Watts, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
2667	\$39.00	With $\frac{1}{8}$ -Inch Cap.	25	250	46

#### No. 310 Weatherproof Sockets With Shade Holder Groove 660 Watts, 600 Volts



Furnished with 6 inches of molded-in No. 14 B. & S. stranded rubber-covered wire.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
310	\$24.00	Brown Bakelite.	10	100	22

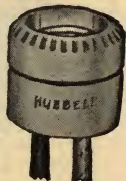
#### Unglazed Porcelain Sign Receptacles 660 Watts, 250 Volts



No. 4112



No. 4113



Nos. 4114 and 4118

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4112	\$22.00	Exposed Terminals.	25	250	51
4113	24.00	Covered Terminals.	25	250	64
4114	28.00	With 9-Inch Leads, No. 14 Wire	25	250	73
4118	27.00	With 9-Inch Leads, No. 18 Wire	25	250	71

### Hubbell Keyless Pony Wall Sockets

660 Watts, 250 Volts



No. 50717



No. 50718

Supporting screw holes,  $1\frac{1}{16}$  inches. Diameter, 2 inches. Height, 2 inches.

Standard finish is brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
50717	\$60.00	Solid Base.	10	100	22
50718	60.00	Slotted Base.	10	100	22

### Hubbell Weatherproof Sockets

660 Watts, 600 Volts



No. 60666



No. 43310



No. 43320

Furnished with 6-inch No. 14 B. & S. stranded rubber-covered wire.

#### With Shade Holder Groove

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
60666	\$36.00	Composition.	10	100	25

#### Without Shade Holder Groove

43310	\$26.00	Composition.	10	100	22
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#### With Moulded-In Leads

43320	\$26.00	Mica Compound.	10	100	23
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### No. 311 Hubbell Rubber Weatherproof Sockets

660 Watts, 600 Volts



Made of high-grade, soft rubber with 6-inch leads No. 14 rubber-covered wire. With spring center contact.

Carton, 10. Standard package, 100. Weight per standard package, 15 pounds.

No. 311..... per 100 \$36.00

### No. 7454 Hubbell Pin Type Bakelite Weatherproof Sockets

660 Watts, 250 Volts



Carton 10. Standard package, 100.

Weight per standard package, 13 pounds.

No. 7454	.....	per 100	\$28.00
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### Hubbell Weatherproof Sockets

With Cast Aluminum Shell

660 Watts, 250 Volts



No. 4006



No. 4016

Ideal for inexpensive industrial installations. The  $2\frac{1}{4}$ -inch shade holder fits either shallow bowl or standard dome type reflectors.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4006	\$88.00	$\frac{1}{2}$ -Inch Threaded Bushing.	10	100	55
4007	88.00	$\frac{3}{8}$ -Inch Threaded Bushing.	10	100	55
4016	88.00	$\frac{1}{2}$ -Inch 90° Angle Bushing.	10	100	65



## Hubbell Brass Covered Ceiling Receptacles



No. 4100



No. 4104

Screw spacings: No. 4102,  $2\frac{3}{4}$  inches; No. 4100 and No. 4104,  $2\frac{3}{4}$  inches and  $3\frac{1}{2}$  inches.

No. 4104 equipped with short chain, 4 feet of black cord and composition ball.

Standard finish, brush brass.

660 Watts, 250 Volts				Pkg.	
No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
4100	\$110.00	Keyless, for $3\frac{1}{4}$ and 4-Inch Boxes.	1	50	44
250 Watts, 250 Volts				Pkg.	
4104	216.00	Pull, for $3\frac{1}{4}$ and 4-Inch Boxes...	1	50	59

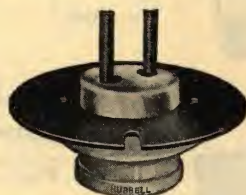
## Hubbell Outlet Box Receptacles

With Metal Cover and No. 14 Wires

660 Watts, 600 Volts



No. 456



No. 458

Cadmium finish steel covers. Height,  $1\frac{1}{16}$  inches above cover.

For  $3\frac{1}{4}$ -Inch Boxes

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
456	\$44.00	Screw Terminals.....	10	100	45
458	52.00	6-Inch Leads.....	10	100	55

## For 4-Inch Boxes

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
457	\$50.00	Screw Terminals.....	5	100	60
459	58.00	6-Inch Leads.....	5	100	66

## Hubbell Porcelain Pull Receptacles

250 Watts, 250 Volts



No. 998

Extra chain eyelets, when sold separately, add \$4.00 per 100.

Extra length cord, \$2.00 per 100 feet. For insulators, add \$8.00 per 100.

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
997	\$59.00	7-Inch Chain and Insulator.....	10	100	35
998	54.00	Short Chain and 4-Foot Cord....	10	100	35
999	54.00	3-Foot Chain.....	10	100	36

## Hubbell Lumiline Lampholders

The unique applications of Lumiline Lamps by means of Lumiline Receptacles and Caps are now many and varied, especially in the indirect cove, or trough lighting fields.

Ideally suited for built-in or built-on illumination where space limitation is a factor; showcases, mirrors, scales, signs, display windows, railroad cars, buses; and in all lighting where a tubular source of light is required.

## Bakelite Receptacles

660 Watts, 250 Volts



No. 2910



No. 2914



No. 2916

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
2910	\$22.00	Side Wired, Black.....	50	200	8
2911	24.00	Side Wired, White.....	50	200	8
2914	22.00	Back Wired, Black.....	50	200	6
2915	26.00	Back Wired, White.....	50	200	6
2916	32.00	Twin, Back Wired, Black.....	50	200	7
2917	34.00	Twin, Back Wired, White.....	50	200	7
2930	22.00	Back Wired, Single Screw Mounting, Black.....	50	200	8
2931	26.00	Back Wired, Single Screw Mounting, White.....	50	200	8

## Bakelite Caps



No. 2912

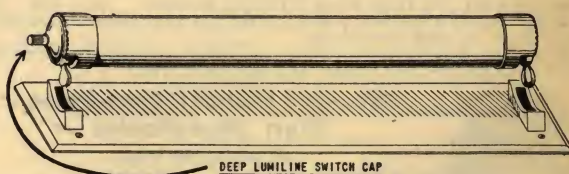


No. 2932

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
2912	\$11.00	Black.....	50	200	2
2913	12.00	White.....	50	200	2
2932	14.00	Deep Type, Black.....	50	200	5
2933	15.00	Deep Type, White.....	50	200	5

## Deep Lumiline Switch Caps

For Individual Control of Lumiline Lamps



DEEP LUMILINE SWITCH CAP



No. 2934

75 Watts, 125 Volts

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
2934	\$40.00	Black Enclosed Cap and Switch..	50	200	5
2935	42.00	White Enclosed Cap and Switch..	50	200	5



**Hubbell Porcelain Pull Receptacles**

**For 3¼ and 4-Inch Boxes**  
**With Fluted Shade Holder Ring**  
 250 Watts, 250 Volts



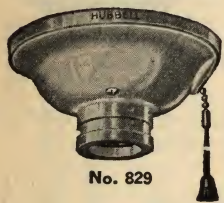
No. 40262

The 3¼-inch size: diameter of base, 4¼ in.; height overall, 2½ in. Holes for supporting screws are spaced 2¾ in. on center. The 4-inch size: diameter of base, 4¼ in.; height overall, 2½ in. Holes for supporting screws are spaced 3½ in. on center.

No.	Per 100	Description	For Box In.	Car-ton	Std. Pkg.	Std. Wt. Lb.
4026	\$67.00	6½-Inch Chain and Insulator	3¼	10	50	40
4046	77.00	6½-Inch Chain and Insulator	4	10	50	60
40261	62.00	6½-Inch Chain Only	3¼	10	50	40
40461	72.00	6½-Inch Chain Only	4	10	50	60
40262	62.00	Short Chain, 4-Foot Cord	3¼	10	50	40
40462	72.00	Short Chain, 4-Foot Cord	4	10	50	56

**Hubbell Porcelain Receptacles**

**With Flush Back**  
**With Shade Holder Groove**  
**Pull: 250 Watts, 250 Volts**  
**Keyless: 660 Watts, 250 Volts**  
 Carton, 10. Std. pkg., 24.



No. 829

No.	Per 100	Description	Pkg. Wt. Lb.
829	\$168.00	Pull, Short Chain and Cord.....	40
830	168.00	Pull, Short Insulated Chain.....	41
860	116.00	Keyless.....	36

**3¼ and 4-Inch Outlet Boxes**

**With Shade Holder Groove**  
**Keyless: 660 Watts, 250 Volts**



No.	Per 100	Size Inches	O.D. Inches	Car-ton	Std. Pkg.	Wt. Lb.
3922	\$37.00	3¼	3¼	10	100	55
3923	42.00	4	4¼	5	50	40

Fitted with drain holes.  
 Height, 1½ in. Supporting screws spaced on centers: No. 3922, 2¾ in.; No. 3923, 3½ in.

**Hubbell Porcelain Sign Receptacles**

**With Glazed Rings**  
 660 Watts, 250 Volts



No. 4003



No. 59108



No. 4109



No. 61988

**With 6-Inch No. 14 Wires**

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
*4003	\$36.00	¾-Inch Ring.....	10	100	28
59108	\$26.00	¾-Inch Ring, Binding Screws... Shallow Type	10	100	22
4109	31.00	¾-Inch Ring, Covered Terminals.....	10	100	27
61988	\$26.00	¾-Inch Ring, Binding Screws... Deep Type	10	100	23

\*With longer leads \$4.50 additional per 100 devices for each extra foot on each conductor.  
 Separate fluted rings, \$9.50 per 100. Separate grooved rings, \$12.00 per 100. Standard package, 100.

**No. 4063 Hubbell One-Piece Sign Receptacles**

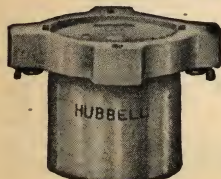
660 Watts, 250 Volts

Requires a hole 1⅝ inches in diameter. Supporting screws 1⅜ inches on centers. Furnished with binding screws. Carton, 10. Standard package, 100. Weight per standard package, 22 pounds.  
 No. 4063.....per 100 \$30.00

**No. 3464 Hubbell Mogul Cleat Receptacles**

1500 Watts, 600 Volts

Screws spaced 2⅞ inches. Diameter of base, 3½ inches. Carton, 2. Std. pkg., 50. Wt. per std. pkg., 41 pounds.  
 No. 3464.....per 100 \$98.00

**Hubbell Candelabra Sockets**

75 Watts, 125 Volts



No. 5753

Standard finish is brush brass.



No. 5793

**Screw Thread Shell Fastening**

Carton, 25. Standard package, 100. Weight per standard package, 9 pounds.  
 No. 5753 Keyless, ⅛-Inch Cap.....per 100 \$70.00

**Bayonet Base—Lock Shell Fastening**

Carton, 10. Standard package, 50. Weight per standard package, 5 pounds.  
 No. 5793 Keyless, ⅛-Inch Cap.....per 100 \$66.00

**No. 3394 Hubbell Keyless Candle Sockets**

**With Hickey**

660 Watts, 250 Volts

Bushing, ⅛ inch. Length, 2⅜ inches.

Carton, 25. Standard package, 250. Weight per standard package, 28 pounds.

No. 3394.....per 100 \$20.00

**Hubbell Adjustable Candle Sockets**

**Pull—Complete**

250 Watts, 250 Volts

Minimum length, 3¼ inches. Maximum length, 4⅝ inches.

Carton, 10.

Standard package, 100.

Weight per standard package, 20 pounds.

No. 3965.....per 100 \$110.00

**Keyless—Complete**

660 Watts, 250 Volts

Minimum length, 3¼ inches. Maximum length, 4⅝ inches.

Carton, 25.

Standard package, 250.

Weight per standard package, 35 pounds.

No. 3969.....per 100 \$40.00



No. 3965



No. 3969

**Hubbell Adjustable Angle Adapter Sockets**

660 Watts, 250 Volts



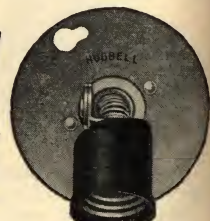
No. 3596



No. 3597

For use with New Projector and Reflector Lamps.

Carton, 10. Standard package 100.



No. 3598

No.	Per 100	Description	Pkg. Wt., Lb.
3596	\$182.00	Adjustable Angle Adapter.....	35
3597	138.00	Angle Adapter Socket.....	19
3598	164.00	Socket on 3¼-Inch Galv. Cover.....	42
3599	166.00	Socket on 4-Inch Galv. Cover.....	54



## H &amp; H 5500 Line Sockets

Key  
250 Watts, 250 Volts

Standard finish is brush brass. Nickel, gun-metal, chromium, electro-nickel and bright nickel are available.

Bodies and caps are not sold separately. Prices include caps.

No.	5520	5576	5571	5521
Per 100	\$22.00	25.00	26.00	22.00
Cap.	1/8-Inch	1/4-Inch	3/8-Inch	Pendent
No. in Ctn.	25	25	25	25
Std. Pkg.	250	250	250	250
Pkg. Wt.	lb. 51	51	49	48

Keyless  
660 Watts, 250 Volts

Standard finish is brush brass. Nickel, gun-metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.

No.	5540	5579	5572	5541
Per 100	\$18.50	21.50	22.50	18.50
Cap.	1/8-Inch	1/4-Inch	3/8-Inch	Pendent
No. in Ctn.	25	25	25	25
Std. Pkg.	250	250	250	250
Pkg. Wt.	lb. 46	46	46	43

Push  
250 and 660 Watts, 250 Volts

Standard finish is brush brass. Nickel, gun-metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.

No.	5535	5580	5581	5536
Per 100	\$25.00	28.00	29.00	25.00
Cap.	1/8-Inch	1/4-Inch	3/8-Inch	Pendent
No. in Ctn.	25	25	25	25
Std. Pkg.	250	250	250	250
Pkg. Wt.	lb. 48	48	48	45

## 660 Watts

No.	5530	5584	5585	5531
Per 100	\$26.00	29.00	30.00	26.00
Cap.	1/8-Inch	1/4-Inch	3/8-Inch	Pendent
No. in Ctn.	25	25	25	25
Std. Pkg.	250	250	250	250
Pkg. Wt.	lb. 48	48	48	48

Pull  
250 and 660 Watts, 250 Volts

Standard finish is brush brass. Nickel, gun-metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.

No.	5500	5573	5570	5501
Per 100	\$24.00	27.00	28.00	24.00
Cap.	1/8-Inch	1/4-Inch	3/8-Inch	Pendent
No. in Ctn.	25	25	25	25
Std. Pkg.	250	250	250	250
Pkg. Wt.	lb. 40	46	42	40

## 660 Watts

No.	5510	5574	5575	5511
Per 100	\$27.00	30.00	31.00	27.00
Cap.	1/8-Inch	1/4-Inch	3/8-Inch	Pendent
No. in Ctn.	25	25	25	25
Std. Pkg.	250	250	250	250
Pkg. Wt.	lb. 42	42	42	40

## H &amp; H Threaded Catch Socket Bodies

250 Volts



No. 65



No. 66



No. 67



No. 63

This socket body is fastened to the cap by a threaded ring which may be set very tightly.

No.	Per 100	Description	Carton	Std. Pkg.	Pkg. Wt. Lb.
65	\$27.00	Key, 250 Watts	25	250	47
13	43.50	Key, 660 Watts	25	250	47
66	22.50	Keyless, 660 Watts	25	250	40
67	37.00	Pull, 250 Watts	25	250	46
17	41.50	Pull, 660 Watts	25	250	46
18	26.00	Push, 250 Watts	25	250	47
63	27.00	Push, 660 Watts	25	250	47

## H &amp; H Threaded Catch Socket Caps



No. TA



No. TC



No. TB



No. TK



No. TM



No. TG



No. TMG

This cap is fastened to the socket body by a threaded ring which may be very tightly set. The cap cannot pull away from the body and vibration will not loosen the parts.

No.	Per 100	Description	Carton	Std. Pkg.	Pkg. Wt. Lb.
TA	\$7.50	1/8-Inch	25	250	9
TC	11.50	1/8-Inch, Side Outlet, Cord Hole .281-.156 Inch (3/32 x 1/2 Inch)	25	100	4
TB	18.00	1/4-Inch	25	50	3
TK	11.00	3/8-Inch	25	100	6
TZ	25.50	1/2-Inch	25	50	3
TM	7.50	Pendent, 1 1/2-Inch Cord Hole	25	250	6
TG	19.50	Cord Grip, 3/8-1/2 Inch, .375-.500 Inch	25	100	8
TMG	19.50	Cord Grip, 1/4-3/8 Inch, .250-.375 Inch	25	100	8

## H &amp; H Keyless Candle Sockets

660 Watts, 250 Volts



No. 4208

Body length, 1 1/8 inches.

Carton, 25.

Standard package, 250.

No.	Fixed Length	Adjustable
4208		5998
Per 100	\$20.00	20.00
Overall Length... inches	2 5/16	3 15/16 to 5 5/8
Package Weight... pounds	18	32



No. 5998

## H &amp; H Adjustable Angle Adapters

Adjustment, 180° Vertical, 340° Horizontal

660 Watts, 250 Volts



No. 4364



No. 4365

No.	Per 100	Description	Carton	Std. Pkg.	Pkg. Wt. Lb.
4364	\$138.00	Adjustable Adapter	10	100	10
4365	164.00	With 3 1/4-Inch Galv. Cover	10	50	18
4366	166.00	With 4-Inch Galv. Cover	10	50	20



## H & H Interchangeable Porcelain Socket Bodies

250 Volts



No. 40



No. 41

Nos. 42  
and 44

No. 45

Wash nickel is the standard finish on chain.

No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
40	\$44.00	Key, 250 Watts.....	10	100	29
41	34.00	Keyless, 660 Watts.....	10	100	18
42	85.00	Pull, 250 W., 7-Inch Insulated Chain.....	10	100	31
44	121.50	Pull, 660 W., 7-Inch Insulated Chain.....	10	100	33
45	43.50	Push, 660 Watts, 2-Inch Button...	10	100	32

## H & H Interchangeable Socket Caps



No. PM



No. PE



No. PA

This cap is brass covered, finished wash nickel, with the exception of pendent which is porcelain.

No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
PM	\$20.00	Pendent.....	10	100	11
PE	36.00	Cord Grip Pendent, 1/4 to 1/2-Inch.	10	100	18
PA	38.00	1/8-Inch.....	10	100	14
PK	42.00	3/8-Inch.....	10	100	15

## H & H Interchangeable Porcelain Socket Bases



No. PB



No. PR

No.	Per 100	Description	Base Diam. Inches	Screw Spacings Inches	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
PB	\$33.00	Combination.....	2 7/16	2	10	100	25
PR	43.00	Flat Back, 3 1/4 Inches.	3 11/16	2 3/4	10	50	15

## H & H Porcelain Husk Sockets

With Body Terminals



No. 1263

Plain Side

660 Watts, 250 Volts



No. 1267

No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
1269	\$13.50	Body Only, No Cap.....	10	100	28
1263	20.00	With 1/8-Inch Cap.....	10	100	32
1264	20.00	With 1/4-Inch Cap.....	10	100	29
1265	20.00	With 3/8-Inch Cap.....	10	100	28
1266	23.50	With 1/2-Inch Cap.....	10	100	28
1262	38.50	With 1/2-Hexagonal Cap.....	10	100	28
1267	32.00	With 3/8-Inch Angle Cap.....	10	100	39

## H & H Aluminum Weatherproof Sockets and Shadeholders

Keyless—One-Piece Style

600 Watts, 600 Volts



No. 7971



No. 7975

No.	Each	Description	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
7971	\$78.00	Socket, 3/8-Inch.....	10	50	16
7972	78.00	Socket, 1/2-Inch.....	10	50	16
7975	36.00	Shadeholder, 2 1/4 Inches....	10	50	3

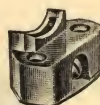
## H & H Lumiline Lampholders

660 Watts, 250 Volts

These lampholders, designed to fit Lumiline Lamps, are supplied in black or white bakelite, either front or back connected styles. Single Lumiline Sockets fit one lamp and the Twin style supports two lamps in line.

There are two parts to each socket, the receptacle and the cap. The cap snaps over the end of the Lumiline Lamp and the circular contact goes into the receptacle with the contact screws facing inwards so that the flat surface is at the end of the lamp. Another lamp can then be installed very closely with only a small space between.

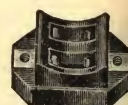
### Receptacles



No. 7979-W



No. 7969



No. 7992

### Front Connected Single

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
7979	\$22.00	Black.....	50	200	8
7979-W	24.00	White.....	50	200	8

### Back Connected

7969	\$22.00	Single, Black.....	50	200	6
7969-W	26.00	Single, White.....	50	200	6
7992	32.00	Twin, Black.....	50	200	9
7992-W	34.00	Twin, White.....	50	200	9



No. 7980-W

7980	\$11.00	Black.....	50	200	4
7980-W	12.00	White.....	50	200	4

### Shallow Type Caps

### Deep Type Caps

Switch Rating: 15 Amperes, 125 Volts; 10 Amperes, 250 Volts

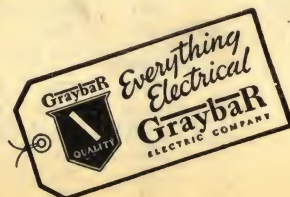


No. 7993



No. 7994

7993	\$14.00	Black.....	50	200	5
7993-W	15.00	White.....	50	200	5
7994	40.00	Black, with Switch.....	50	200	4
7994-W	42.00	White, with Switch.....	50	200	4







No. 43308

### H&H Pin Type Weatherproof Bakelite Sockets

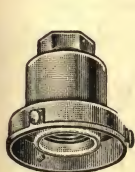
#### With Suspension Hook

Medium—660 Watts, 250 Volts  
Intermediate—75 Watts, 250 Volts  
Candelabra—75 Watts, 125 Volts

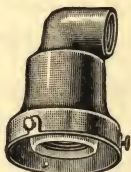
No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
43308	\$21.00	Medium, for No. 12, 14 Wire...	10	100	12
43318	21.00	Medium, for No. 10, 12 Wire...	10	100	12
44408	11.00	Intermediate, for No. 16, 18, 20 Wire.....	10	100	4
44418	17.00	Intermediate, for No. 14 Wire...	10	100	4
33308	7.50	Candelabra, for No. 16, 18, 20 Wire.....	10	100	4

### H&H Weatherproof Sockets

#### With One-Piece Die-Cast Hood 660 Watts, 250 Volts



No. 1300



No. 1306



No. 1308

For all locations exposed to weather. Hood is die-cast of zinc-base metal which stops corrosion in all weather. Standard finish, aluminum. Green finish at no extra charge.

#### With 2 1/4-Inch Shadeholder

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1300	\$80.00	1/2-Inch Hex. Cap.....	10	100	55
1305	88.00	3/8-Inch Hex. Cap.....	10	100	55
1306	88.00	90° Angle, 1/2-Inch Cap.....	10	100	65

#### Without Shadeholder

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1308	\$76.00	1/2-Inch Hex. Cap.....	10	100	51

#### With 6-Inch Wire Leads

660 Watts, 600 Volts



No. 9366



No. 43310-B



No. 43319



No. 1500

No. 14 B.&S. stranded rubber-covered wire is standard.					
399	\$15.00	Porcelain, Plain.....	10	100	26
9366	21.50	Porcelain, Shadeholder Gr....	10	100	26
43310	26.00	Composition, Shadeholder Gr..	10	100	25
43310-B	14.50	Bakelite, Shadeholder Groove..	10	100	13
43319	12.50	Bakelite, without Groove.....	10	100	13
60666	20.50	Composition, Shadeholder Gr..	10	100	25
1500	24.00	All Rubber.....	10	100	19

### H&H Reducers or Adapters For Sockets and Receptacles



No. 4011



No. 649

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
4011	\$35.06	Mogul to Medium.....	10	100	18
649	21.00	Medium to Intermediate.....	25	100	4
392	24.00	Medium to Candelabra.....	25	100	5
391	15.00	Candelabra to Miniature.....	20	100	1

### H & H Surface Cleat Receptacles

660 Watts, 250 Volts



No. 50715



No. 50715-C



No. 50721



No. 9171



No. 28795



No. 9402



No. 9403



No. 59275

These receptacles are all porcelain, except Nos. 50715-C and 50721 which are bakelite.

No.	Per 100	Base Dimensions, Inches	Screw Spacings Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
50715	\$13.00	Porcelain, 2 1/16 x 2 1/16".....	1 15/16	10	100	24
50715-C	20.00	Bakelite, 2 1/16 x 2 1/16".....	1 15/16	10	100	12
50721	19.00	Bakelite, Covered Terminals, 1 7/8 x 1 7/8".....	1 3/4	10	100	12
9171	22.00	Plain, 1 5/16" Diameter..	1 Screw	10	100	23
28795	30.00	Plain, 2 5/16" Diameter..	1 7/8	10	100	35
9402	34.00	Plain, 2 15/16 x 2 23/32".....	2 3/8	10	100	41
9001	37.50	Groove, 2 15/16 x 2 23/32".....	2 3/8	10	100	40
9403	45.00	Brass Shell, 2 15/16 x 2 23/32".....	2 3/8	10	100	34
*59275	38.50	2 17/32" Diameter.....	2	10	100	43

\*Wires will run 1 inch from the surface.

### H & H Porcelain Sign and Fixture Receptacles

660 Watts, 250 Volts



No. 9154



No. 5413



No. 3952

Size hole required, 1 3/8 inches. Screw hole spacings, 1 13/16 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
9154	\$18.00	Screw Terminals.....	10	250	65
5413	18.00	One Spring Stud, Octagon Base..	10	250	65
7046	18.00	Clip Terminals.....	10	250	56
3951	18.00	Screw Terminals, Spring Stud..	10	250	56
3952	18.00	Clip Terminals, Spring Stud....	10	250	60

### H & H Porcelain Ring Receptacles

#### Competitive Type

Shallow, Keyless—660 Watts



No. 7718



No. 7720



No. 7721



No. 7722

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
7718	\$22.00	Screw Terminals, 1 3/16" Back....	25	250	54
7720	19.00	Covered Terminals, 1 1/8" Back..	25	250	64
7721	29.00	9" No. 14 Wire, 3/4" Back.....	25	250	64
7722	28.00	9" No. 18 C.F. Wire, 3/4" Back..	25	250	57

### No. 7799 H & H Rubber Handle Sockets

#### Turn Knob Type

250 Watts, 250 Volts



Carton, 10. Standard package, 20. Weight per standard package, 6 pounds.

No. 7799.....	per 100	\$64.00
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## H & H Outlet Box Porcelain Pull Receptacles

Two Piece, with Shadeholder Ring



No. 7425

250 Watts, 250 Volts

Nickel is the standard finish on chain. Special finishes will be supplied on special order.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7430	\$36.00	7" Chain, 3 1/4" Box.....	10	50	30
7423	30.00	Chain and 3' Cord, 3 1/4" Box..	10	50	30
7425	36.00	Chain and Ins. 3 1/4" Box.....	10	50	30
7733	46.00	7" Chain, 4" Box.....	10	50	60
7734	40.00	Chain and 3' Cord, 4" Box....	10	50	60
7735	46.00	Chain and Ins. 4" Box.....	10	50	60

## H & H Outlet Box Keyless Receptacles

660 Watts, 250 Volts



No. 292

Weatherproof receptacles have 6 inches of No. 14 wire.



No. 290

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9307	\$32.00	Receptacle Only.....	10	100	29
292	44.00	With Metal Cover, 3 1/4" Box..	10	100	50
445	50.00	With Metal Cover, 4" Box....	5	100	60
290	52.00	Weatherproof, with Metal Cover, 3 1/4" Box, 600 Volts..	10	100	58
443	58.00	Weatherproof, with Metal Cover, 4" Box, 600 Volts..	5	100	70

## H & H Outlet Box Porcelain Keyless Receptacles

One Piece

660 Watts, 250 Volts



No. 5965



No. 5968

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5965	\$24.00	3 1/4-Inch Box.....	10	100	61
5968	28.00	4-Inch Box.....	5	50	54

## H & H Outlet Box Porcelain Receptacles

One-Piece, with Shadeholder Groove

Pull, 250 Watts, 250 Volts  
Keyless, 660 Watts, 250 Volts



No. 7383



No. 7385



No. 7389

This receptacle has a recessed back for stud mounting. Stud straps are required.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7382	\$68.00	Pull, Chain and 3' Cord, 3 1/4" Box..	10	50	34
7383	68.00	Pull, 7" Chain and Insulator, 3 1/4" Box..	10	50	34
7385	56.50	Keyless, 3 1/4" Box.....	10	50	49
7371	68.00	Keyless, 4" Box.....	10	50	76
7389	78.50	Pull, Chain and 3' Cord, 4" Box..	10	50	76
7390	78.50	Pull, 7" Chain and Insulator, 4" Box	10	50	76

## Benco Weatherproof Sockets

With Type S (1 1/16-Inch Diam.) Screw Thread

Listed by Underwriters' Laboratories



Benco Sockets are made for industrial or heavy duty use. They have highly insulated, rugged interior and strong metal casing. Thread on casing may be used for attaching reflectors with S holder and Benco holders.

### Keyless Type—Medium Base

660 Watts, 600 Volts

Keyless sockets have a porcelain interior and lamp grip. Standard package, 50; carton, 10; weight of standard package, 17 pounds.

Casing material, aluminum; polished finish.

No. 4200, Tapped for 1/2-Inch I.P. Connection per 100 \$78.00  
No. 4201, Tapped for 3/8-Inch I.P. Connection per 100 78.00

### Pull Chain Type—Medium Base

660 Watts, 250 Volts

The inner-pull is a feature of these Benco Sockets. It is a means to make them weatherproof, and the chain action is unobstructed.

Molded composition interior and Benjamin Lamp Grip.

Standard package, 50; carton, 10; weight, 17 pounds.

Pull socket interior packed 50 in a standard package; carton, 10; weight of standard package, 25 pounds.

Casing material, aluminum; polished finish.

No. 4225, Tapped for 1/2-Inch I.P. Connection per 100 \$180.00

No. 4226, Tapped for 3/8-Inch I.P. Connection per 100 180.00

No. 4209, Pull Socket Interior Only.....per 100 150.00

## Benjamin Benco Threaded Holders

With Type S (1 1/16-Inch Diam.) Screw Thread

Benco Holders provide an easy means for attaching shades or reflectors to the Benco Sockets and Outlet Box Fittings. These holders are made to fit any glass or metal reflector with standard neck sizes.

It should be noted, while considering the Benco Holders, that Benjamin Porcelain Enameled Steel Reflectors are furnished with holders for attachment to Benco Sockets and Outlet Box Fittings.

### Polished Aluminum Holders—Weatherproof

Standard package, 50; carton, 10.



2 1/4-Inch Holder

No.....	4215	4217
Per 100.....	\$30.00	45.00
Size.....inches	2 1/4	3 1/4
Weight Std. Package.pounds	3	4

## No. 1406 Benjamin Outlet Box Receptacle Covers



Provides a cover for 3 1/4 and 4-inch outlet boxes. A medium base receptacle for a lamp and threaded shell which makes it easy to attach Benco threaded holders and Benjamin reflectors with Type S holder.

Green enamel finish.

Packed 10 in a carton.

Standard package, 50.

No. 1406 . . . . .per 100 \$140.00



## P & S Porcelain Interchangeable 1-Screw Sockets

P & S porcelain 1-screw socket parts are not interchangeable with P & S 2-screw socket parts.

### Socket Bodies

#### Key—250 Watts, 250 Volts

No.	Per 100	Car-ton	Qty.	Std. Pkg.	Wt. Lb.
S-26	\$44.00	10	100	33	
*S-38	76.00	10	100	31	

#### Keyless—660 Watts, 250 Volts

S-27	\$34.00	10	100	19	
*S-39	72.00	10	100	20	

#### \*Shurlook

#### Pull—250 Watts, 250 Volts

#### Insulated nickel flash chain.

S-47	\$85.00	10	100	30	
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No. S-26



No. S-27



No. PA

Standard finish of brass caps is nickel flash.

#### Pendant for Reinforced Cord

No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt. Lb.
PA	\$20.00	..	10	100	13



No. PY

#### Pendant with Cord Grip

PY	\$36.00	1/2	10	100	19
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No. PC

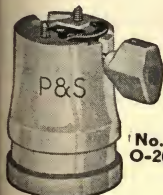
#### Straight Nipple—Brass

PC	\$38.00	1/8	10	100	17
PE	42.00	3/8	10	100	17
PZ	58.00	1/2	10	100	26

## P & S Porcelain Interchangeable 2-Screw Sockets and Parts

P & S 2-screw porcelain socket parts are not interchangeable with P & S 1-screw porcelain socket parts.

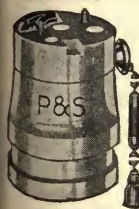
The standard finish of brass caps and brass chain for porcelain pull sockets is nickel flash.



No. O-26



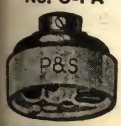
No. O-27



No. O-47



No. O-PA



No. O-PC

### Socket Bodies

#### Key—250 Watts, 250 Volts

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb.
O-26	\$44.00	10	100	30
O-38 Shurlok	76.00	10	100	31

#### Keyless—660 Watts, 250 Volts

O-27	\$34.00	10	100	18
O-39 Shurlok	72.00	10	100	20

#### Pull—250 Watts, 250 Volts

O-47	\$85.00	10	100	28
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### Caps

#### Pendant for Reinforced Cord

No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt. Lb.
O-PA	\$20.00	..	10	100	13

#### Straight Nipple—Brass

O-PC	\$38.00	1/8	10	100	17
O-PE	42.00	3/8	10	100	17
O-PZ	58.00	1/2	10	100	26

## P & S Porcelain Outlet Box Receptacles

Keyless—660 Watts, 250 Volts

### For 3/4-Inch Boxes



No. 41F

Outside diameter, 3 1/2 inches; height overall, 1 1/2 inches. Holes for supporting screws spaced 2 3/4 inches on centers.

Packed 10 in a carton, 100 in a standard package.

Weight per standard package, 60 pounds.

No. 41.....each \$30.00

### For 4-Inch Boxes

Outside diameter, 4 1/2 inches; height overall, 1 5/8 inches. Holes for supporting screws spaced 3 1/2 inches on centers.

Packed 5 in a carton, 50 in a standard package.

Weight per standard package, 48 pounds.

No. 110.....each \$37.00

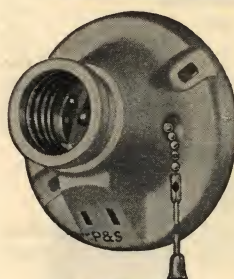
## P & S Porcelain One-Piece Outlet Box Receptacles

With Shadeholder Groove and Convenience Outlet

Rating: 250 Watts, 250 Volts;  
Outlet, 15 Amperes, 125 Volts;  
10 Amperes, 250 Volts

Convenience outlet is connected internally, eliminating extra wires, soldering, and taping.

Also available in keyless models (Nos. 41 and 110).



No. 5026-2

### For 3/4-Inch Outlet Boxes

Dimensions: diameter of base, 3 3/8 inches; height overall, 2 1/4 inches; screw hole spacing, 2 3/4 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.
5026	\$64.00	Insulated Nickel Chain.....	10	50
5026-1	58.00	Short Chain Only.....	10	50
5026-2	58.00	Short Chain and Long Cord...	10	50

### For 4-Inch Outlet Boxes

Dimensions: diameter of base, 4 1/8 inches; height overall, 2 1/4 inches; screw hole spacing, 3 1/2 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.
5046	\$74.00	Insulated Nickel Chain.....	10	50
5046-1	68.00	Short Chain Only.....	10	50
5046-2	68.00	Short Chain and Log Cord...	10	50

## P & S Porcelain Screw Ring Receptacles

For Signs, Fixtures and Outlet Boxes  
Shallow Back



No. 4100

Length of back, 1 3/8 inches.

Punch required, 1 1/2 inches.

660 Watts, 250 Volts  
With Screw Terminals



No. 4101

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb.
*4100	\$22.00	25	250	52

#### With Screw Terminals Enclosed

*4101	\$24.00	25	250	66
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#### With 9-Inch No. 14 Rubber Covered Wire Leads

*4114	\$28.00	25	250	69
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No. 4114

#### With No. 18 Heat Resisting Wire Leads

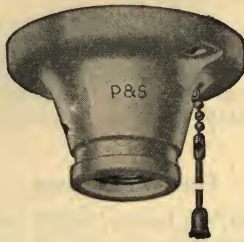
*4118	\$26.00	25	250	57
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\*Furnished with unglazed shell and ring.



**P & S Porcelain Pull Receptacles****With Flush Back**

250 Watts, 250 Volts

**For 3¼-Inch Boxes**

Diameter of base 3½ inches; height overall, 2¼ inches.  
Holes for supporting screws spaced 2¾ inches on center.

**With Shade-Holder Groove Ring**

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
4026	\$56.00	Insulated Nickel Chain...	10	50	40
4026-1	50.00	Short Chain Only.....	10	50	40
4026-2	50.00	Short Chain, Long Cord...	10	50	40

Order P & S 41 for similar device in keyless style.

**For 4-Inch Boxes**

Diameter of base, 4¼ inches; height overall, 2¼ inches.  
Holes for supporting screws are spaced 3½ inches on centers.

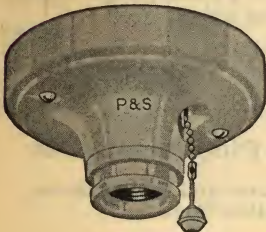
**With Shade-Holder Groove Ring**

4046	\$66.00	Insulated Nickel Chain...	10	50	55
4046-1	60.00	Short Chain Only.....	10	50	55
4046-2	60.00	Short Chain, Long Cord...	10	50	55

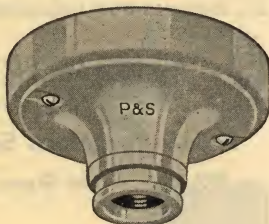
Order P & S 110 for similar device in keyless style.

**P & S Porcelain Receptacles****With Recessed Back**

Pull—250 Watts, 250 Volts; Keyless—660 Watts, 250 Volts



No. 4011



No. 4058

Designed with deep recessed back to simplify installation when boxes are tilted or project from the wall.

Regularly supplied with shadeholder groove ring.

Pull type is equipped with short chain and long cord as standard, but can be supplied with 7-inch nickel chain, insulator and pendant without extra charge.

Receptacles are provided with necessary screws, straps and lock nuts for mounting on boxes.

**For 3¼-Inch Boxes**

Diameter of base, 4 inches; height over all, 2 inches.  
Holes for supporting screws spaced 2¾ inches on centers.

**For Mounting on Boxes with Ears**

Cat. No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
4011	\$82.00	Pull, Short Chain, Long Cord.	10	50	55
4058	68.00	Keyless.....	10	50	55

**For 4-Inch Boxes**

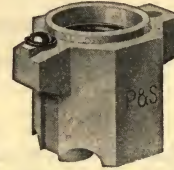
Diameter of base, 4¾ inches; height over all, 2 inches.  
Holes for supporting screws spaced 3½ inches on centers.

**For Mounting on Boxes with Ears**

4012	\$96.00	Pull, Short Chain, Long Cord.	10	50	65
4057	82.00	Keyless.....	10	50	65

**No. 5403 P & S Porcelain One-Piece Medium Base Sign Receptacles****Spring Studs—Screw Terminals**

660 Watts, 600 Volts



Bronze screws are used for holding metal parts in complete assembly and insuring long life. Equipped with heavy terminals, electrolytic copper contact shells and phosphor bronze spring center contacts. Mounting screws and studs are made of bronze.

Carton, 25. Standard package, 100.

No. 5403 ..... per 100 \$30.00

**No. 54 P & S Porcelain One-Piece Medium Base Sign Receptacles****Mounting Screws—Screw Terminals**

660 Watts, 600 Volts



Bronze screws are used for holding metal parts in complete assembly and insuring long life. Equipped with heavy terminals, electrolytic copper contact shells and phosphor bronze spring center contacts. Mounting screws and studs are made of bronze.

Carton, 25. Standard package, 100.

No. 54 ..... per 100 \$30.00

**No. 50715 P & S Porcelain Cleat****Receptacles****With Screw Terminals—For Signs and Surface Wiring**

660 Watts, 250 Volts



Known to the trade as a Pony receptacle.  
Diameter of base, 2½ inches. Height, 1½ inches. Screw holes are spaced 1½ inches.

Packed 10 in a carton, 100 in a standard package.

Weight 25 pounds per standard package.

No. 50715 ..... per 100 \$20.00

**No. 998 P & S Porcelain Pull Receptacles****For Lighting Fixtures**

250 Watts, 250 Volts



Fitted with porcelain clamping rings and gaskets. For use with units having 1½-inch throat.

Furnished with short chain and long cord.

Packed 10 in a carton, 100 in a standard package.

Weight per standard package, 35 pounds.

No. 998 ..... each \$45.00

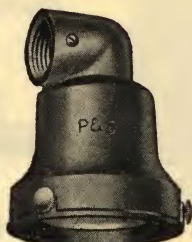


## P&S Industrial and Weatherproof Sockets

660 Watts, 250 Volts



No. 8006



No. 8008

Standard P&S interior. A 2¼-inch shadeholder fits shallow bowl or standard dome reflectors. Die cast metal shell; baked aluminum spray finish.

No. 8006 has ½-inch cap.

No. 8008 has 90° angle cap for ½-inch conduit.

No.	Per 100	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
8006	\$77.00	10	50	25
8008	88.00	10	100	65

## P&S Porcelain Cablettes Switch and Outlet Boxes

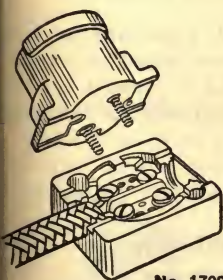


No. 1701

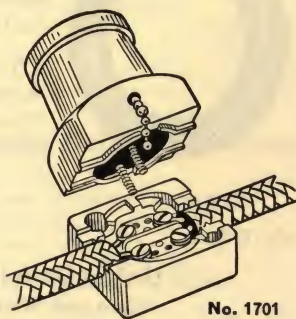
Keyless: 660 Watts, 250 Volts  
Pull: 250 Watts, 250 Volts

For use with non-metallic sheathed cable to permit installation directly on the surface without the use of boxes, clamps, connectors, or soldering.

Made of two pieces, base and lamp-holder body. Has removable knockout to close the opening when feed-through run is not required.



No. 1700



No. 1701

No.	Per 100	Description	Std. Pkg.	Wt., Lb. Std. Pkg.
1700	\$36.00	Keyless.....	50	20
1701	64.00	Pull.....	30	29

## No. 63310 Union Canvas Bakelite Weatherproof Sockets



Used where sockets receive greatest abuse. Made of canvas impregnated with bakelite. Has phosphorus bronze spring contacts. Stranded No. 14 6-inch leads. Rating, 660 watts and 600 volts.

Available with left hand thread, No. 63310LH.  
No. 63310.....per 100 \$45.47

## No. 5464 P & S Bakelite Pin Type Sockets

Medium Base

660 Watts, 250 Volts



For temporary decorative lighting work, for indoor or outdoor use. No stripping, splicing, soldering or tapping of wires. Socket applied directly to wire. Sharp pointed pins pierce insulation and make positive contact. Wires held in place by socket cap.

Socket may be positioned or moved to any desired spacing at any time, as pin contacts will not injure insulation of wire.

A detachable hook is supplied with each socket for hanging socket from tree or messenger wire.

For stranded wire No. 12 or 14. Carton, 10. Standard package, 100.

No. 5464.....per 100 \$28.00

## No. 600 Watertite Weatherproof Sockets

660 Watts, 600 Volts



Used as an under-water unit without injury or short-circuit in socket or lamp. Meets all requirements for outside use. Also, for service in mines, tunnels, boiler rooms, etc., and all places where there is moisture and condensation or where sediments form on sockets.

Standard weatherproof shade holder will fit socket. Fits standard sign receptacle cover.

Outside diameter, 1½ inches. Leads are No. 14 stranded wire; 6 inches long. Carton, 10; standard package, 100.

Weight, standard package, 20 pounds.

No. 600.....each \$3.35

## No. 43310 Union Weatherproof Sockets

Bakelite sockets are recommended where the socket will be subjected to abuse and high temperatures up to 500° C., and with gas filled lamps above 75 watts.

EXTRATUF sockets are recommended where extraordinary rough usage is to be suffered by such installation.

All sockets supplied with spring contact unless solid contact is specified.

Sockets can be furnished with left hand thread if desired.

Medium screw base.

Packed 25 in a carton, 100 in std. pkg.



No. 43310

No.	Per 100	Kind	Thread	Wt. Lb. Per Pkg.
43310	\$17.41	Bakelite	R.H.	14
43310LH	22.46	Semi-Impact	R.H.	14
43310 EXTRATUF	21.47	Bakelite	L.H.	14
43310LH EXTRATUF	26.52	Semi-Impact	L.H.	14

## No. 60666 Union Weatherproof Sockets

Bakelite sockets are recommended where the socket will be subjected to abuse and high temperatures up to 500° C., and with gas filled lamps above 75 watts.

Sockets supplied with spring contact unless solid contact is specified.

Sockets can be furnished with left hand thread if desired.

Medium screw base.

Packed 25 in a carton, 100 in std. pkg.



No.	Per 100	Kind	Thread	Wt. Lb. Per Pkg.
60666	\$24.60	Bakelite	RH	16
60666LH	29.10	Bakelite	LH	16



## Union Ever-Ready Pin Type Sockets



Ever-Ready pin type sockets are absolutely weatherproof.

Made with a long inserted screw so that cap and base can be firmly assembled when wires or conductors are engaged.

A supporting hook is furnished with each socket.

Packed 10 in a carton, 100 in a standard pkg.



	No.	Per 100	Base	Wire No.	Wt. Lb. Std. Pkg.
	43308	\$28.00	Medium	14-12	11
	43318	28.00	Medium	12-10	11
	44408	17.00	Intermediate	18-16	4
	44418	22.00	Intermediate	14	5
	No. 44408	11108	13.00	Candelabra	20-18

## Union Decorating Lighting Streamers

With Candelabra Base Sockets



Equipped with candelabra base, red cap, black base, Ever-Ready pin type bakelite sockets including supporting hooks.

No.	Per 100	Spacing Inches	Wire No.	Std. Pkg.	Wt. Lb. Std. Pkg.
312	....	12	20,18	100	11
318	....	18	20,18	100	15
324	....	24	20,18	100	16

Other spacing available upon request.

## Union Decorating Lighting Streamers

With Intermediate Base Sockets



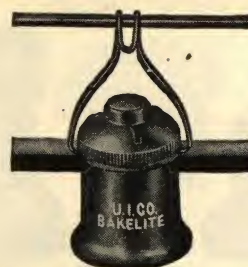
Equipped with intermediate base, red cap, black base, Ever-Ready pin type bakelite sockets including supporting hooks.

Standard package, 100.

With No. 18 Str. Code Wire, Green, Red				With No. 16 Str. Code Wire, Green, Red				With No. 14 Lacquered Black and White Stranded Wire			
No.	Per 100	Spacing Inches	Wt. Lb. per 100	No.	Per 100	Spacing Inches	Wt. Lb. per 100	No.	Per 100	Spacing Inches	Wt. Lb. per 100
706	....	6	8	806	....	6	9	906	....	6	9
708	....	8	9	808	....	8	10	908	....	8	10
710	....	10	10	810	....	10	11	910	....	10	12
712	....	12	11	812	....	12	12	912	....	12	13
715	....	15	13	815	....	15	14	915	....	15	15
718	....	18	15	818	....	18	16	918	....	18	17
724	....	24	16	824	....	24	17	924	....	24	24
730	....	30	23	830	....	30	23	930	....	30	28
736	....	36	27	836	....	36	28	936	....	36	37

## Union Decorating Lighting Streamers

With Medium Base Sockets



Equipped with standard medium base Ever-Ready pin type bakelite sockets including supporting hooks, red cap, and black base.

Standard package, 100 sockets.

With No. 14 Str. R.C. Code Wire				With No. 12 Str. R.C. Code Wire				With No. 10 Extra Flexible Code Lacquered Wire			
No.	Per 100	Spacing Inches	Wt. Lb. per 100	No.	Per 100	Spacing Inches	Wt. Lb. per 100	No.	Per 100	Spacing Inches	Wt. Lb. per 100
406	....	6	13	606	....	6	14	506	....	6	15
408	....	8	14	608	....	8	16	508	....	8	17
410	....	10	16	610	....	10	17	510	....	10	19
412	....	12	17	612	....	12	19	512	....	12	22
414	....	14	18	614	....	14	21	514	....	14	23
415	....	15	19	615	....	15	22	515	....	15	26
418	....	18	20	618	....	18	25	518	....	18	29
420	....	20	23	620	....	20	27	520	....	20	31
422	....	22	25	622	....	22	29	522	....	22	33
424	....	24	27	624	....	24	31	524	....	24	37
426	....	26	29	626	....	26	33	526	....	26	39
428	....	28	31	628	....	28	35	528	....	28	42
430	....	30	33	630	....	30	37	530	....	30	44
436	....	36	40	636	....	36	45	536	....	36	47

## No. R-20 Union Rubber Sealing Rings



Used to protect weatherproof light sockets from corrosive gases and moisture. Lamp locks in socket so that vibration will not jar lamps out of contact.

To install, place ring on lamp thread, screw lamp into socket. Pressure seal is created between socket lip and bulge of the lamp.

No. R-20.....per 100 ....

## Union Bakelite Bushings

With and Without Locknuts



No. B-18



No. B-18-LN

Made by hot molded process to produce strong, sharp, seamless threads.

Packed 100 in a carton. Standard package, 1000.

Thread Size Inches	Without Locknuts	With Locknuts	I.D. In.	For Knockout Inches	Length Under Hd., In.
1/8	B-18	B-18 -LN	17/64	13/32	31/64
1/4	B-14	B-14 -LN	5/16	17/32	19/32
3/8	B-38	B-38 -LN	13/32	21/32	47/64
1/2	B-12	B-12 -LN	9/16	27/32	29/32
1/2	B-122	B-122-LN	27/32	27/32	29/32



## Protex Rubber Covered Sockets

660-Watts, 250-Volts



No. 700

The outer covering of this socket is made of high quality rubber compound to protect the interior from breakage and also make the socket shockproof and safe.

Packed 10 in a carton, 100 in a standard package.



No. 717

### Push Type

To remove the interior of the socket, pull out fiber bar. When lamp is in socket, bar cannot be removed, as spring contact locks bar in.

No.	Each	Description	Wt., Lb. Std. Pkg.
700	\$1.40	Pendant with 1/16-Inch Cord Hole.....	27
701	1.60	1/8-Inch Cap.....	29
702	1.60	1/4-Inch Cap.....	29
703	1.70	3/8-Inch Cap.....	31
704	1.70	1/2-Inch Cap.....	32
705	2.00	Pendant with 1/8 to 1/2-Inch Cord Grip....	38

### Keyless Type

Socket interior can be removed from the rubber cover by pushing or pulling it out.

No.	Each	Description	Wt., Lb. Std. Pkg.
710	\$.90	Pendant with 1/16-Inch Cord Hole.....	22
711	1.10	1/8-Inch Cap.....	23
712	1.10	1/4-Inch Cap.....	23
713	1.20	3/8-Inch Cap.....	25
714	1.20	1/2-Inch Cap.....	26
717	1.30	Pendant with 1/8 to 1/2-Inch Cord Grip....	33

## Watertite Rubber Weatherproof Sockets

With Cadmium-Plated Covers

660-Watts, 600-Volts



Specify flat or raised covers as desired.

Leads consist of all rubber No. 14 stranded wire, 6 inches long. For leads longer than 6 inches, add 3 cents for each additional lineal foot desired.

Packed 10 in a carton, 100 in a standard package.

No.	Each	Description	Wt., Lb. Std. Pkg.
601	602		
Each	\$.50		.50
For Outlet Box.....	inches	3 1/4	4
Weight per Standard Package.....	pounds	54	55

## Watertite Molded Rubber Lamp Receptacles

Made of one-piece molded rubber.

Packed 10 in a carton, 100 in a standard package.

Weight per standard package, 31 pounds.



No. 603,  
With Side Wires

For indoor and outdoor use; tunnel work and mine lighting; and for railway signal and crossing gate lighting.

Screw spacing, 2 inches, center to center.

No. 603.....each \$ .70



No. 604,  
with Back Wires

Designed for spider outlet box covers. Especially suitable for locations where there is moisture and dust.

Screw spacing, 2 inches, center to center.

No. 604.....each \$ .70

## Union Bakelite Wiring Devices

For Outlet Boxes

Weatherproof, keyless lamp base with shade holder grooves.



No.	Each	Description	Wt., Lb. Std. Pkg.
3058	4058		
Per 100.....	\$41.04		42.93
Size.....	inches	3 1/4	3 1/4, 4
Carton.....		10	5
Std. Pkg.....		100	100
Wt. per Std. Pkg....	lb.	20	25

## McGill Keyless and Levolver Sockets

660-Watt

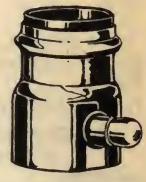
For Portable Lamp Guards



No. 4003



No. 4004



No. 4005

No. 4003, black composition, is firmly imbedded in the handles of all keyless models.

Nos. 4004 and 4005 are Levolver types, thoroughly insulated, with fiber levers and bakelite shells.

Standard package 100, carton 10.

No.	Each	Description	Wt., Lb. Std. Pkg.
4003	\$.40	Black Composition, Keyless	25
4004	.60	Brass Levolver with Fiber Lever	17
4005	.70	Brass Levolver with Fiber Lever	17
4015	.80	Grounded Similar to No. 4003	7

## McGill Levolver Bathroom Fixture Sockets

660 Watts, 250 Volts

For brackets and chandeliers using candles, husks, and other types of socket covers.

Porcelain lever serves as a finishing knob and does away with unsightly black keys, slots in husks, or chains coming out of the side.

Standard package, 100, carton 10.



No. 121

No.	Each	Nipple Inches	Lever	Wt., Lb. Std. Pkg.
103	\$.65	5/8	Brass or Nickel	18
119	.70	5/8	Plain	14
121	.80	5/8	Porcelain	16
122	.80	5/8	Porcelain	15
*127	.70	Square	Plain	20

## No. 292 P&S Porcelain Socket Adapters



Mogul to medium base.

Carton, 10.

Standard package, 100.

No. 292.....per 100 \$35.00

## Bryant Socket Reducers



No. 391



No. 392

Cat. No.	Per 100	Description	Carton Std. Pkg.	Wt., Lbs. Std. Pkg.
421	\$35.00	Mogul to Medium.	10 100	19
392	24.00	Medium to Candelabra.....	25 100	6
391	18.00	Candelabra to Miniature.....	20 100	1



### Morse Eureka Lamp Socket Adapters With Medium Base

Nos. 67  
and 68

#### For Use with Photoflash Lamps

Makes Mighty Midget Photoflash Lamp No. 5, with single contact Bayonet base, immediately available to present photographic equipment.

Adapter is screwed into lamp socket and bulb inserted.

- No. 68, To Replace Nos. 7 & 11 Bulbs, Medium to Single Contact.....each \$ .49  
No. 681, to Replace No. 21 Bulb, Medium to Single Contact.....each .60



No. 681

#### For General Use

For general purposes and on all occasions where it is desired to use automotive type bulb in standard screw receptacles.

- No. 67, Medium to Double Contact.....each \$.51

### Morse Eureka Lamp Socket Adapters



No. 69

- No. 69, Foreign Double Contact to Medium Screw Base...each \$ .46

- No. 83, Medium Screw Base to Foreign Double Contact...each .50

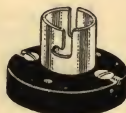


No. 83

### Morse Eureka Bayonet Sockets



No. 30



No. 20-21

Has black bakelite base, plunger inserts, brass shell and screws.

Nickel plated.

No.	Double Contact		Single Contact
	30	20	21
Each.....	\$ .73	.62	.59
Base.....inches	1 5/8 x 1 1/16	*1 3/8	*1 3/8
Overall Height.....inches	1 1/8	1 5/16	1 5/16

\*Diameter.

### No. 91 Benjamin Socket Extensions

Medium Base  
660 Watts, 250 Volts



For attaching glassware to flush sockets or ceiling receptacles. Lowers the lamp, in long narrow shades, 7/8 inch. Permits use of 60, 100 and 150-watt lamps in reflectors designed for next larger size lamp. Lacquered brass finish.

Packed 10 in a carton, 50 in a standard package.

- No. 91, Weight per Standard Package, 10 Lb..per 100 \$17.00

### No. 4396 Benjamin Mogul Base Socket Extensions

Listed by Underwriters' Laboratories

1500-Watts, 600-Volts



By means of this device the socket may be extended 2 1/2 inches, and lamp filament lowered correspondingly.

Fixtures designed for 750, 1000 and 1500-watt lamps may be converted for use with 300 and 500-watt lamps, with the addition of this extension.

Body is of porcelain with contact parts of brass or copper.

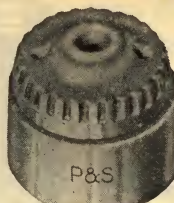
Packed 10 in a carton, 50 in a standard package.

Weight per standard package, 55 pounds.

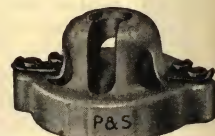
- No. 4396.....per 100 \$110.00

### P & S Concealed Rosettes

660 Watts, 250 Volts



No. 79



No. 1999

No.	Per 100	Description	Ht. In.	Dimensions of Base In.	Screw Spacing In.	Car- ton	Std. Pkg.	Wt. Lb.
*79	\$36.00	2-Piece Fuseless	1 3/32	2 1/4 Diam.	1 13/32	10	100	42
1999	22.00	1-Piece Fuseless	1 1/4	2 23/32 x 2 7/32	1 7/16	10	100	28

\*Not N.E.C. Standard.

### No. 76 P&S Porcelain Two-Piece Fuseless Rosettes

660 Watts, 250 Volts

Dimensions of base, 2 1/8 x 2 7/8 in. Height, 1 5/8 inches.

Screw spacing, 1 1/8 inches.

Not N.E.C. standard.

Carton, 10. Standard package, 100.

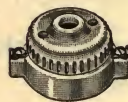
- No. 76.....per 100 \$36.00



### H & H Porcelain Rosettes

Fuseless, 660 Watts, 250 Volts

Fusible, 2 Amperes, 125 Volts



No. 483



No. 484

Nos. 483, and 838 have a base diameter of 2 1/4 inches. Nos. 484 and 839 have a base diameter of 2 3/8 inches. Screws spaced 1 5/8 inches on centers.

No. 485 has a base size 2 5/16 inches square.

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
483	\$22.00	Fuseless, Cleat Base.....	10	100	41
484	22.00	Fuseless, Concealed Base.....	10	100	48
485	22.00	Fuseless, Molding Base.....	10	100	42
838	32.00	Fusible, Cleat Base.....	10	100	40
839	32.00	Fusible, Concealed Base.....	10	100	49

### No. 1999 H & H Porcelain Rosettes

One Piece—Fuseless



Cleat and concealed type.

Diameter, 2 1/2 inches, screws spaced 1 1/2 inches on centers.

Carton, 10. Standard package, 100.

Weight per standard package, 23 pounds.

- No. 1999.....per 100 \$13.00

### H & H Porcelain Rosettes

For Outlet Boxes



No. 1174



No. 1173

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
1174	\$42.00	With Terminals, 3 1/4" Box.....	10	50	27
1175	58.00	With Terminals, 4" Box.....	5	50	37
1172	11.00	Without Terminals, 3 1/4" Box.....	10	50	19
1173	15.00	Without Terminals, 4" Box.....	5	50	36



**Bryant Porcelain Rosettes**

With Fusible Caps  
2 Amperes, 125 Volts



No. 1501



No. 1502

No.	Per 100	Diam. In.	Screw Spacing In.	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
*1501	\$40.00	2 11/32	1 5/8	10	100	40
*1502	40.00	2 11/32	1 5/8	10	100	49

With Screw Terminals  
660 Watts, 250 Volts



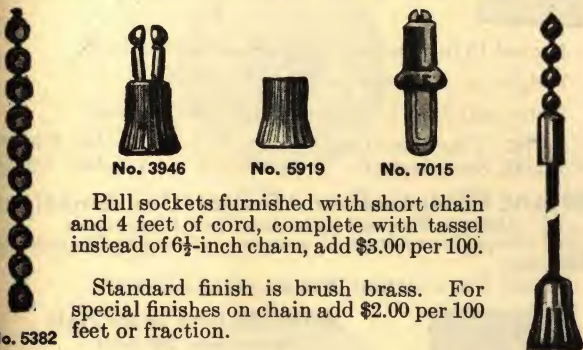
No. 574



No. 575

No.	Per 100	O.D. In.	Screw Spacing In.	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
574	\$42.00	3 11/16	2 3/4	10	50	27
575	58.00	4 21/32	3 9/32 & 3 1/2	5	50	48

\*Not listed as standard by Underwriters' Laboratories, Inc.

**Hubbell Socket Chain, Cord, and Tassels**

Pull sockets furnished with short chain and 4 feet of cord, complete with tassel instead of 6 1/2-inch chain, add \$3.00 per 100.

Standard finish is brush brass. For special finishes on chain add \$2.00 per 100 feet or fraction.

No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lb.
5382	\$9.00	No. 6 Standard Socket Chain.....	*1000	18	
6563	3.00	Black Linen Cord.....	*1000	10	
6733	3.00	White Linen Cord.....	*1000	10	
6735	4.20	Heavy Black Linen Cord.....	*100	3	
3436	28.00	6-Foot Cord, Chain and Tassel...	*250	10	
3321	38.00	6 1/2-Inch Chain, Ins. and Tassel...	*250	10	
3946	11.00	Tassel, Standard Detachable....	*250	5	
3947	11.00	Tassel, Candelabra Detachable...	*50	1	
6561	24.00	6-Foot Cord Only with Tassel....	*250	10	
6562	34.00	10-Foot Cord Only with Tassel...	*250	15	
5919	11.00	Tassel, Adjustable for Linen Cord.	*250	5	

\*Packed in bulk. †Price per 100 feet. ‡No. of feet.  
§Furnished in black finish to match cord. ||Ounces.  
¶Can be supplied with black cord at no extra price.

**Hubbell Detachable Links**

No. 6814



No. 1650 and 1651

Links are easy to attach and detach. Neat in appearance. Standard finish is brush brass. Other finishes on order.

No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lb.
*6814	\$16.00	Detachable Insulating Link..	100	100	8
1650	5.00	Splicing Link for No. 3 Chain.	200	200	8
1651	5.00	Splicing Link for No. 6 Chain.	200	200	8

\*This device is fitted with slotted catches for chain.

**Bryant Shade-Holders**

Ventilated—With Screws



No. 501

Attaches directly to the threaded bead on medium base sockets and receptacles. Because of wedge thread, fit between socket-shell and holder is rigid.

Made of finished brass.

No.	501	505	511
Per 100.....	\$19.00	36.00	46.00
Size.....inches	2 1/4	3 1/4	4
Carton.....	50	25	10
Standard Package.....	500	250	100
Wt. per Std. Pkg.....pounds	21	31	18

**Bryant Weatherproof Shade-Holders**

Used with any medium base porcelain or composition socket or receptacle provided with a shade-holder groove.

Not N.E.C.S.

Cat. No.	Per 100 Finished	Size Inches	Carton	Std. Pkg.	Pkg. Wt. Lbs.
628	\$19.00	2 1/4	25	250	15
629	27.00	3 1/4	10	100	10

**No. 549 Bryant Fixture Rings**

Listed by Underwriters' Laboratories, Inc.



Used for lamp shade frames and ornamental fixture pieces.

No.	Per 100	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
549	\$12.00	50	200	4

**Hubbell Shade Holders**

Direct Threading 3-Screw Type

For Brass Shell Sockets

Standard finish is brush brass. Can be furnished less screws, untapped.

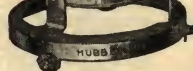


No. 501

No.	Per 100	Size In.	Carton	Std. Pkg.	Pkg. Wt. Lb.
501	\$19.00	2 1/4	50	500	26
505	36.00	3 1/4	25	250	30

**For Medium Base Weatherproof Sockets**

Standard finish is brush brass or wash nickel. Brush brass is furnished unless otherwise specified.



No. 6633

No.	Per 100	Size Inches	Carton	Std. Pkg.	Pkg. Wt. Lb.
6633	\$19.00	2 1/4	25	200	13
6634	27.00	3 1/4	10	100	15
6635	53.00	4	10	100	23

**H & H Uno Shadeholders**

With Ventilating Holes



No. 4000



No. 4004

Standard finish is brass.

No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lb.
4000	\$19.00	2 1/4-Inch, with Screws.....	50	500	25
4004	18.00	2 1/4-Inch, Wire Spring.....	50	250	14
4007	32.00	Form H, Wire Spring.....	25	100	11
4001	30.00	3 1/4-Inch, with Screws.....	25	250	27
4002	42.00	4-Inch, with Screws.....	10	100	16



**Bryant Bakelite Flush Receptacles**

Listed by Underwriters' Laboratories, Inc.  
15 Amperes, 125 Volts; 10 Amperes, 250 Volts



Packed 10 in a carton, 100 in a standard package.

**No. 4812 Duplex Top Wiring Terminals**

With T Slots—Double-Sided Contacts—  
Wide Yoke

Has four terminal screws.

No. 4812.....per 100 \$58.00  
Weight per Standard Package...pounds 22

**Side Wiring Terminals**

With T Slots  
Double-Sided Contacts  
Wide Yoke  
No. 4831, Single

No. 4831.....per 100 \$32.00  
Weight per Std. Pkg....pounds 15

**No. 4832, Duplex**

Has four terminal screws.

No. 4832.....per 100 \$39.00  
Weight per Std. Pkg....pounds 22

No. 4832-X For 2-Circuit Installations  
For Switch Control of One Outlet  
Two Feeds, Two Returns

No. 4832-X.....per 100 \$50.00  
Weight per Std. Pkg....pounds 22

No. 4832-Y Two Feeds, One Return

No. 4832-Y.....per 100 \$50.00  
Weight per Std. Pkg....pounds 22

No. 770, With Parallel Slots  
For Tumbler-Switch Plate, Single

No. 770.....per 100 \$30.00  
Weight per Std. Pkg....pounds 13

**Bryant Hemco Bakelite Receptacles****Parallel Slots**

No. 141



No. 142

15 Amperes,  
125 Volts  
10 Amperes,  
250 Volts

No.	Per 100	Description	Car-ton	Std. Wt., Lb. Pkg.	Std. Pkg.
141	\$20.00	Single Receptacle, Brown	10	100	12
142	24.00	Duplex Receptacle, Brown	10	100	17
141I	26.00	Single Receptacle, Ivory	10	50	6
142I	30.00	Duplex Receptacle, Ivory	10	50	8

**Bryant 3-Wire Duplex Flush Receptacles****Side Wired**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts Each Outlet

Listed by Underwriters' Laboratories, Inc.



No. 4326

For use with standard duplex receptacle plates (V section).

Base,  $2\frac{3}{4} \times 1\frac{1}{2}$  inches. Depth,  $\frac{7}{8}$ -inch. Supporting screw spacing,  $3\frac{3}{8}$  inches.

No.	Per 100	Car-ton	Std. Wt., Lb. Pkg.	Std. Pkg.
4326	\$184.00	10	30	6
*4327	184.00	10	30	6

\*Has grounded yoke.

**Bryant Receptacle and Pilot Lamp Combinations**

Receptacles; 15 A., 125 V.; 10 A., 250 V.

Single gang. With porcelain cup. Plate,  $2\frac{3}{4} \times 4\frac{1}{2}$  inches.

Suitable machine screws furnished for mounting on boxes.

Carton, 2. Standard package, 10.

Weight standard package No. 5121, 6 pounds; No. 5122, 4 pounds.

No. 5121, with .060-In. Brush Brass Plate...per 100 \$214.00

No. 5122, with Brown Bakelite Plate.....per 100 214.00

**Bryant Fan Hanger Outlets**

15 Amps., 125 Volts; 10 Amps., 250 Volts



A cadmium-plated steel sub-plate supports the bakelite receptacle. The brush brass flush plate is held independently and therefore will not loosen even if the fan hanger supporting screw is not replaced when fan is removed.

Packed 10 in a carton, 20 in a standard package.

Weight per standard package, 14 pounds.

Listed standard by Underwriters' Laboratories.

No. 3750, Yoke Mounting Type.....per 100 \$286.00

No. 3751, Stud Support.....per 100 286.00

**Bryant Receptacle and Switch Combinations**

Listed as Standard by Underwriters' Laboratories

All receptacle ratings, 15 amperes, 125 volts; 10 amperes, 250 volts.

Packed 2 in a carton, 10 in standard package.

With .060-Inch Brass Plate  
10 Amperes, 250 Volts

No.	Per 100	Description	Wt., Lb. Std. Pkg.
2994	\$239.00	Double Pole.....	6
		20 Amperes, 250 Volts	
2995	\$247.00	Double Pole.....	6

With Brown Bakelite Plate

10 Amperes, 250 Volts

2989	\$225.00	Double Pole.....	5
		20 Amperes, 215 Volts	
2999	232.00	Double Pole.....	5



No. 2994





## Hemco Outlet Box Receptacles



No. H341

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.
H341	\$34.00	Single, on 3¼-Inch Box Cover.	10	50	15
H342	34.00	Duplex, on 3¼-Inch Box Cover.	10	50	15
H441	37.00	Single, on 4-Inch Box Cover...	10	50	22
H442	39.00	Duplex, on 4-Inch Box Cover...	10	50	25

## Bryant Outlet Box Receptacles

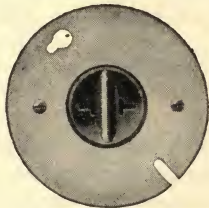
**Brown Bakelite—With T Slots**  
**With Satin Cadmium Finish Metal Covers**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts Each Outlet

Provided with side-wired brown bakelite receptacles.

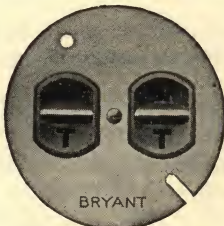
Receptacles are also provided with raised ribs which facilitate insertion of caps in the concave surfaces.

### Single, Side Wired



No.	Per 100	Size Box Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
3780	\$38.00	3¼	10	100	34
4780	43.00	4	5	50	23

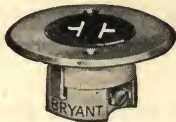
### Duplex, Side Wired



No.	Per 100	Size Box Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
3781	\$47.00	3¼	5	50	16
4782	52.00	4	5	50	26

## Bryant Round Porcelain Receptacles

15 Amperes, 125 Volts  
10 Amperes, 250 Volts



No. 115

Suitable machine screws are furnished for mounting these devices on boxes.

The standard finish is brush brass which will be furnished when no finish is specified.

### With Solid Brass Plate

Cat. No.	Per 100	Diam. Plate In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
115	\$116.00	2¾	2	50	19

## Bryant Bull's Eye Jewels

The Bryant Bull's Eye is a warning signal of great utility and convenience. It consists of a ruby plastic jewel fastened in the center of a flush plate of standard dimensions, behind which is a small electric lamp in a special receptacle.

This lamp is wired in multiple with the devices whose operation it indicates.

Green, clear, opalescent, amber, or blue jewels can be furnished on special order without extra charge.

### Ruby Jewels—Molded Plastic

**Round for Mounting in F Plates**  
**With Solid Brush Brass Rim**

Removable from front.



No. 3850

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
3850	\$39.00	10	30	1½

**Rectangular for Mounting in Slot of an S Plate**  
**With Solid Brush Brass Rim**

Non-removable.



No. 746

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
746	\$39.00	10	30	1½

## Bryant Flush Lamp Receptacles

For Use with Jeweled and Louvre Plates

75 Watts—125 Volts

With No. 618 125-volt lamp.  
Will take either Form H or Type S-7 candelabra base lamps, rated 125 volts.

Bakelite Base cups, 2¾ inches long; 1¼ inches wide; 1¼ inches deep.

Supporting screw spacing, 3½ inches.

May be installed individually or may be mounted in a combination with switches and receptacles and the entire combination covered by a single flush plate.

Receptacle without lamp, \$83. per 100.



No. 427

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
427	\$116.00	10	30	6

## Bryant Louvre Plate

For Use with Flush Lamp Receptacles

Can be used with No. 427 receptacle and flush buzzers.

Made in .040-inch brass only.

Single gang.



No. OL241

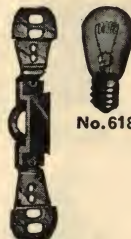
No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
OL241	\$134.00	5	30	18

## Bryant Flush Lamp Receptacles

125 Volts

Candelabra base, 6 watts Mazda.

For No. 427 receptacle.



No. 618

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
618	\$33.00	10	30	1½

### Insert to Fill Opening in "S" Plate

Brown bakelite. Insert on metal yoke.

No. 756

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
756	\$24.00	10	30	

## Bryant Receptacle with No. 618 Lamp

For Plates with Removable Bull's Eye

75 Watts—125 Volts

For use only with plates with removable bull's eye No. 3850. With No. 618 125-volt lamp.

Receptacle without lamp, \$94. per 100.



No. 3851

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
3851	\$127.00	10	30	7½





### No. H200 Bryant Bakelite Plural Plugs

#### Twin-Lites

250 Volts, 660 Watts

One-piece molded assembly.  
Carton, 10. Standard package, 100.  
Weight per standard package, 21  
pounds.  
No. H200.....per 100 \$64.00



### No. H203 Bryant Bakelite Plural Plugs

#### Trip-Lite

250 Volts, 660 Watts

One-piece molded assembly.  
Carton, 10. Standard package,  
50. Weight per standard pack-  
age, 15 pounds.  
No. H203.....per 100 \$98.00

### Bryant Hemco Cube-Taps, Twin-Lite, and Thru-Lite Plugs



No. H17  
Cube-Tap



No. H18  
Cord Cube-Tap



No. H20  
Twin-Lite



No. H204  
Thru-Lite

Cat. No.	Per 100	Description	Car- ton	Std. Pkg.	Wt., Lb. Std. Pkg.
H17	\$18.00	Bakelite Cube-Tap.....	20	100	9
H18	19.00	Bakelite Cord Cube-Tap..	20	100	9
H20	34.00	Bakelite Twin-Lite.....	10	100	11
H204	75.00	Bakelite Thru-Lite.....	10	100	15

### Bryant Hemco Bakelite and Rubber Handle Caps



No. HF

#### Bakelite Handle Caps

Cat. No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb., Std. Pkg.
HF	\$11.00	With 1 1/2-Inch Hole	10	100	5



Nos. HRE  
and HRF

#### Rubber Handle Caps

HRA	\$18.00	.312 to .390-In. Hole	25	100	7
HRB	18.00	.260 to .312-In. Hole	25	100	7
HRE	20.00	.312 to .390-In. Hole	25	100	8
HRF	20.00	.260 to .312-In. Hole	25	100	8
HRS	18.00	.578-Inch Hole....	25	100	7



Nos. HUT  
and HUX

#### Bakelite Caps

HUV	\$10.00	1 3/8-Inch Hole.....	25	500	18
HUY	10.00	5/16-Inch Hole.....	25	500	18
HUT	10.00	3/8 x 3/4-Inch Hole...	25	500	18
HUX	10.00	1/4 x 3/16-Inch Hole...	25	500	18

### No. H706 Hemco Bakelite Plug Bodies



Put up 25 in a carton, 500 in a standard pack-  
age.

Weight of standard package, 21 pounds.

No. H706.....per 100 \$10.00

### No. 100 Bryant Connecting Devices

Composition Screw Body—for Parallel Blades

660 Watts, 250 Volts



No.	Per 100	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
100	\$16.00	10	250	19

### Bryant Standard Composition Caps

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. JK with armored cord grip and 1/16-inch  
cord hole. No. JM with armored cord grip and  
cord hole with shoulder 5/8-inch diameter at  
outer end, 1/2-inch diameter at inner end.

Carton, 10; standard package, 50. Weight  
package, 7 pounds:

No. JK.....per 100 \$37.00  
No. JM.....per 100 37.00

### No. JX Bryant Composition Caps

With Cord Grip

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

1/16-inch cord hole.

Steel armored cap, cadmium-plated.

With cord grip.



Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lb. Std. Pkg.
JX	\$41.00	10	50	6

### No. KG Bryant Composition

Motor Attachment Caps

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Has 1 1/2-inch cord hole.

Base is 1 1/2 inches in diameter and 1 1/16 inches  
thick. Screw spacings, 1 inch.



Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lb. Std. Pkg.
KG	\$22.00	10	50	4 1/4

### No. TW Bryant Double T Caps

With Cord Grip—For Heavy Duty

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Armored cadmium-plated cap.

Has 1 1/2-inch cord hole.



Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lb. Std. Pkg.
TW	\$61.00	10	30	4

### No. KL Bryant Composition Adapters

660 Watts, 250 Volts

Diameter, 1 1/16 inches.

Length, 1 1/32 inches.

Carton, 10. Standard package, 50.

Package weight, 7 pounds.



No. KL.....per 100 \$44.00

### No. 345 Bryant Attachment Plugs

Molded Weatherproof, Fuseless

660 Watts, 600 Volts



In one piece. Has 4 1/2-inch No. 14 stranded  
wire leads.

Carton, 10; standard package, 250.

Package weight, 44 pounds.

No. 345.....per 100 \$56.00



## No. UR Bryant Flush Motor Plug Caps

### Back Connected



15 Amps., 125 V.; 10 Amps., 250 V.  
Diameter of cup, 1½ inches. Depth, 1¼ inches. Screw hole spacing, 1½ in.  
Carton, 10; standard package, 50.  
Weight standard package, 6½ pounds.  
No. UR..... per 100 \$48.00

## Bryant Porcelain Receptacles

15 Amperes, 125 Volts; 10 Amperes, 250 Volts  
Listed by Underwriters' Laboratories, Inc.



No. 105



No. 112



No. 114

Packed 10 in a carton, 50 in a standard package.

### Concealed Wiring

No.	Per 100	Diameter Inches	Height Inches	Screw Spacing Inches	Wt., Lb. Std. Pkg.
105	\$56.00	2⅞	1⅝	1½	15

### Cleat Wiring

112	\$60.00	1¾	1½	⅝	13
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### Panel or Plate Mounting

Requires 1⅞-inch hole. Projects ½ inch above and ¾ inch below mounting level. Distance from back of cover to bottom of wire grooves, 1⅞ inch.

114	\$56.00	1⅞	...	...	12
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## No. 4730 Bryant Plug Receptacles

### For Mounting in Canopies

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Made of bakelite with 6-inch wires and 1⅞-inch mounting holes.  
Carton, 10. Standard package, 50.  
Weight per standard package, 4 pounds.

No.....	4730
Per 100.....	\$44.00

## No. 113 Bryant Composition Outlet Box Bodies

### For ½-Inch Knockouts

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Does not have tandem slots  
Will not take polarity caps.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
113	\$41.00	10	50	9

## No. 103 Bryant Composition Cord Connector Bodies

15 Amperes, 125 Volts  
10 Amperes, 250 Volts

Diameter, 1⅝ inches. Cord hole, 1⅞ inch.  
Has T slots.  
Carton, 10; standard package, 50.  
Package weight, 7 pounds.

No. 103.....	per 100	\$44.00
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## No. H130 Bryant Bakelite Cord Connector Bodies

10 Amperes, 250 Volts—15 Amperes, 125 Volts

Diameter, 1⅞ inches.  
Length, 1⅞ inch.  
With ⅝-inch cord hole.  
Carton, 10. Standard package, 50.  
Weight package, 4 pounds.

No. H130.....	per 100	\$24.00
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## Bryant 2-Wire Twistlock Midget Cord Connectors

15 Amperes, 125 Volts—10 Amperes, 250 Volts  
Listed by Underwriters' Laboratories, Inc.

For small appliances and equipment. Prevents service interruptions caused by accidental separation of connectors. Extremely compact.

Made of brown bakelite. The steel cord grips match the bakelite.

Packed 10 in a carton, 50 in a standard package.

### Caps

Diameter, 1 inch. Height of bakelite, ½ inch.

#### Without Cord Grip

Cable diameter, .375 inch.



No. TL7462



No. TL7465

No.	Per 100	Description	Wt., Lb. Std. Pkg.
TL7462	\$22.00	Non-Polarized.....	1¼
TL7477	22.00	Polarized.....	1¼

#### With Cord Grip

Cable diameter, .218 to .312 inch.

TL7465	\$29.00	Non-Polarized.....	1½
TL7479	29.00	Polarized.....	1½

### Connector Bodies

Takes both polarized and non-polarized caps.  
Diameter, 1 inch. Length of bakelite body, 1.187 inches.

#### Without Cord Grip

Cable diameter, .375 inch.



No. TL7461



No. TL7464

No.	Per 100	Wt., Lb. Std. Pkg.
TL7461	\$44.00	2½

#### With Cord Grip

Cable diameter, .218 to .312 inch.

TL7464	\$51.00	3
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### Connector Bases

#### With Mounting Cup

Plate diameter, 1.625 inches. Screw spacing, 1.375 inches. Depth, .937 inch. Body diameter, 1.062 inches. Mounting hole diameter, .156 inch.



No. TL7466

No.	Per 100	Description	Wt., Lb. Std. Pkg.
TL7466	\$50.00	Non-Polarized.....	3
TL7467	50.00	Polarized.....	3

### Flush Receptacles

#### With Mounting Cup

Takes both polarized and non-polarized caps. Plate diameter, 1.625 inches. Screw spacing, 1.375 inches. Depth .781 inch. Body diameter, 1.031 inches. Mounting hole diameter, .156 inch.



No.	Per 100	Wt., Lb. Std. Pkg.
TL7468	\$55.00	3

## Bryant Duplex Flush Convenience Outlets

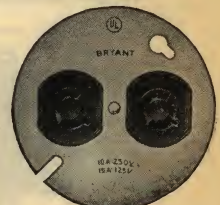
### Twist-Tite—Grip Contacts

Listed by Underwriters' Laboratories, Inc.

15 Amperes, 125 Volts  
10 Amperes, 250 Volts



No. 9200



No. 9206

### For Standard Wall Boxes

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
9200	\$50.00	Brown Bakelite.....	10	100	25
<b>With Cadmium Finished Covers</b>					
9205	\$55.00	¾-Inch Box.....	10	50	20
9206	57.00	4-Inch Box.....	5	50	25



**Bryant Polarized Caps**

20 Amperes, 250 Volts



No. 652

**Composition**

With  $\frac{3}{16}$ -inch cord hole.  
Carton, 10.  
Standard package, 30.  
Weight per standard package, 6 pounds.  
No. 652.....per 100 \$56.00



No. 723

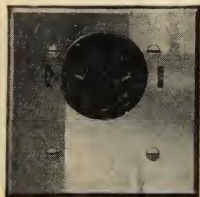
**With Cord Grip**

Armored, cord grip, cadmium-plated.  
For  $\frac{3}{8}$  to  $\frac{1}{2}$ -inch diameter cord.  
Carton, 10.  
Standard package, 30.  
Weight per standard package, 6 pounds.  
No. 723.....per 100 \$87.00

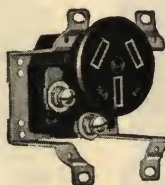
**Bryant 3-Wire Polarized Outlets****Flush Mountings**

50 Amperes, 250 Volts

**Bakelite Receptacles and Brush Brass Plates**  
**Solderless Terminals**



No. 3846

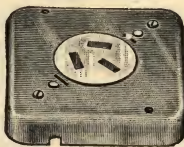


No. 3845

No. 3845 fits standard 4-inch box (Universal No. 52151-S with  $\frac{3}{4}$ -inch knockouts and No. 52C18 cover) and standard  $4\frac{1}{16}$ -inch square box (Universal No. 72171-1 with No. 72C18 cover.)

Plates for No. 3845 receptacles are with grounding contacts.

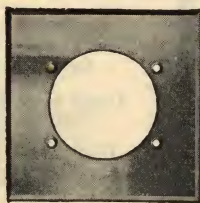
No.	Per 100	Description	Ctn.	Std. Pkg.	Std. Wt. Lb.	Std. Pkg.
3846	\$387.00	Receptacle with .040 In. Plate	2	10	10	
3845	291.00	Receptacle Only	2	10	7	
3847	96.00	.040 Plate for No. 3845	2	10	4	

**Porcelain Receptacles and Surface Box Covers****Solder Lugs**

No.	Per 100	Description	Ctn.	Std. Pkg.	Std. Wt. Lb.	Std. Pkg.
759	\$166.00	Cover Only	2	10	9	
757	512.00	Receptacle Only	2	10	12	

**High Capacity Black Porcelain Receptacles**

No. 7112



No. 7114

No.	Per 100	Description	Car-ton	Std. Pkg.	Std. Wt. Lb.	Std. Pkg.
7112	\$473.00	30-Amp. 250 V. Receptacles with Screw Terminals.....	2	5	8	
7114	120.00	.060-In. Brass Brush 2-Gang Plate.....	2	5	2	

**Bryant 3-Wire Caps, Connectors, and Receptacles**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

**Caps**  
**Brown Bakelite**

No. 9111



Nos. 9112 and 9322

Cat. No.	Per 100	Cord Hole In.	Car-ton	Std. Pkg.	Std. Wt. Lb.	Std. Pkg.
9110	\$37.00	$1\frac{3}{32}$	10	50	4	
9111	\$37.00	$1\frac{3}{32}$	10	50	6	
9112	\$59.00	$\frac{3}{8}$ to $\frac{1}{2}$	10	50	8	
9115	\$86.00	...	10	50	10	

**Composition Cord Connectors****Body**

9113	\$78.00	$\frac{27}{64}$	10	50	9	
9114	\$101.00	$\frac{3}{8}$ to $\frac{1}{2}$	10	50	12	

**Body with Armored Cord Grip****Receptacles**

Bases of Nos. 9116 and 9120 are  $2\frac{1}{16} \times 1\frac{1}{16}$  inches. Depth,  $\frac{3}{16}$  inches. Supporting screw spacing,  $3\frac{3}{32}$  inches. Top wiring terminals. Take standard F plates.

**Composition Flush**

9116	\$126.00	...	10	50	15	
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**Porcelain, Flush Conduit Box**

9117	\$59.00	...	10	50	12	
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**Porcelain Concealed Base**

No. 9119 has supporting screw spacing of  $1\frac{3}{4}$  inches; diameter,  $2\frac{1}{2}$  in.

9119	\$87.00	...	10	50	20	
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**Composition Flush, with Grounding Terminal Connected to Yoke**

9120	\$126.00	...	10	50	15	
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**3-Wire Composition Flush**

Mounted on 4-inch cadmium plated box cover.

For grounding terminal connected to the yoke, add suffix G to catalog number.

9121	\$141.00	...	5	50	35	
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**20 Amperes, 250 Volts**  
**Cord Grip Cap**

Steel covered, cadmium plated.

No. 9322G has grounded cover.

9322	\$111.00	$\frac{3}{8}$ - $\frac{5}{8}$	10	20	4	
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**Composition Cord Connector**

With steel covered cap, cadmium-plated.

9323	\$171.00	$\frac{3}{8}$ - $\frac{5}{8}$	10	20	8	
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**Porcelain Receptacles****Flush**Base,  $2\frac{1}{16} \times 1\frac{1}{16}$  inches.Depth,  $1\frac{1}{32}$  inches.Screw spacing,  $3\frac{3}{32}$  inches.

Takes standard F plate.

No. 9326G has grounded yoke.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Std. Wt. Lb.	Std. Pkg.
9326	\$139.00	10	30	12	
9326G	139.00	10	30	12	

**Concealed Base**Screw spacing,  $1\frac{3}{4}$  in.Base,  $2\frac{1}{2}$ -inch diameter.

9325	\$112.00	10	30	14	
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**For 4-Inch Outlet Box**

With cadmium-plated cover.

9324	\$154.00	5	30	22	
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No. 9115



Nos. 9113 and 9323



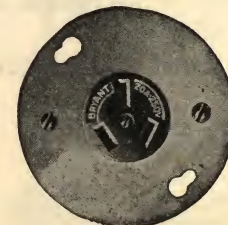
No. 9116



No. 9117



Nos. 9119 and 9325



No. 9324



## Bryant 3-Wire Polarized Attachment Plug Caps

Listed by Underwriters' Laboratories

### No. 3833 Bakelite Caps With Solderless Terminals 50 Amperes, 250 Volts

A modern design that accommodates armored or rubber cable. Has clamp terminals for straight-in wiring and grounding prongs.



No.	Per 100	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
No. 3833	3833	\$250.00	2	10 12

### Composition Caps

30 Amperes, 250 Volts  
With Screw Terminals

#### No. 785 With Cord Grip and Grounding Prongs

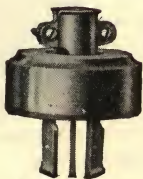
Cord grip,  $\frac{5}{8}$  to  $\frac{3}{4}$  (.625 to .750) inch.  
785 \$166.00 2 10 10

#### No. 4786 Without Cord Grip or Grounding Prongs

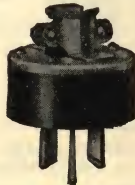
Cord hole,  $\frac{3}{4}$  (.750) inch.  
4786 \$100.00 2 10 8



No. 785



No. 7113



No. 7513

### Cord Grip Type Steel Covered Caps

With Screw Terminals  
30 Amperes, 250 Volts

Cord grip,  $\frac{5}{8}$  to 1 (.625 to 1.000) inch.

No.	Per 100	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
7113	\$167.00	2	5	5

### No. 7513 With Solder Lugs 50 Amperes, 250 Volts

Cord grip,  $\frac{1}{8}$  to  $1\frac{1}{32}$  (.875 to 1.218) inches. Add G if grounded.

7513	\$200.00	2	5	5
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## Bryant Hemco Appliance Switch Plugs and Cord Switches



No. H280

Listed by Underwriters' Laboratories, Inc.

Packed 10 in a carton.



No. H271

No.	Per 100	Description	Std. Pkg.	Wt. Lb. Std. Pkg.
H280	\$60.00	Bakelite Switch Plug.....	50	11
H271	60.00	Bakelite Cord Switch, Single-Pole, 6 Amp. 125V., 3 Amp. 250V.....	50	5



No. H738

### Bryant Hemco Switchless Plugs

Packed 10 in a carton.



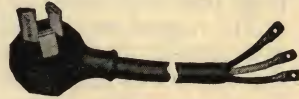
No. H966

No.	Per 100	Description	Std. Pkg.	Wt. Lb. Std. Pkg.
H738	\$22.00	Bakelite Switchless Plug.....	100	16
H966	20.00	Bakelite Switchless Table Appliance Plug.....	100	11

## Bryant 3-Wire Polarized Connectors and Fittings

Listed by Underwriters' Laboratories, Inc.

### Rubber Cable Cord Sets—Molded Rubber Caps



No. 3829

Length, 38 inches. Furnished without grounding prongs.

35 Amperes, 250 Volts

No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
3829	\$400.00	Two No. 8, One No. 10 Wires	2	10	19
		50 Amperes, 250 Volts			
3830	480.00	Two No. 6, One No. 8 Wires	2	10	23

### Rubber Cable Cord Sets—Non-Separable Bakelite Caps



No. 3898

35 Amperes, 250 Volts

3898	\$290.00	Two No. 8, One No. 10 Wires	2	10	20
		50 Amperes, 250 Volts			
3899	316.00	Two No. 6, One No. 8 Wires	2	10	25

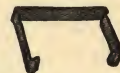
### No. 3826 Bakelite Receptacles

50 Amperes, 250 Volts, Solderless Terminals



No.	Per 100	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
3826	\$165.00	2	10	11

### No. 3827 Grounding Straps



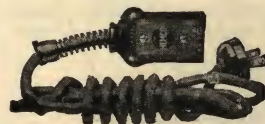
For use with No. 3826 receptacle.

No.	Per 100	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
3827	\$47.00	2	10	$\frac{1}{2}$

## Bryant Hemco Cord Sets

Listed by Underwriters' Laboratories, Inc.

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



Packed 10 in a carton, 50 in a standard package.

No.	Per 100	Description	Std. Pkg.	Wt., Lb. Std. Pkg.
HR0618	\$72.00	6-Foot No. 18 Rayon Cord.....	16	
HR0918	82.00	9-Foot No. 18 Rayon Cord.....	18	
HR1218	92.00	12-Foot No. 18 Rayon Cord.....	20	



### Hubbellock Devices For High-Cycle Portable Equipment

These rugged devices break the circuit and seal it in a split second; the safest and most practical means of applying electrical current to industrial use.

The rugged contacts of the cap are machined from heavy brass stock and molded into special, impact-resisting bakelite supporting posts which absolutely prevents shifting out of alignment or bending or twisting, no matter how rough the usage. Positive polarity and ground connection is thus assured at all times under all conditions. The lock is positive with nothing to jam out-of-order and therefore allows no accidental breaking of current with consequent loss of production.

#### 3-Wire Connectors

With Adjustable Cord Grip  
10 Amperes, 250 Volts D.C.; 460 Volts A.C.  
20 Amperes, 125 Volts A.C. or D.C.



No. 23002



No. 23005

Cadmium is standard finish.

If desired with ground shunt from contact to cover or casing, suffix letter G to number.

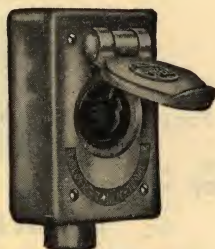
No.	Per 100	Description	Cable Diameter Inches	Pkg. Car-Std. Wt. ton Pkg. Lb.
23002	\$385.00	Connector Body....	.296 to .562	5 20 9
23005	248.00	Cap.....	.296 to .562	5 20 8
23003	385.00	Connector Body....	.406 to .625	5 20 9
23006	248.00	Cap.....	.406 to .625	5 20 8
23009	402.00	Connector Body with 1/2" Female Pipe Thread.....		5 20 9
23016	261.00	Cap, 1/2" Female Pipe Thread.....		5 20 8

#### 3-Wire Receptacles and Plates

10 Amperes, 250 Volts D.C.; 460 Volts A.C.  
20 Amperes, 125 Volts A.C. or D.C.



No. 23000

Nos. 23000 and 23007  
Assembled to Outlet Box

Receptacle and plate will fit FS and FD outlet boxes. Fits any single convenience outlet plate. Receptacle will also fit standard switch and outlet boxes.

Outlet box not supplied.

Cadmium is standard finish.

If desired grounded, suffix letter G to number.

No.	Per 100	Description	Cable Diameter Inches	Pkg. Car-Std. Wt. ton Pkg. Lb.
23000	\$303.00	Bakelite Receptacle.....		5 20 8
23007	83.00	Cast Iron Plate with Lift Cover		5 20 13
23008	72.00	Cast Iron Plate without Lift Cover.....		5 20 10

#### 4-Wire Receptacles and Plates

20 Amperes, 250 Volts D.C.; 30 Amperes, 600 Volts A.C.  
3 Hp. 250 Volts D.C.; 5 Hp. 230 Volts A.C. 1-Phase  
10 Hp. 230 Volts A.C. 2-Phase; 15 Hp. 460 Volts A.C. 3-Phase

No. 20403 Receptacle with  
No. 20416 Plate

No. 20403

Receptacle and plates will fit FS and FD outlet boxes.

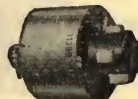
Cadmium is standard finish.

Furnished grounded unless otherwise specified.

No.	Per 100	Description	Pkg. Car-Std. Wt. ton Pkg. Lb.
20403	\$468.00	Bakelite Receptacle.....	2 10 5
20416	83.00	Iron Plate, with Cover.....	2 10 9
20417	72.00	Iron Plate, without Cover.....	2 10 4

#### 4-Wire Connectors and Caps

With Metal Adjustable Cord Grip  
20 Amperes, 250 Volts D.C.; 30 Amperes, 600 Volts A.C.  
3 Hp. 250 Volts D.C.; 5 Hp. 230 Volts A.C. 1-Phase  
10 Hp. 230 Volts A.C. 2-Phase; 15 Hp. 460 Volts A.C. 3-Phase



No. 20415



No. 20414

No.	Per 100	Description	Cable Diameter Inches	Pkg. Car-Std. Wt. ton Pkg. Lb.
20414	\$534.00	Connector Body..	.400 to .750	2 10 10
20415	358.00	Cap.....	.400 to .750	2 10 7

#### With Rubber Cord Grip



No. 21415



No. 21414

No.	Per 100	Description	Cable Diameter Inches	Pkg. Car-Std. Wt. ton Pkg. Lb.
21414	\$534.00	Connector Body...	.360 to .484	2 10 10
21415	358.00	Cap.....	.360 to .484	2 10 7



## Hubbell 10-Ampere Twist-Lock Devices

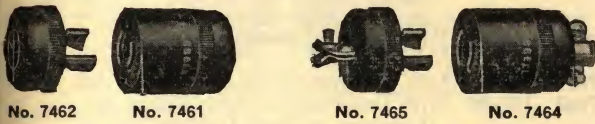
10 Amperes, 250 Volts; 15 Amperes, 125 Volts

National Electric Code rules advise installation of polarized and grounded devices to protect the users of portable motor driven tools and equipment.

Positive protection against both electrical hazard and disconnection delays is provided by Twist-Lock Polarized Devices. Twist-Lock Devices never part in the middle of a job, no matter how hard the cord is yanked. A lock-fast connection is made by a twist of the cap.

All 3 and 4-wire Twist-Lock Devices are polarized by blades designed to engage correspondingly shaped slots in receptacles or connector bodies. Grounding blade is longer than others so as to make contact first and break last.

### 2-Wire Midget Cord Connectors



Without Cord Grip—.375-Inch Cord Hole

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7462	\$22.00	Cap Only.....	10	50	1 1/4
7477	22.00	Cap Only, Polarized.....	10	50	1 1/4
*7461	44.00	Connector Body only.....	10	50	2 1/2

With Cord Grip—Clamp Spread .218-Inch to .312-Inch

Standard finish for cord grips is statuary bronze.

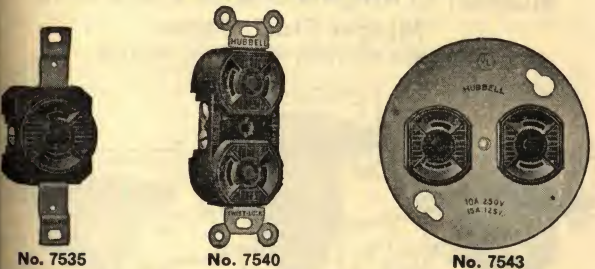
7465	\$29.00	Cap Only.....	10	50	1 1/2
7479	29.00	Cap Only, Polarized.....	10	50	1 1/2
*7464	51.00	Connector Body Only.....	10	5	3

### 2-Wire Midget Flush Motor Bases



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7466	\$50.00	Male Base.....	10	50	3
7467	50.00	Male Base, Polarized.....	10	50	3
*7468	55.00	Female Base.....	10	50	3
*7473	72.00	No. 7468 Receptacle on 3 1/4-Inch Steel Box Cover.....	10	50	6
*7471	61.00	Female Base, Covered Terminals without Cord Grips.....	10	50	3 1/2
*7472	72.00	Female Base, Covered Terminals with Cord Grips.....	10	50	4

### 2-Wire Receptacles



Standard finish of cover is cadmium.

#### Single

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
*7535	\$55.00	Bakelite Receptacle.....	10	50	8
*7536	66.00	Bake. Receptacle with 3 1/4" Cover.....	10	30	10
*7537	\$72.00	Bake Receptacle with 4" Cover.....	5	30	12
Duplex					
*7540	\$110.00	Bakelite Receptacle.....	10	50	14
*7543	121.00	Bake. Receptacle with 3 1/4" Cover.....	10	50	25
*7544	127.00	Bake. Receptacle with 4" Cover.....	5	30	15

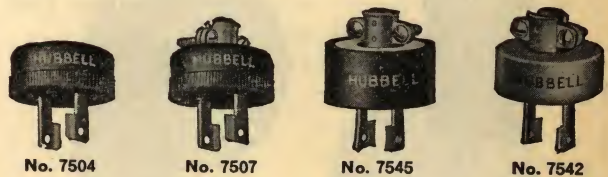
\*Will accommodate both polarized and non-polarized caps.

### 2-Wire Bakelite Connector Bodies



No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Wt. Pkg. Lb.
7503	\$55.00	Connector Body....	.375	10	50 7
7506	66.00	Cord Grip Body....	.296 to .562	10	50 7

### 2-Wire Plug Caps



No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Wt. Pkg. Lb.
7504	\$39.00	Bakelite.....	.375	10	50 6
7507	44.00	Bakelite, Cord Grip.....	.296 to .562	10	50 6
†7505	39.00	Bakelite.....	.375	10	50 6
†7508	44.00	Bakelite, Cord Grip.....	.296 to .562	10	50 6
7545	44.00	Rubber.....	.296 to .562	10	50 6
7546	44.00	Rubber.....	.406 to .625	10	50 6
†7547	44.00	Rubber.....	.296 to .562	10	50 6
†7548	44.00	Rubber.....	.406 to .625	10	50 6
7542	50.00	Armored.....	.296 to .562	10	50 7
7549	50.00	Armored.....	.406 to .625	10	50 7
†7588	50.00	Armored.....	.296 to .562	10	50 7
†7589	50.00	Armored.....	.406 to .625	10	50 7

### 3-Wire Polarized Caps



No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Wt. Pkg. Lb.
7567	\$77.00	Rubber.....	.296 to .562	10	50 6
7568	77.00	Rubber.....	.406 to .625	10	50 6
7554	77.00	Bakelite.....	.296 to .562	10	50 6
7558	77.00	Bakelite.....	.406 to .625	10	50 6
7572	83.00	Metal Covered Comp.....	.296 to .562	10	50 6
7573	83.00	Metal Covered Comp.....	.406 to .625	10	50 6

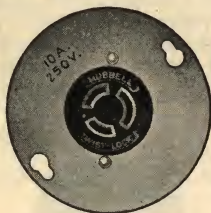
†Polarized—one wide and one narrow blade.



## Hubbell 10-Ampere Twist-Lock Devices

10 Amperes, 250 Volts; 15 Amperes, 125 Volts  
Continued

No. 7582

3-Wire Receptacles  
Single

Nos. 7583 and 7584

No. 7582 receptacle fits any standard single flush receptacle plate.

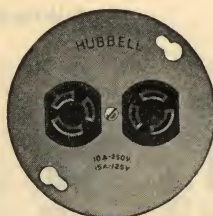
If desired grounded, suffix letter G to number.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7582	\$143.00	Bakelite Single Receptacle....	10	50	9
7583	\$154.00	Bakelite Single Receptacle with 3 1/4-Inch Cover.....	10	30	11
7584	\$165.00	Bakelite Single Receptacle with 4-Inch Cover.....	5	30	13

## Duplex



No. 7580



No. 7581

No. 7580 receptacle takes any standard duplex receptacle flush plate.

If desired grounded, suffix letter G to number.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7555	\$132.00	Bakelite Duplex Receptacle....	10	50	11
7559	\$132.00	Bakelite Duplex Receptacle with 4-Inch Cover.....	5	30	15

## 3-Wire Bakelite Connector Bodies



No. 7555

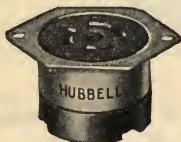
If desired grounded, suffix letter G to number.

No.	Per 100	Description	Diam. Inches	Car-ton	Std. Pkg.	Wt. Lb.
7580	\$209.00	Body.....	.296 to .562	10	50	8
7581	\$231.00	Body.....	.406 to .625	10	50	8

## 3-Wire Polarized Motor Plugs



No. 7556



No. 7557

Supporting screw holes are 1 1/16 inches on centers. Diameter of base, 1 1/2 inches. Height of No. 7556, 1 1/8 inches; No. 7557, 1 1/4 inches.

If desired grounded, suffix letter G to number.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7556	\$99.00	Bakelite, with Contact Blades...	10	50	5
7557	\$110.00	Bakelite, Female Flush Base....	10	50	7

## Hubbell 10 Ampere Combination Receptacles

## 3-Wire Twist-Lock and 2-Wire Double T Slot

Each Outlet:

10 Amperes, 250 Volts;  
15 Amperes, 125 Volts

Black bakelite.



No.	Each	Description	Car-ton	Std. Pkg.	Wt. Lb.
7680	\$182.00	Each Outlet Wired Independently.....	10	30	12
7681	204.00	Like No. 7680, on 4-Inch Cover..	5	30	21
7682	182.00	With One Feed and One Return Common to Both Outlets. 3-Wire End Permanently Grounded to Supporting Strap	10	30	12
7683	204.00	Like No. 7682, on 4-Inch Cover..	5	30	21
7684	182.00	With One Feed and One Return Common to Both Outlets. Grounding Terminal 3-Wire End Equipped with Binding Screw.....	10	30	12
7685	204.00	Like No. 7684, on 4-Inch Cover..	5	30	21

## Hubbell Adapters

## For 10 Ampere 3-Wire Twist-Lock Receptacles

Black bakelite body.

Fits all 10 ampere female 3-wire Twist-Lock flush receptacles and cord connector bodies. Equipped with medium base threaded screw shell on one end. Wire outlet is on the side.

Nos. 7645 and 7646 accommodate either an attachment plug base for 2-wire parallel bladed caps, or a medium base lamp. No. 7647 with screw shell end to accommodate a screw base fuse plug or Fusetron.

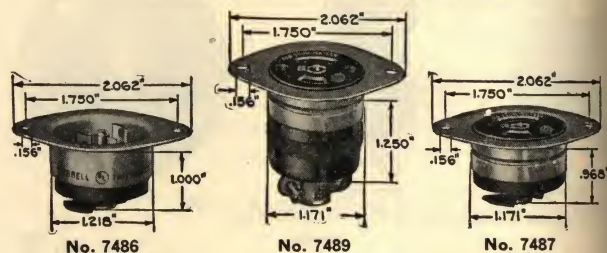


No. 7645

No.	Each	Description	Car-ton	Std. Pkg.	Wt. Lb.
7645	\$94.00	660 W. 250 V., Multiple.....	10	50	7
7646	94.00	660 W. 250 V., Series.....	10	50	7
7647	94.00	0-15 Amp. 125 V., Series, with Fuse Plug Cut-Out.....	10	50	7

## Hubbell 10 Ampere 3-Wire Twist-Lock Midget Flush Bases

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7486

No. 7487

No. 7488

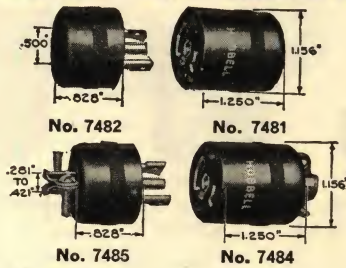
Black bakelite body. Standard finish for brass casing is polished nickel, gun metal or statuary bronze. Polished nickel furnished unless otherwise specified.

No.	Each	Description	Car-ton	Std. Pkg.	Wt. Lb.
7486	\$77.00	Male Base.....	10	50	3
7487	99.00	Female Base.....	10	50	3
7488	110.00	Female Base, Covered Terminals, without Cord Grips....	10	50	3 1/2
7489	121.00	Female Base, Covered Terminals, with Cord Grips.....	10	50	4



## Hubbell 10 Ampere 3-Wire Twist-Lock Midget Connectors Polarized

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Black bakelite body.  
Standard finish for cord grips is black oxidized finish.

### Without Cord-Grip—.500 Inch Cord Hole

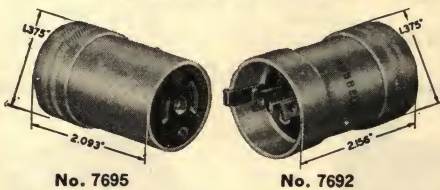
No.	Each	Description	Car- ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
7481	\$87.00	Connector Body Only	10	50	2 1/2	
7482	54.00	Cap Only	10	50	1 1/4	

### With Cord-Grip—Clamp Spread .281 to .421-Inch

No.	Each	Description	Car- ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
7484	\$94.00	Connector Body Only	10	50	3	
7485	61.00	Cap Only	10	50	1 1/2	

## Hubbell 10 Ampere 3-Wire Twist-Lock Armored Midget Connectors With Rubber Cord Grips

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Black bakelite body. Heavy steel casing finished to resist corrosion.

### 3-Wire—Not Grounded

No.	Per 100	Description	Cord Diam. Inches	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
7690	\$143.00	Armored Male Cap	.360-.484	10	50	12
7693	165.00	Armored Connector Body	.360-.484	10	50	12

### 3-Wire—Grounded to Casing

7691	\$143.00	Armored Male Cap	.360-.484	10	50	12
7694	165.00	Armored Connector Body	.360-.484	10	50	12

### 4-Wire—With Equipment Ground

7692	\$165.00	Armored Male Cap	.360-.484	10	50	12
7695	187.00	Armored Connector Body	.360-.484	10	50	12

## Hubbell 20-Ampere Twist-Lock Devices 2-Wire Plug Caps 20 Amperes, 250 Volts



### Rubber Cord Grip Caps

No.	Per 100	Description	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
9763	\$55.00	.296" to .562" Cord Hole	10	30	5
*9764	55.00	.296" to .562" Cord Hole	10	30	5
9765	55.00	.406" to .625" Cord Hole	10	30	5
*9766	55.00	.406" to .625" Cord Hole	10	30	5

### Metal Covered Cord Grip Caps

7102	\$55.00	.296" to .562" Cord Hole	10	30	5
*9102	55.00	.296" to .562" Cord Hole	10	30	5
7238	55.00	.406" to .625" Cord Hole	10	30	5
*9103	55.00	.406" to .625" Cord Hole	10	30	5

### Composition Caps

7062	\$44.00	.406" Cord Hole	10	50	7
*7063	44.00	.406" Cord Hole	10	50	7

### 2-Wire Flush Receptacles 20 Amperes, 250 Volts



No. 7210 receptacle may be used with either polarized or non-polarized Twist-Lock Caps, and fits any standard single convenience outlet plate.

Standard finish of cover is cadmium.

7210	\$66.00	Single Receptacle, Porcelain	10	50	12
7216	77.00	Single Receptacle, Porcelain, with 3/4-Inch Cover	10	50	25
7217	83.00	Single Receptacle, Porcelain, with 4-Inch Cover	5	30	17

### 2-Wire Porcelain Receptacles 20 Amperes, 250 Volts

Appleton Type W Unilet with their No. 5681 Cover accommodates this receptacle. Mounting screws 3/32 inches. Diameter 1 3/4 inches. Height, 1 7/8 inches. Face diameter, 1 1/2 inches.

7624	\$66.00	Receptacle	10	50	14
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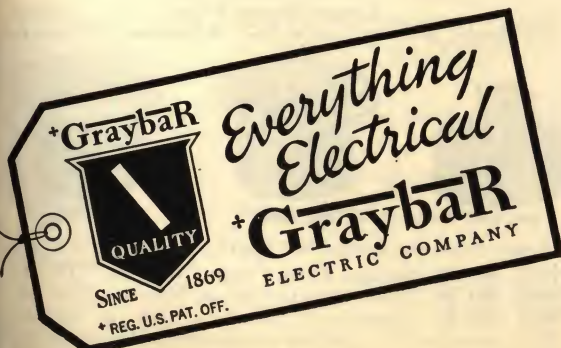
### 2-Wire Motor Plugs 20 Amperes, 250 Volts



Bodies may be used with polarized or non-polarized bases. Nos. 9104 and 9105 have nickel plated metal container.

7191	\$44.00	Surface Base, Comp., Male	10	30	4
*9104	44.00	Surface Base, Comp., Male	10	30	4
8808	66.00	Flush Base, Male	10	30	6
*9105	66.00	Flush Base, Male	10	30	4
8809	99.00	Flush Base, Female	10	30	8

\*Polarized—one wide and one narrow blade.





## Hubbell 20-Ampere Twist-Lock Devices

Continued

2-Wire Cord Grip Connector Bodies and Plugs  
20 Amperes, 250 Volts

No. 7101



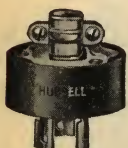
No. 7612

Made of bakelite. Steel covered, cadmium plated. Bodies may be used with either polarized or non-polarized caps.

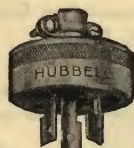
No.	Per 100	Description	Cord Diam. Inches	Car-ton	Std. Pkg.	Wt. Lb.
7101	\$88.00	Body.....	.296 to .562	10	30	9
7224	\$8.00	Body.....	.406 to .625	10	30	9
7612	66.00	Screw Base Plug, 660 W., 250 V.....		10	100	18

## 3-Wire Polarized Caps and Connectors

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts, A.C.



No. 9965



No. 7311



No. 7313

No.	Per 100	Description	Cord Diam. Inches	Car-ton	Std. Pkg.	Wt. Lb.
*9965	\$121.00	Rubber.....	.437 to .750	10	30	8
*7311	121.00	Composition, Armored.....	.437 to .750	10	30	8
*7313	187.00	Bakelite Body..	.437 to .750	10	30	11

## 3-Wire Flush Receptacles

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts A.C.



No. 7310



No. 7517

No. 7310 takes standard single outlet plate.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
*7310	\$165.00	Porcelain Receptacle.....	10	30	11
*7517	187.00	Porcelain Receptacle with 4-Inch Box Cover Attached...	5	20	13
†7502	88.00	Two Outlet Brass Plate, .060 In.	5	10	5

†No. 7502 requires 3-gang outlet box.

## 3-Wire Conduit Box Receptacles

20 Amperes, 250 Volts



Designed for permanent grounding from one contact to conduit system.

Mounting screws  $\frac{5}{8}$ -inch centers. Suitable for use with Crouse-Hinds "W" condulets and "O" cover, Appleton Electric Co. "W" unilets with No. 5680 cover, and Adalet Mfg. Co. fittings Nos. G2H, G3H and G4H.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7329	\$143.00	Porcelain Receptacle.....	10	30	10

\*If 3 or 4-wire Twist-Lock devices are desired with ground shunt from one contact to cover or casing, suffix letter "G" to catalog number.

## Hubbell 20-Ampere Twist-Lock Devices

## 3-Wire Motor Plugs

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts, A.C.



No. 7318



No. 7327



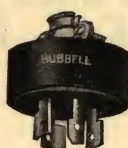
No. 7328

Screw holes in Nos. 7327 and 7328 are spaced 120° apart on  $\frac{1}{4}$ -inch radius for No. 8 screws.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
*7318	\$55.00	Surface Base, Comp., Male....	10	30	6
*7327	99.00	Flush Base in Casing, Male....	10	30	13
*7328	209.00	Flush Base, Female.....	10	30	10

## 4-Wire Polarized Caps and Connectors

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts A.C.



No. 9967



No. 7411



No. 7413

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
*9967	\$165.00	Rubber.....	.437 to .750	10	20	9
*7411	165.00	Composition, Armored.....	.437 to .750	10	20	8
*7413	231.00	Bakelite Body..	.437 to .750	10	20	11

## 4-Wire Flush Receptacles

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts A.C.



No. 7410



No. 7417

No. 7422 requires a 3-gang outlet box.

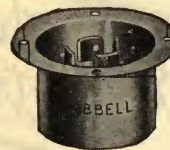
No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
*7410	\$209.00	Porcelain Receptacle.....	10	20	9
*7417	220.00	Porcelain Receptacle with 4-Inch Box Cover Attached....	5	15	10
7421	29.00	Single Brass Plate .060".....	10	20	6
7422	88.00	Two Outlet Brass Plate .060"..	5	10	5

## 4-Wire Motor Plugs

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts A.C.



No. 7415



No. 7408



No. 7409

Screw holes are spaced 90° apart.

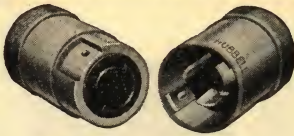
*7415	\$77.00	Surface Base, Comp., Male....	10	20	7
*7408	121.00	Flush Base in Casing, Male....	10	20	10
*7409	253.00	Flush Base, Female.....	10	20	9

\*If 3 or 4-wire T.L. devices are desired with ground shunt from one contact to cover or casing, add suffix letter G to catalog number.



**Hubbell Twist-Lock 3-Wire Connectors****Solderless Connections—Rubber Cable Grips**

50 Amperes, 250 Volts D.C.; 50 Amperes, 600 Volts A.C.



No. 7336

No. 7339

**Not Grounded**

Qty. No.	Per 100	Description	Cable Diameter	Car-ton	Std. Pkg.	Wt. Lb.	Std. Pkg.
7336	\$550.00	Female Body	.437 to .562	2	5	7	
7343	\$550.00	Female Body	.562 to .687	2	5	7	
7390	\$550.00	Female Body	.687 to .812	2	5	7	
7384	\$550.00	Female Body	.812 to .937	2	5	7	
7396	\$550.00	Female Body	.937 to 1.062	2	5	7	

**\*Grounded to Casing**

7337	\$550.00	Female Body	.437 to .562	2	5	7	
7344	\$550.00	Female Body	.562 to .687	2	5	7	
7391	\$550.00	Female Body	.687 to .812	2	5	7	
7385	\$550.00	Female Body	.812 to .937	2	5	7	
7397	\$550.00	Female Body	.937 to 1.062	2	5	7	

**†With Equipment Ground**

7338	\$578.00	Female Body	.437 to .562	2	5	7	
7345	\$578.00	Female Body	.562 to .687	2	5	7	
7392	\$578.00	Female Body	.687 to .812	2	5	7	
7358	\$578.00	Female Body	.812 to .937	2	5	7	
7386	\$578.00	Female Body	.937 to 1.062	2	5	7	

**Not Grounded**

7339	\$440.00	Male Cap....	.437 to .562	2	5	5	
7346	\$440.00	Male Cap....	.562 to .687	2	5	5	
7393	\$440.00	Male Cap....	.687 to .812	2	5	5	
7387	\$440.00	Male Cap....	.812 to .937	2	5	5	
7398	\$440.00	Male Cap....	.937 to 1.062	2	5	5	

**\*Grounded to Casing**

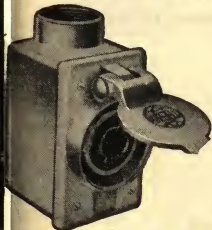
7340	\$440.00	Male Cap....	.437 to .562	2	5	5	
7347	\$440.00	Male Cap....	.562 to .687	2	5	5	
7394	\$440.00	Male Cap....	.687 to .812	2	5	5	
7388	\$440.00	Male Cap....	.812 to .937	2	5	5	
7399	\$440.00	Male Cap....	.937 to 1.062	2	5	5	

**†With Equipment Ground**

7342	\$468.00	Male Cap....	.437 to .562	2	5	5	
7348	\$468.00	Male Cap....	.562 to .687	2	5	5	
7395	\$468.00	Male Cap....	.687 to .812	2	5	5	
7359	\$468.00	Male Cap....	.812 to .937	2	5	5	
7389	\$468.00	Male Cap....	.937 to 1.062	2	5	5	

\*Grounded to Casing means that the long blade of the cap and the corresponding contact of the connector body are electrically connected to the outer casing. The corresponding contact of the receptacle is electrically connected to the conduit system. If metallic covering of cable is used for the grounding circuit, connection to the casing is made by means of grounding clips regularly installed in all caps and connector bodies.

†Equipment Ground means that the outer casing of the cap, the connector body casing and the receptacle casing serve as the grounding circuit. The grounding connector is electrically connected to the casing of the cap and connector body by means of a fourth terminal when using non-metallic covered cable. If metallic covering of cable is used for the grounding circuit, connection to the casing is made by means of grounding clips regularly installed in all caps and connector bodies. The receptacle casing is electrically connected to the conduit system.

**Hubbell Twist-Lock 3-Wire Polarized Flush Receptacles and Plates****With Solderless Connections**50 Amperes, 250 Volts D.C.;  
50 Amperes, 600 Volts A.C.

Receptacle and plate will fit FS and FD boxes.

Outlet box is not supplied.

Standard finish, cadmium.

**Nos. 7380 and 7382 Assembled to Outlet Box**

Qty. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.	Std. Pkg.
7380	\$440.00	Flush Receptacle	2	5	3	
7381	\$440.00	Flush Receptacle, grounded	2	5	3	
7382	\$83.00	Cast Iron Plate, with lift cover	2	5	5½	
7383	\$72.00	Cast Iron Plate, without lift cover	2	5	3	

**Hubbell Seal-Tite Rubber Covers**

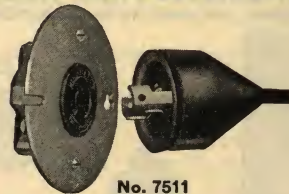
Provide protection against breakage and moisture. Recommended for lock-fast connectors in packing plants, fire departments, breweries, distilleries, mines, bottling plants, dairies, tunnels and for general industrial requirements.

**For Twist-Lock Connectors**

No. 7510

Number covers one-half only, and does not include connector, cap or wire. Two covers are required for each complete connector.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7510	\$33.00	For Nos. 7101 or 7102, 20A, 2-Wire	10	30	5
7521	\$33.00	Long Cover for No. 7101 when used with No. 7511, below	10	30	5
7530	\$55.00	For Nos. 7311 or 7313, 20A, 3-Wire	10	30	6½
7522	\$55.00	Long Cover for No. 7313, when used with No. 7531, below	10	30	5
7569	\$33.00	For Nos. 7554 or 7555, 10A, 3-Wire	10	30	5
7435	\$77.00	For Nos. 7411 or 7413, 20A, 4-Wire	10	20	4
7509	\$77.00	Long Cover for No. 7413 when used with No. 7541, below	10	20	4

**For Twist-Lock Caps Used with Flush Receptacles**

No. 7511

The No. 7511 rubber cover is slightly shorter than those listed above for cord connectors, and is designed for use with Twist-Lock Flush Receptacles with steel box covers attached or with standard brass flush plates.

7511	\$33.00	For No. 7102, 2-Wire Cap	10	30	4
7531	\$55.00	For No. 7311, 3-Wire Cap	10	30	5½
7541	\$77.00	For No. 7411, 4-Wire Cap	10	20	4

**For Midget Twist-Lock Connectors****No. 7470 Assembled to No. 7463 Connector**

Number covers one half only and does not include connector, cap or wire. Two are required for a complete cord connector.

7470	\$33.00	For Midget Connectors	10	30	3
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**Hubbell Seal-Tite Rubber Closure Plugs For Twist-Lock Receptacles**

This closure plug is made of high quality rubber and is designed to Seal-Tite Twist-Lock Flush Receptacles when not in use. Furnished complete with polished nickel chain.

7532	\$44.00	For 2-Wire 20 Amp. Receptacles	10	20	3
7529	\$44.00	For 3-Wire 10 Amp. Receptacles	10	20	3
7533	\$44.00	For 3-Wire 20 Amp. Receptacles	10	20	3
7534	\$50.00	For 4-Wire 20 Amp. Receptacles	10	20	3



## Hubbell Twist-Tite Convenience Outlets

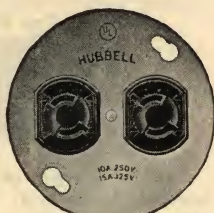
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 9200



No. 9210



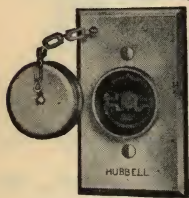
No. 9206

This convenience outlet takes standard parallel bladed caps. A regular cap is plugged in, twisted slightly to the right, and the Twist-Tite feature grips the cap tightly and holds it, preventing it from falling out.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9200	\$46.00	Brown Bakelite, Duplex.....	10	100	25
9205	51.00	With 3¼ Inch Box Cover, Duplex.....	10	50	20
9206	53.00	With 4 Inch Box Cover, Duplex..	5	50	25
9210	36.00	Brown Bakelite, Single.....	10	100	20
9211	46.00	With 3¼-Inch Box Cover, Single	10	100	40
9212	45.00	With 4-Inch Box Cover, Single..	5	50	23

## Hubbell Outdoor Flush Receptacles

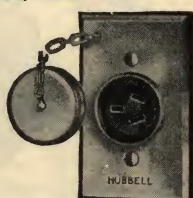
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7792



No. 7793



No. 7794

When not in use, the metal cap threads over the receptacle opening. When connected, the regular plug cap may be protected from the weather by the use of metal cover No. 7793. A rubber mat fitting under the plate completes the weatherproofing.

Exposed metal parts are cadmium plated brass to resist rust and corrosion.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7792	\$190.00	2-Wire, less No. 7793 Cover.....	2	10	7
7791	286.00	2-Wire, Duplex, With Plate, less No. 7793 Cover.....	2	10	7
7790	223.00	2-Wire, Single, for FS Type Fittings, less No. 7793 Cover....	2	10	7
*7794	268.00	3-Wire, less No. 7793 Cover.....	2	10	7
7793	48.00	Metal Cap for Covering Regular Cap.....	2	10	1

\*No. 6149 3-Wire cap should be used with No. 7794.

## Hubbell Four Outlet Cluster Receptacle

10 Amperes, 250 Volts;

15 Amperes, 125 Volts



Twist-Tite feature holds caps from falling out.

Takes standard parallel bladed caps.

Furnished without cord.

Carton, 1.

Standard package, 10.

Weight per standard package, 5½ pounds.

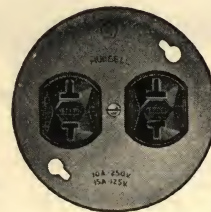
No. 9225 ..... per 100 \$220.00

## Hubbell Convenience Outlets

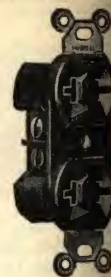
Standard Grade



No. 9595



Nos. 7260 and 7137



No. 9573

## Duplex Side Wired—Double Binding Screws

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9595	\$39.00	Bakelite, Wide Ears.....	10	100	26
9595-I	46.00	Ivoryine, Wide Ears.....	10	50	13
9575	39.00	Bakelite, Narrow Ears.....	10	100	25
7260	47.00	With 3¼ Inch Cover.....	10	50	21
7137	52.00	With 4 Inch Cover.....	5	50	26

## Duplex Side Wired—With Separate Feeds

Each Outlet; 10 Amperes, 250 Volts; 15 Amperes, 125 Volts

One outlet can be wired to a switch for independent control of lamps, and the other outlet kept permanently alive at all times.

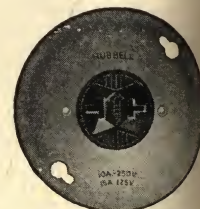
No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9571	\$50.00	Bakelite, 2 Feeds, 1 Return....	10	100	24
9573	50.00	Bakelite, 2 Feeds, 2 Returns....	10	100	24



No. 7626



No. 7590



Nos. 7135 and 7136

## Duplex—Top Wired—Single and Double Binding Screws

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7626	\$58.00	Bakelite, Wide Ears.....	10	100	24
6257	60.00	Black Porcelain.....	10	100	32
5890	58.00	Brown Composition.....	10	100	32

## Single, Side Wired

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

7590	\$32.00	Bakelite, Wide Ears.....	10	100	20
7550	32.00	Bakelite, Narrow Ears.....	10	100	18
7135	38.00	With 3¼-Inch Cover.....	10	100	40
7136	43.00	With 4-Inch Cover.....	5	50	23



## Hubbell Pilot Lamp Receptacles



No. 432



No. 427

### Composition With Candelabra Base

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
432	\$116.00	With 125-Volt Lamp.....	10	30	6
433	33.00	Lamp Only, 125 Volts.....	10	30	2
434	155.00	Lamp Only, 250 Volts.....	10	30	2

### Porcelain With Candelabra Base

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
427	\$116.00	With 125-Volt Lamp.....	10	30	13
429	33.00	Lamp for No. 427.....	10	30	3
428	223.00	With 250-Volt Lamp.....	10	30	12
430	155.00	Lamp for No. 428.....	10	30	3

## Hubbell Outlets and Pilot Lights

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Light goes on when plug is inserted. No. 433 lamp fits Nos. 7711 and 7712. Jewel can be removed from front.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7711	\$214.00	With Plate.....	2	10	7 1/2
7712	149.00	Receptacle Only.....	2	10	4
7713	65.00	.060" Brass Plate.....	2	10	4
736	39.00	Round Jewel Only.....	2	30	10



No. 7711

## Hubbell Switches and Pilot Lights

Single Pole and 3-Way; 10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Double Pole: 10 Amperes, 250 Volts



No. 7739



No. 7759

Nos. 433 and 434 lamps fit all these lights.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7739	\$330.00	S. P., .060 in. Plate.....	2	10	8
7956	330.00	D. P., .060 in. Plate.....	2	10	12
7953	330.00	3-Way, .060 in. Plate.....	2	10	12
7298	39.00	Rectangular Jewel Only.....	2	30	10

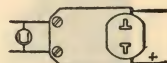
### With Ornamental Bakelite Plate

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7759	\$330.00	Single Pole.....	2	10	7
7957	330.00	Double Pole.....	2	10	12
7954	330.00	3-Way.....	2	10	12

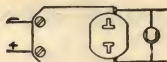
## Hubbell Convenience Outlets and Switches

Switch Rating: 10 Amperes, 250 Volts

Receptacle Rating: 10 Amperes, 250 Volts; 15 Amperes, 125 Volts

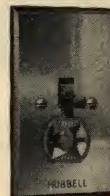


RECEPTACLE ALWAYS ON  
SWITCH CONTROLS LIGHTS ONLY



SWITCH CONTROLS  
RECEPTACLE & LIGHT

Wiring Diagram Showing  
Variation of Control



No. 8885

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
8885	\$239.00	S. P., with .060" Brass Plate.....	1	10	8
8886	191.00	S. P., without Plate.....	1	10	4
8891	239.00	S. P., with Bakelite Plate.....	1	10	8
8887	239.00	D. P., with .060" Brass Plate.....	1	10	8
8888	191.00	D. P., without Plate.....	1	10	4
8892	239.00	D. P., with Bakelite Plate.....	1	10	8

### Separate Plates

8894	\$48.00	.060" Brush Brass Plate.....	2	10	4
8895	48.00	Sand Blast Bakelite Plate.....	2	10	3

## Hubbell Fan Hanger Outlets

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7710	\$286.00	Yoke Support and .060" Plate.....	10	20	19
7714	286.00	Stud Support and .060" Plate.....	10	20	19



No. 7710

## Hubbell Clock Hanger Outlets

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

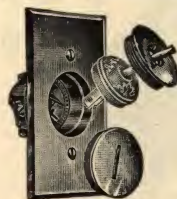
No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7707	\$168.00	2-Wire, .040" Plate..	2	10	5
7715	179.00	2-Wire, .060" Plate..	2	10	5
7708	272.00	3-Wire, .040" Plate..	2	10	6
7709	283.00	3-Wire, .060" Plate..	2	10	7



No. 7707

## Hubbell Floor Outlets

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7797

Two threaded solid brass covers are supplied—one for completely closing the outlet when not in use; the other, with cord hole.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7797	\$240.00	Bevel Edge, .060" Plate.....	2	10	8
7798	275.00	Square Edge, Solid Plate.....	2	10	8



**Hubbell Round Flush Receptacles**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7331



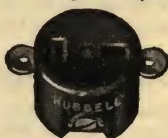
No. 7255

Tapped for 8x32 screws. Furnished with mounting bridges of various dimensions on special orders.

No.	Per 100	Description	Screw Hole Ctrs. In.	Diam. In.	Car-ton	Std. Wt. Pkg. Lb.
7331	\$38.00	Bakelite.....	1 3/4	1 7/16	10	50 8
5614	38.00	Porcelain.....	1 3/4	1 7/16	10	50 8
7255	38.00	Composition.....	1 5/8	1 3/16	10	50 7

**No. 10108 Hubbell Polarized Round Flush Receptacles**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 10108

Tapped for 6x32 screws. Furnished with mounting bridges of various dimensions on special orders.

No.	Per 100	Description	Screw Hole Ctrs. In.	Diam. In.	Car-ton	Std. Wt. Pkg. Lb.
10108	\$46.00	Black Porcelain.....	1 5/8	1 7/16	10	30 5

**Hubbell 10-Ampere Porcelain Receptacles**

With Double T Slots

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 5617



No. 5618

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
5617	\$56.00	Concealed Base, Screws, 1 1/2" Centers.....	10	50 18
5618	56.00	Cleat Base, Screws, 1 1/2" Centers.....	10	50 18



No. 5619



No. 5620

5619	\$56.00	Moulding Base, Screws, 1 1/8" Centers.....	10	50 18
5620	66 00	Fielding Base, Screws, 2 5/16" Centers.....	10	50 16



No. 5624



No. 7027

5624	\$60.00	Conduit Box Base, Screws, 5/8" Centers.....	10	50 13
7027	56.00	Outlet Box Receptacle.....	10	50 16

No. 5624 fits Appleton W Unilet and No. 5680 Cover, also fits Crouse-Hinds W Condulet.

**Hubbell Pony Size Separable Attachment Plugs**

All Bakelite—With Parallel Blades

No. 9013—  
No. 9010

Modernistic Design

660 Watts, 250 Volts

Brown is standard color, but black is available on special order at no advance in price.

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Wt. Pkg. Lb.
9013	\$10.00	Body.....		25	500 18
9010	10.00	Cap.....	.375x.281	25	500 22

**Hubbell Standard Size Separable Attachment Plugs**Composition—With Parallel Blades  
With Composition or Brass Covered Caps  
660 Watts, 250 Volts

No. 5917—No. 5964

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Wt. Pkg. Lb.
5917	\$16.00	Body.....		10	250 20
5964	13.00	Composition Cap.....	.406	10	250 19
6708	13.00	Composition Cap.....	.312	10	250 20

**Hubbell Bakelite Attachment Plugs**With Double T Slots  
660 Watts, 250 Volts

No. 5420



No. 5612

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Wt. Pkg. Lb.
5420	\$21.00	Cap, Tandem Blades..	.406	10	100 6 1/2
5612	40.00	Body, Double T Slots..		10	100 11

**No. 6293 Hubbell Weatherproof Plug Receptacles**

With Double T Slots

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Made of composition.

Carton, 10. Standard package, 30.

Weight per standard package, 9 pounds.

No. 6293.....per 100 \$100.00



## Hubbell 10-Ampere Attachment Plug Caps With Parallel Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

### Pony Size—Composition



No. 7002

No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
7002	\$10.00	.375 to .281	25	500	30
7066	10.00	.312	25	500	28
7068	10.00	.406	25	500	27

### Pony Size—Bakelite



No. 9010

No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
9010	\$10.00	.375x.281	25	500	22

### Standard Size—Composition



No. 5964

No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
5964	\$13.00	.406	10	250	19
6708	13.00	.312	10	250	20

### Standard Size—Composition—Polarized

Polarized—one wide and one narrow blade.



No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
No. 6764	6764	.406	10	250	20

### With Tandem Blades

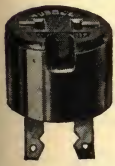
### Heavy Duty—Bakelite



No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
No. 5420	5420	.406	10	100	6½

## Hubbell T-Slot Plug Taps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 6771



No. 6772

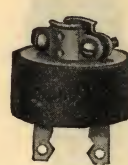


No. 7772

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
6771	\$45.00	Multiple, Tandem Blades.....	10	20	3
6772	41.00	Multiple, Parallel Blades.....	10	20	3
7772	41.00	Series, Parallel Blades.....	10	20	4

## Hubbell Rubber Cord-Grip Attachment Plug Caps

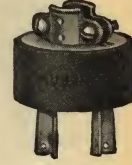
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 9752



No. 9754



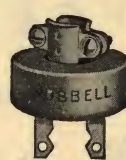
No. 9759

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
9752	\$39.00	Tandem Blades...	.296 to .562	10	50	7
9753	39.00	Tandem Blades...	.406 to .625	10	50	7
9754	39.00	Parallel Blades...	.296 to .562	10	50	7
*9755	47.00	Parallel Blades...	.296 to .562	10	50	7
9756	39.00	Parallel Blades...	.406 to .625	10	50	7
*9757	47.00	Parallel Blades...	.406 to .625	10	50	7
9759	58.00	Double T Blades...	.296 to .562	10	50	7
9760	70.00	Double T Blades, Polarized.....	.296 to .562	10	50	7
9761	58.00	Double T Blades...	.406 to .625	10	50	7
9762	70.00	Double T Blades, Polarized.....	.406 to .625	10	50	7

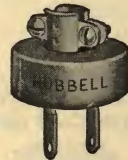
\*Polarized—one wide and one narrow blade.

## Hubbell Armored Cord-Grip Attachment Plug Caps

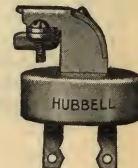
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7056



No. 7057



No. 9076

A special impact resisting composition cap, steel covered, cadmium plated.

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
7056	\$41.00	Tandem Blades...	.296 to .562	10	50	7
7057	41.00	Parallel Blades...	.296 to .562	10	50	7
*7059	50.00	Parallel Blades...	.296 to .562	10	50	7
7183	41.00	Tandem Blades...	.406 to .625	10	50	7
7184	41.00	Parallel Blades...	.406 to .625	10	50	8
*7185	50.00	Parallel Blades...	.406 to .625	10	50	8
9076	63.00	Tandem Blades, Angle.....	.500 to .625	10	50	9
9077	63.00	Parallel Blades, Angle.....	.500 to .625	10	50	9

\*Polarized—one wide and one narrow blade.

## Hubbell Attachment Plug Caps

### With Double T Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7162



No. 7196

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
7162	\$61.00	Armored, Com-position.....	.296 to .562	10	30	5
7286	75.00	Armored, Polarized	.296 to .562	10	30	5
7196	55.00	Bakelite.....	.406	10	50	4



**Hubbell Rubber Cord Connector Bodies**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 9952



No. 9953

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
9952	\$44.00	Body.....	.312 to .468	10	50	9
9954	44.00	Body.....	.625	10	50	9
9953	53.00	With Cord Grip....	.312 to .468	10	50	11
9955	53.00	With Cord Grip....	.625	10	50	11

**Hubbell Rubber Finger Grip Attachment Plug Caps**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 9972



No. 9974



No. 9940



No. 9942

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
9972	\$21.00	Parallel Blades...	.312 to .437	25	100	8
*9973	23.00	Parallel Blades...	.312 to .437	25	100	8
9934	21.00	Parallel Blades...	.625	25	100	8
*9935	23.00	Parallel Blades...	.625	25	100	8
9974	24.00	Tandem Blades...	.312 to .437	25	100	8
9936	24.00	Tandem Blades...	.625	25	100	8

**With Cord Grip**

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
9940	\$29.00	Parallel Blades...	.312 to .437	25	100	10
*9941	31.00	Parallel Blades...	.312 to .437	25	100	10
9937	29.00	Parallel Blades...	.625	25	100	10
*9938	31.00	Parallel Blades...	.625	25	100	10
9942	32.00	Tandem Blades...	.312 to .437	25	100	10
9939	33.00	Tandem Blades...	.625	25	100	10

\*Polarized—one wide and one narrow blade.

**Hubbell Composition Cord Connector Bodies**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 5574



No. 7084



No. 7430-7431

Bodies with cord grip have steel covers, cadmium plated.

**With Double T Slots—Composition**

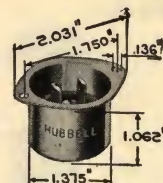
No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
5574	\$44.00	Regular.....	.406	10	50	8
7080	44.00	Regular.....	.312	10	50	8
7084	69.00	With Cord Grip....	.296 to .562	10	50	11
7187	69.00	With Cord Grip....	.406 to .625	10	50	11

**With Parallel Slots—Bakelite**

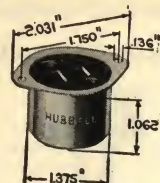
No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
7430	\$24.00	Brown Conn. Body	.312	10	50	7
7431	10.00	Brown Cap.....	.281 to .375	25	500	18

**Hubbell Small Size Flush Motor Plugs**

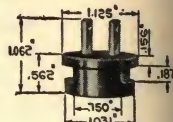
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Nos. 6808 and 9808



No. 9819



No. 6631

Screw holes spaced  $1\frac{1}{4}$  inches. Diameter shell,  $1\frac{1}{8}$  inches.

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
6808	\$48.00	Male Base in Casing..	.406	10	50	7
*9808	50.00	Male Base in Casing..	.406	10	50	7
9819	60.00	Female Base.....	.406	10	50	7
6631	22.00	Male Base.....		10	50	3

\*Polarized—one wide and one narrow blade.

**Polarized—Armored Cord Grip**

These bodies fit Flush Motor Bases Nos. 6808 or 9808, listed above. Takes caps 7357 or 9357.

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
7257	\$60.00	Body.....	.406 to .625	10	50	8
7259	60.00	Body.....	.296 to .406	10	50	8

**Hubbell Small Size Composition Cord Connectors**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Nos. 7257 and 7357

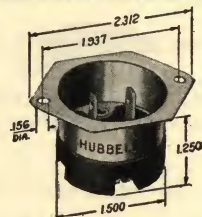
None of these small size devices interchange with standard parallel blade devices.

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
7257	\$60.00	Cord Grip Body..	.406 to .625	10	50	8
7357	40.00	Cord Grip Cap....	.406 to .625	10	50	8
*9357	41.00	Cord Grip Cap....	.406 to .625	10	50	8

\*Polarized—one wide and one narrow blade.

**No. 4891 Hubbell Male Flush Motor Plugs****Bottom Wired**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



This plug takes bodies Nos. 5574, 7080, 7084, 7187, 9952, 9953, 9954, and 9955.

Male base with parallel blades.

Carton, 10. Standard package, 50. Weight per standard package, 9 pounds.

No. 4891.....per 100 \$48.00



## Hubbell Surface Motor Plugs

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 6823



Nos. 5574 and 5896

Diameter base, 1½ inches. Screw holes 1 inch on centers.

### With Parallel Blades and Slots

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Wt. Pkg. Lb.	Pkg.
6823	\$22.00	Base.....	.406x.312	10	50	4

### With Double T Slots and Tandem Blades

5574	\$44.00	Body.....	.406	10	50	8
7080	44.00	Body.....	.312	10	50	8

## Hubbell Polarized Attachment Plug Caps

### Without Cord Grip



No. 5567

No. 6730

Nos. 5553 and 6156

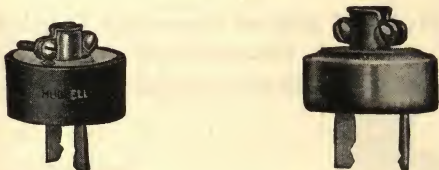
No. 6720

Standard finish on brass-covered caps is brush brass.

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Cord Diam. In.	Car-ton	Std. Wt. Pkg. Lb.	Pkg.
5567	\$79.00	Porcelain, Brass Covered...	.406	10	30	5
6730	47.00	Composition.....	.406	10	30	4
20 Amperes, 250 Volts						
5553	\$85.00	Porcelain, Brass Covered...	.500	10	30	6
6720	56.00	Composition.....	.500	10	30	5

## Hubbell 2-Wire Polarized Attachment Plug Caps



Nos. 9970 and 9758

Nos. 7092 and 7058

### Rubber Cord Grip

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Cord Diameter Inches	Car-ton	Std. Wt. Pkg. Lb.	Pkg.
9970	\$70.00	.296 to .562	10	30	5
9971	70.00	.406 to .625	10	30	5
20 Amperes, 250 Volts					
9758	84.00	.406 to .625	10	30	6

### Armored Composition Cord Grip

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

7092	\$74.00	.296 to .562	10	30	5
7241	74.00	.406 to .625	10	30	5
20 Amperes, 250 Volts					
7058	87.00	.406 to .625	10	30	8

## Hubbell Polarized Flush Receptacles



Nos. 5566 and 5552



Nos. 7270 and 7272

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.	Pkg.
5566	\$64.00	Black Porcelain.....	10	30	11
5566-B	64.00	Black Bakelite.....	10	30	7
*7270	74.00	Bakelite with ¾-Inch Cover	10	30	18
7271	82.00	Bakelite with 4-Inch Cover..	5	30	20

20 Amperes, 250 Volts

5552	\$116.00	Black Porcelain.....	10	30	11
5552-B	116.00	Black Bakelite.....	10	30	7
*7272	124.00	Bakelite with ¾-Inch Cover	10	30	18
7273	129.00	Bakelite with 4-Inch Cover..	5	30	20

\*These receptacles will readily fit ¾-inch outlet boxes when only one box connector is used. When two or more box connectors are needed the receptacles with 4-inch covers are required.

## Hubbell Polarized Wall Receptacles



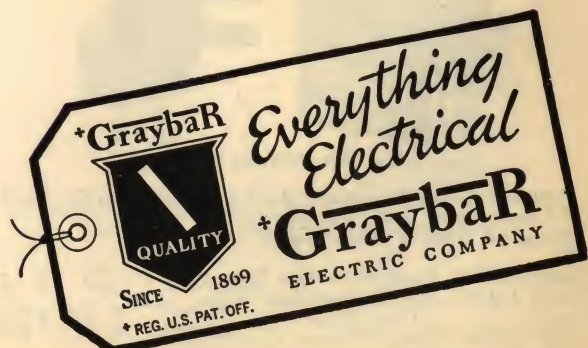
Nos. 5885 or 5621

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.	Pkg.
5885	\$75.00	Concealed Base, Screw Holes Spaced 1½ Inches.....	10	30	11

20 Amperes, 250 Volts

5621	\$93.00	Concealed Base, Screw Holes Spaced 1¾ Inches.....	10	30	14
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## Hubbell Polarized Composition Cord Connectors

### With Cord Grip



Caps are steel covered, cadmium plated.

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
7091	\$102.00	Body	.296 to .562	10	30	9
7092	74.00	Cap	.296 to .562	10	30	5
7240	102.00	Body	.406 to .625	10	30	8
7241	74.00	Cap	.406 to .625	10	30	5

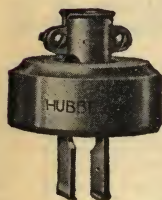
20 Amperes, 250 Volts

7086	\$116.00	Body	.406 to .625	10	30	10
7058	87.00	Cap	.406 to .625	10	30	8

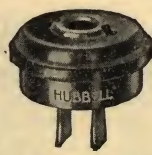
## Hubbell 30-Ampere 2-Wire Polarized Flush Receptacles and Caps

30 Amperes, 250 Volts

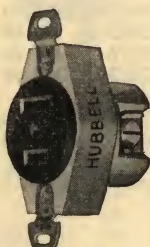
### Single Gang Size



No. 7436



No. 7437



No. 7438

The face diameter of No. 7438 is larger than standard and requires the special plate No. 7439. The outside diameter of the cap is such that it will not fit when used in a two-gang installation of No. 7438 receptacles.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7436	\$175.00	Cord Grip Cap, .625" to 1.000" Cord Hole	5	30	15
7437	82.00	Composition Cap, .656" Cord Hole	5	30	20
7438	155.00	Composition Face Porcelain Receptacle	10	30	16
7439	30.00	.040" Brush Brass Plate	10	30	6

### Two-Gang Size



Nos. 7070, 7071 and 7072

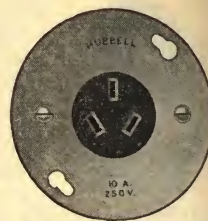
Supporting lugs have mounting holes spaced to fit standard 2-gang outlet boxes 2 inches deep or over. Standard finish is brush brass.

7070	\$350.00	Black Porcelain Receptacle	1	5	7
7071	172.00	Black Porcelain Cap, .718" Cord Hole	1	5	3
7127	210.00	Metal Covered Cord Grip Cap, Cord Hole, .625" to 1.000"	1	5	4
7072	140.00	.060" Brass Plate, 4 1/2 x 4 3/8"	1	5	2

## Hubbell 3-Wire Polarized Flush Receptacles



Nos. 6051 and 6810



Nos. 7275 and 7277

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No. 7189 has same design as No. 6051 but has ground shunt from one terminal to the back supporting strap.

No. 9051 can be supplied grounded by suffixing letter G to number.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
6051	\$126.00	Composition	10	50	18
7189	126.00	Composition, Grounded	10	50	19
9051	126.00	Porcelain	10	50	20
7607	139.00	Composition, with 3 1/4-Inch Cover	10	50	20
7275	141.00	Porcelain, with 4-Inch Cover	5	50	30
20 Amperes, 250 Volts					
6810	\$139.00	Porcelain	10	30	13
7277	154.00	Porcelain, with 4-Inch Cover	5	30	24

If desired grounded, suffix letter G to number.

## Hubbell 3-Wire Polarized Flush Receptacles

### With Close Mounting Strap

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7214

Screw holes, 1 3/4 inches on centers, tapped for 8x32 screws.

Fits in 1 1/2-inch diameter hole.

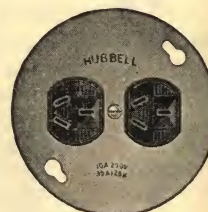
No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7214	\$96.00	Composition, Grounded, 2 Binding Screws	10	30	5
7215	96.00	Composition, Not Grounded, 3 Binding Screws	10	30	7

## Hubbell 3-Wire Polarized Duplex Receptacles

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7051



No. 7208

If desired with ground shunt, suffix letter G to number.

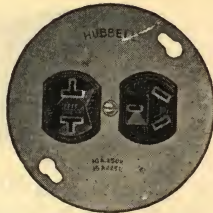
No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7051	\$184.00	Black Bakelite	10	30	12
7208	202.00	Black Bakelite with 4-Inch Cover	5	30	21



## Hubbell Combination 3-Wire and Double T-Slot Receptacles



Each Outlet Rated:  
10 Amperes, 250 Volts;  
15 Amperes, 125 Volts

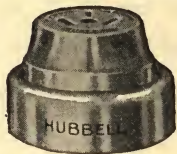


No. 7333

Fit standard duplex receptacle plates and standard switch boxes.

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
7053	\$165.00	Black Bakelite, Each Outlet Wired Independently.....	10	30	12
7333	174.00	Same as No. 7053, with 4-inch Cover.....	5	30	21
7054	165.00	Black Bakelite, Arranged With One Feed and One Return Common to Both Outlets; 3-Wire End Permanently Grounded to Supporting Strap.....	10	30	12
7334	174.00	Same as No. 7054, with 4-inch Cover.....	5	30	21
7064	165.00	Black Bakelite, Arranged With One Feed and One Return Common to Both Outlets; Grounding Terminal 3-Wire End Equipped With Binding Screw.....	10	30	12
7335	174.00	Same as No. 7064, on 4-inch Cover.....	5	30	21

## Hubbell 3-Wire Porcelain Polarized Receptacles



No. 6047

Screw holes, 1 3/4 inches on centers. Outside diameter of base, 2 1/2 inches.

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
6047	\$87.00	Concealed.....	10	50	22
6059	\$112.00	20 Amperes, 250 Volts Concealed.....	10	30	16

## Hubbell 2 to 3-Wire Composition Plug Adapters

10 Amperes, 250  
Volts; 15 Amperes,  
125 Volts



No. 7052



No. 9052-L

Third blade grounded by use of a binding post at side of body. Wire is led to flush plate screws.

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
7052	\$59.00	Tandem Blades.....	10	30	6
9052	59.00	Parallel Blades.....	10	30	6
7052-L	64.00	Tandem Blades with Ground Wire.....	10	30	7
9052-L	64.00	Parallel Blades with Ground Wire.....	10	30	7

## Hubbell 3-Wire Polarized Attachment Plug Caps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

### Finger-Grip



No. 9975

If No. 10056 is desired grounded, suffix letter G to number. Cap is cadmium finished.

No.	Per 100	Description	Cord Hole Inches	Car- ton	Std. Pkg.	Wt. Lb.
9975	\$38.00	All Rubber..	.312 to .468	10	50	6

### Regular



Nos. 6149 and 7252

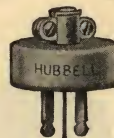


No. 6150

No.	Per 100	Description	Cord Hole Inches	Car- ton	Std. Pkg.	Wt. Lb.
6149	\$37.00	Bakelite.....	.437	10	50	5
7252	37.00	Bakelite.....	.250	10	50	6
6150	61.00	Brass Covered Comp..	.437	10	50	6

If desired grounded, suffix letter G to number.

## Armored Cord Grip Cadmium Plated



No. 7055



No. 7089

If desired grounded, suffix letter G to number.

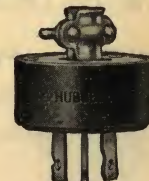
10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Cord Hole Inches	Car- ton	Std. Pkg.	Wt. Lb.
7055	\$66.00	Armored.....	.296 to .562	10	50	8
7309	66.00	Armored.....	.406 to .625	10	50	8
7089	111.00	20 Amperes, 250 Volts Armored.....	.406 to .625	10	20	9

## Rubber Cord Grip



No. 9750



No. 9777

If desired grounded, suffix letter G to number.

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Cord Hole Inches	Car- ton	Std. Pkg.	Wt. Lb.
9750	\$66.00	Rubber.....	.296 to .562	10	50	8
9751	66.00	Rubber.....	.406 to .625	10	50	8
9777	105.00	20 Amperes, 250 Volts Rubber.....	.406 to .625	10	20	5



### Hubbell 3-Wire Indestructible Polarized Rubber Cord Connectors

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 9409



No. 9975



No. 9410



No. 9413

Roll-back handle section of body, easily detached and attached for wiring.

Self-aligning phosphor bronze contact springs. Brass contact blades securely riveted to specially designed brass inserts which are moulded solidly into rubber body of cap.

#### Without Cord Grip

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
9409	\$79.00	Body.....	.312 to .468	10	50	10
9411	79.00	Body.....	.625	10	50	10
9975	38.00	Cap.....	.312 to .468	10	50	6
9976	38.00	Cap.....	.625	10	50	6

#### With Cord Grip

9410	\$88.00	Body.....	.312 to .468	10	50	11
9412	88.00	Body.....	.625	10	50	11
9413	46.00	Cap.....	.312 to .468	10	50	7
9414	46.00	Cap.....	.625	10	50	7

### Hubbell 3-Wire Polarized Cord Connectors



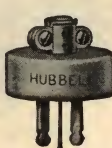
No. 6409



No. 6149



No. 7082



No. 7055

#### Without Cord Grip

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
6409	\$78.00	Body, Composition.....	.437	10	50	12
6149	37.00	Cap, Bakelite.....	.437	10	50	5
7252	37.00	Cap, Bakelite.....	.250	10	50	6

#### Armored—With Cord Grip

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Cap is steel covered, cadmium plated. If desired grounded, suffix letter G to number.

7082	\$108.00	Body, Composition.....	.296 to .562	10	50	13
7055	66.00	Cap, Composition..	.296 to .562	10	50	8
7308	110.00	Body, Composition.....	.406 to .625	10	50	8
7309	66.00	Cap, Composition..	.406 to .625	10	50	8

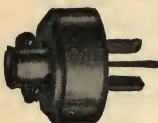
20 Amperes, 250 Volts

7088	\$171.00	Body, Composition.....	.406 to .625	10	20	9
7089	111.00	Cap, Composition..	.406 to .625	10	20	9

### Hubbell 3-Wire Polarized Cord Connectors

#### With Cord Grip

30 Amperes, 250 Volts



No. 7113



No. 7283

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
7283	\$425.00	Composition Body.....	.625 to 1.000	1	5	8
7113	167.00	Armored Cap.....	.625 to 1.000	1	5	5

### Hubbell 3-Wire Polarized Surface Receptacles



No. 9306



No. 9307

50 Amperes, 250 Volts

Nos. 7513, 7520, 9304 and 9305 caps with ground contacts removed may be used with this receptacle.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9306	\$150.00	All Porcelain.....	2	10	10

30 Amperes, 250 Volts

Nos. 7113, 7514 and 9316 caps fit this receptacle.  
9307 \$182.00 All Composition, Polarized..... 2 10 7

### Hubbell 4-Wire Polarized Flush Receptacles and Cord Grip Caps

20 Amperes, 250 Volts



No. 7250



No. 7279



No. 7251



No. 9951

Takes standard single outlet plates. Gang plates must be of special size.

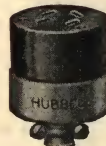
No. 9251 has shunt from ground blade to metal cover for grounding to metal-sheathed 3-wire cable.

If No. 7250 or 7279 is desired grounded, suffix letter G to number.

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
7250	\$172.00	Composition Receptacle.....		10	20	8
7279	187.00	Receptacle on 4-Inch Cover.....		5	20	13
7251	133.00	Metal Covered Cap.....	.437 to .750	10	20	6
9251	147.00	Grounded Metal Covered Cap.....	.437 to .750	10	20	5
9951	132.00	Rubber Cap.....	.437 to .750	10	20	5

### Hubbell 4-Wire Polarized Cord Grip Cord Connectors

20 Amperes, 250 Volts



No. 7351



No. 7251



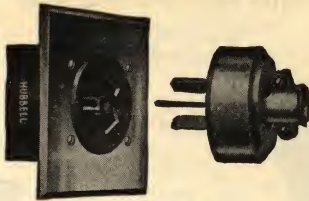
No. 9951

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
7351	\$210.00	Composition Body.....	.437 to .750	10	20	10
7251	133.00	Metal Covered Cap.....	.437 to .750	10	20	6
9251	147.00	Grounded Metal Covered Cap.....	.437 to .750	10	20	5
9951	132.00	Rubber Cap.....	.437 to .750	10	20	5



## Hubbell 3-Wire Flush Receptacles

30 Amperes, 250 Volts



Nos. 7112, 7113 and 7114

No. 7112 fits standard 2-gang box 2 inches deep or over, as listed below. If desired grounded, suffix letter G to number.

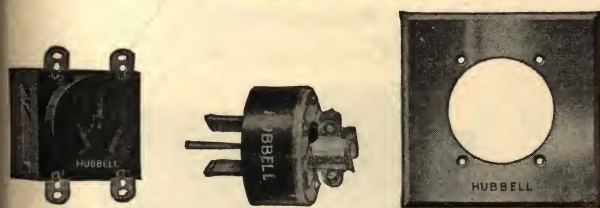
Nos. 7113 and 7514 are composition, steel covered, cadmium plated with adjustable cord grip, .625 to 1.000-inch.

No. 7114 is standard 2-gang size. Finished in brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7112	\$473.00	Black Porcelain Receptacle.....	1	5	8
7113	167.00	Cord Grip Cap.....	1	5	5
7514	167.00	Grounded Cord Grip Cap.....	1	5	4
7114	120.00	.060-Inch Brass Plate.....	1	5	2

## With Soldering Terminals

50 Amperes, 250 Volts



No. 7512

No. 7513

No. 7114

If Nos. 7512, 7513 and 7520 are desired grounded, suffix letter G to number.

No. 7114 is standard 2-gang size. Finished in brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7512	\$550.00	Porcelain Receptacle.....	1	5	7
7513	200.00	Cord Grip Cap, .875 to 1.218-Inch	1	5	5
7520	200.00	Cord Grip Cap, .625 to .937-Inch	1	5	6
7114	120.00	.060-Inch Brass Plate.....	1	5	2

## Suitable Fittings for Nos. 7112 and 7512 Receptacles

APPLETON ELECTRIC Co.—19025, 19026, 19010, 19011 Boxes. GSC-2 Cover on GSB-2 Box. 8486 Cover on 4-SJ-½, 4-SJD-½, 4-SJD¾, 4-SJD-1 Boxes. 8469 and 8469-A Covers on 4-S-½, 4-S¾ and 4-S Special Boxes. 14097 Cover on Type FS2-gang Unilet fits 7070 only. 14098 Cover required for 7112 or 7512.

CROUSE-HINDS Co.—2-Gang FS Series Condulets. Covers for use with 7070 on these condulets are S-612—surface type. SS-612—flush type. Covers for use with 7112 or 7512 on these condulets are S-622—surface and SS-622—flush.

NATIONAL METAL MLDG. Co.—24K, 24KK and 24KL Covers on 2400, 2401, 2402, 2403, 2404, 2405 and 2410 Boxes. 25K Cover on 2500, 2501, 2514, 2515 and 2590 Boxes. 30C2 Cover on 3002 and 3012 Boxes. 4230 and 4231 Boxes.

TAPLET MFG. Co.—2-Gang FS Series Taplets. Hubbell Plate Nos. 7072 and 7114 will fit above Taplets.

GENERAL ELECTRIC Co.—SP52C17 and SP52C18 Covers on SP51151 and SP52151 4-inch Square Boxes. SP6751 Cover on SP6733 Box.

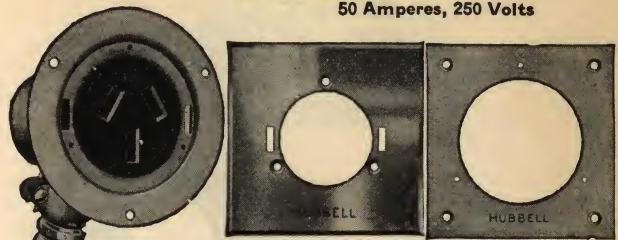
STEEL CITY ELECTRIC Co.—2GC Cover on 2G Box and Nos. 52C17, 52C18, 52C19 on 51151 and 52151 Boxes, and 72C18 Cover on 72171 Box.

THOMAS & BETTS.—32 (Box and Cover) and FD Tubelets.

## Hubbell 50-Ampere 3-Wire Power Outlets

With Solderless Terminals

50 Amperes, 250 Volts



No. 9325

No. 9326

No. 9327

Designed to be mounted through a 3½-inch hole.

Receptacle body is of black bakelite. Regularly supplied with grounding slots through plate to accommodate caps with independent ground clips as on Nos. 7923, 7977, 7952, 9304 and 9305. Also takes all standard 50-ampere, 250-volt 3-wire caps without grounding clips.

Receptacle has angle cable grip clamp which will accommodate BX, or other metal sheathed cable, or non-metallic cable measuring .750-inch to 1.187 inches. Diameter of flange is 4½ inches.

Maximum depth from underside of flange to bottom of cord clamp, with largest cable in place is 3½ inches.

Regularly supplied with three nickel plated wood screws.

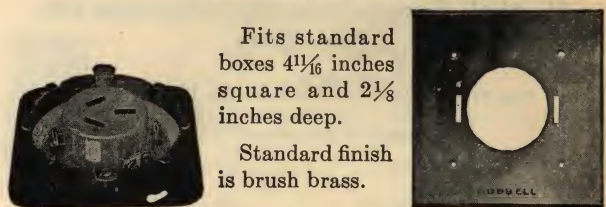
Specify No. 9325-G if receptacle is desired with one contact grounded to metal casing.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9325	\$355.00	Bakelite Receptacle.....	2	10	13
9326	96.00	Stainless Steel Face Plate, Semi-Polished Finish.....	2	10	3
*9327	45.00	Steel Sub Plate, Cadmium Finish	2	10	3

\*No. 9327 sub plate is equipped with an extra set of mounting holes and is for use under the face plate, where it may be necessary to cover up a carelessly cut hole in the plaster wall.

## Hubbell 50-Ampere 3-Wire Receptacles

50 Amperes, 250 Volts



No. 9301 with Cover

No. 9309

Fits standard boxes 4¼ inches square and 2½ inches deep.

Standard finish is brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9301	\$595.00	Receptacle with Box Cover.....	2	10	17
9309	108.00	Cadmium Steel Plate, 5½ In. Sq. Ground Slots and Sprgs. .060-In.	2	10	5

## Hubbell 3-Wire Composition Caps

50 Amperes, 250 Volts



No. 9304

No. 9316

Accommodates BX cables, cords, or flexible conduit, .950 to 1.125-inch inclusive.

With ground clips.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9304	\$250.80	Angle.....	1	10	16
9305	233.20	Straight.....	1	10	17

30 Amperes, 250 Volts

Cord hole 0.750 inches.

9316	\$99.50	Black Composition.....	2	10	6
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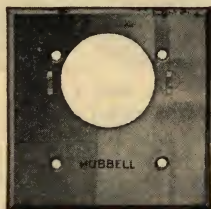
## Hubbell 50-Ampere 3-Wire Range Receptacles

With Solderless Terminals

50 Amperes, 250 Volts



No. 7974



No. 7975

Designed for standard 4-inch square box (Universal No. 52151-S box with  $\frac{3}{4}$ -inch knockouts and 52C18 cover). Receptacle is black bakelite with grounding contacts in the plate.

Will accommodate No. 7952 Bakelite Range Cap or standard rubber connection cord sets.

No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
7974	\$330.00	Receptacle Only.....	2	10	7
7975	96.00	.040-Inch Brush Brass Plate Only.....	2	10	3

## Hubbell Range Receptacle Fittings and Cord Sets

Nos. 7915, 7933 and 7929: 35 Amperes, 125 or 250 Volts

Others: 50 Amperes, 250 Volts



Nos. 7914,  
7915 and 7916



Nos. 7933  
and 7934

No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
7914	\$440.00	38-Inch Rubber Cord Set, 2 No. 6 and 1 No. 8 Wires.....	2	10	21
7915	374.00	38-Inch Rubber Cord Set, 2 No. 8 and 1 No. 10 Wires.....	2	10	21
7916	528.00	38-Inch Rubber Cord Set, 3 No. 6 Wires.....	2	10	24
7933	290.00	36-Inch Rubber Cord Set, with Bakelite Cap, 2 No. 8 and 1 No. 10-Wires.....	2	10	20
7934	316.00	36-Inch Rubber Cord Set, with Bakelite Cap, 2 No. 6 and 1 No. 8 Wires.....	2	10	25

## Hubbell 50-Ampere 3-Wire Range Outlets

With Solderless Terminals

Double Screw Type  
50 Amperes, 250 Volts



No. 7950



No. 7951



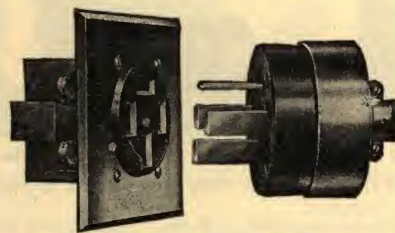
No. 7952

No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
*7950	\$165.00	Black Bakelite Surface Receptacle.....	2	10	14
7951	47.00	Ground Strap for No. 7950.....	2	10	2
7952	250.00	Black Bakelite Range Cap.....	2	10	12

\*When used with 1-inch conduits omit the clamps, and in its place use a regular conduit bushing and lock nuts.

## Hubbell 60-Ampere 4-Wire Flush Receptacles

60 Amperes, 250 Volts



Nos. 7301, 7114 and 7303

Soldering lugs on Nos. 7301, 7302 and 7303 accommodate No. 4 wires. Nos. 7302 and 7303 caps are steel covered, cadmium plated, and accommodate cords up to 1.250-inch in diameter.

Standard finish, brush brass.

No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
7301	\$707.00	Porcelain Receptacle.....	1	5	10
7302	388.00	Angle Cap.....	1	5	10
7303	353.00	Straight Cap.....	1	5	8
7114	120.00	.060-Inch Brass Plate, $4\frac{1}{2} \times 4\frac{9}{16}$ Inches.....	1	5	2

## Fittings Suitable for Use with No. 7301 Receptacles

ADALET MANUFACTURING Co.—HHE-605 combination box and cover, dead end or E type; HHC-605 combination box and cover, straight through or C type.

APPLETON ELECTRIC Co.—FS Series Unilets with 2-gang Unilet Extension and 14098 cover for surface or flush work; 4SJD boxes with special 8489-A cover for exposed work.

CROUSE-HINDS Co.—FSC-32 conduit body with EXF-12 extension; S-622 surface type cover and SS-622 flush type cover.

STEEL CITY ELECTRIC Co.—0221 box with 0231 concealed cover and 0232 surface type cover.

TAPLET MANUFACTURING Co.—Taplet fitting with one  $\frac{3}{4}$ -inch hub, Type FDE22 with one 1-inch hub, Type FDE32. Taplet fitting with two  $\frac{3}{4}$ -inch hubs for straight through conduit wiring, Type FDC22 and with two 1-inch hubs for straight through conduit wiring, Type FDC32.

THOMAS & BETTS Co.—FD 2-gang Tubelets.



## Hubbell Radio Outlets and Caps

Power Outlets: 15 Amperes, 125 Volts; 10 Amperes, 250 Volts

### Single Outlet

For Aerial and Ground



No. 4185

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
4185	\$62.00	Brown, with No. 4190 Cap.....	2	10	2
4185-I	73.00	Ivoryine, with No. 4190-I Cap.....	2	10	2

### Duplex Outlet

Radio and Power Connections



No. 4189

Divider plate separates aerial and ground from the power connections. Divider plate fits 1½, 2 and 2½-inch boxes.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4189	\$105.00	Brown.....	2	10	3
4189-I	113.00	Ivoryine....	2	10	3

### Radio Cap

One blade set at an angle to prevent insertion in power outlet. Cord hole size, .281x.375-inch.



No. 4190

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4190	\$15.00	Brown.....	2	10	1½
4190-I	20.00	Ivoryine....	2	10	1½

## Hubbell Acorn Receptacles

Designed to meet competition, and priced accordingly. Not to be confused with regular line of Hubbell receptacles listed elsewhere.

**Duplex Receptacles**  
10 Amperes, 250 Volts  
15 Amperes, 125 Volts



With wide plaster ears and parallel slots.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9890	\$24.00	Bakelite.....	10	100	15
9890-I	30.00	Ivoryine.....	10	50	8

**Flush Duplex Receptacles On Box Covers**  
10 Amperes, 250 Volts  
15 Amperes, 125 Volts



No.	Per 100	Diam. In.	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9994	\$34.00	3¼	10	50	16
9995	39.00	4	5	50	20

## Hubbell Signalite Current Taps

10 Amperes, 125 Volts



No. 6109

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
6108	\$70.00	Without Lamp.....	10	10	4
6109	125.00	With 125-Volt Lamp.....	10	10	4
6101	55.00	125-Volt Red Lamp Only.....	10	10	1

## Hubbell Pull Socket Te-Taps

Plug Outlets: 660 Watts, 250 Volts

Socket Outlets: 250 Watts, 250 Volts



No. 3190



No. 3191

Standard finish is brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
3190	\$159.00	With Medium Screw Base.....	10	10	5
3191	120.00	With ½-Inch Cap.....	10	10	4
3193	129.00	With ¾-Inch Cap.....	10	10	4
3194	119.00	With Pendant Cap.....	10	10	4

## No. 35024 Hubbell Pull Sockets

With Lamp Base

250 Watts, 250 Volts



Made with medium screw base. Equipped with 6½ inches of pull chain.

Standard finish is brush brass.

Carton, 10. Standard package, 10. Weight per standard package, 4 pounds.

No. 35024.....per 100 \$85.00

## No. 6900 Hubbell Triplex Table Taps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



With connector body, cap, and 8 feet of black cord. Carton, 1. Standard package, 5. Weight per standard package, 12 pounds.

No. 6900.....per 100 \$420.00

## No. 5897 Hubbell Medium Screw Base Adapters

660 Watts, 250 Volts



A composition adapter with tandem blades. Carton, 10. Standard package, 50. Weight per standard package, 8 pounds.

No. 5897.....per 100 \$51.00



**H & H Convenience Outlets**

**Single, Side Wired, Brown Bakelite**  
15 Amperes, 125 Volts; 10 Amperes, 250 Volts

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
1911	\$32.00	With Plaster Ears, T Slots.....	10	100 14
7700	30.00	With Straight Ears, for Bakelite Tumbler Plates.....	10	100 13

**No. 1913 Duplex, Side Wired, Brown Bakelite**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts  
Made with four screws, plaster ears, and T slots.

Carton, 10. Standard package, 100.

Weight per standard package, 19 pounds.  
No. 1913.....per 100 \$39.00

**2-Circuit, Duplex, 2 Feed Wires, Side Wired Brown Bakelite**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts  
Made with plaster ears and T slots.  
One circuit or opening is usually left "Always On" for various appliances. Other circuit may be used for lamps controlled by a switch.

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
1914	\$50.00	1 Return, Common Negative.....	10	100 19
1915	50.00	2 Returns, Separate Negative.....	10	100 19

**H & H Convenience Outlets****No. 1911-I Single, Side Wired, Ivorylite**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Made with plaster ears, T slots.

Carton 10. Standard package, 50.

Weight per standard package, 6 pounds.

No. 1911-I.....per 100 \$38.00

**No. 1913-I Duplex, Side Wired, Ivorylite**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Made with four screws, plaster ears, and T slots.

Carton 10. Standard package, 50.

Weight per standard package, 9 pounds.

No. 1913-I.....per 100 \$46.00

**2-Circuit, Duplex, 2 Feed Wires, Side Wired Ivorylite**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

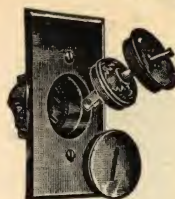
Made with plaster ears and T slots.

One circuit or opening is usually left "Always On" for various appliances. Other circuit may be used for lamps controlled by a switch.

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
1914-I	\$57.00	1 Return Common Negative.....	10	50 11
1915-I	57.00	2 Returns, Separate Negative...	10	50 11

**H & H Floor Outlets**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7797

Made to plug in lamps or appliances without running long cords from the wall.

Made in two styles: bevel edge plate, .060-inch brass, and square edge solid brass plate where it is desired to make an absolutely flush job. Two threaded solid brass covers are supplied, one for completely closing the outlet when not in use; the other with cord hole and bushing to shield the plug cap when connected.

Receptacle is recessed so plug is sunk flush with the floor. Not waterproof, designed for hardwood floors or dry places.

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
7797	\$240.00	With Bevel Edge Plate.....	2	10 8
7798	275.00	With Square Edge Plate.....	2	10 8

**H & H Weatherproof Flush Receptacles**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7792

A permanent, weatherproof outlet for plugging in outdoor lighting connections or appliances, also for inside installations exposed to moisture.

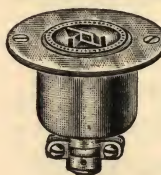
Cadmium finished .060-inch brass plate and cap. Will not rust or corrode. When not in use, a metal cap screws over the opening — when connected the regular cap may be covered with metal cap No. 7793. A rubber mat fitting under the plate, completes the weatherproofing.

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
7792	\$196.00	With Plate, 2-Wire.....	2	10 7
7780	534.00	2-Gang, with Plate, 2-Wire....	2	5 7
7796	268.00	*With Plate, 3-Wire.....	2	10 7
7793	48.00	Metal Cap.....	2	10 1

\*Pony size cap must be used.

**H & H All Round Convenience Outlets**

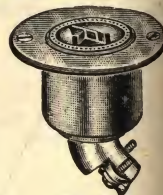
15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 5016

A neat, compact convenience outlet consisting of three parts: round galvanized box with clamp for 3/8-inch armored cable, single bakelite receptacle and brass cover plate, brass finish.

Diameter of box body, 1 1/2 inches; plate diameter, 2 1/2 inches; height overall, 2 1/2 inches including connector.



No. 5017

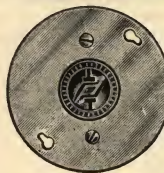
No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
5016	\$88.00	With Straight Connector.....	10	50 25
5017	88.00	With Angle Connector.....	10	50 25

**H & H Convenience Outlets**

For 3 1/4 and 4-Inch Boxes

**Cadmium Finished Cover—T Slot Bakelite Receptacles**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7007



No. 7008

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
7006	\$38.00	Single, for 3 1/4-Inch Boxes.....	10	100 34
7007	43.00	Single, for 4-Inch Boxes.....	5	50 21
7049	47.00	Duplex, for 3 1/4-Inch Boxes.....	10	50 18
7008	52.00	Duplex, for 4-Inch Boxes.....	5	50 22



**H & H Tumbler Switches and Receptacles**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 8974



No. 3975

This combination may be wired so the switch controls the receptacle or so that the receptacle is always on and the switch controls overhead lights.

**With Double Pole Switch**  
10 Amperes, 250 Volts

No.	Per 100	Description	Plate	Car-ton	Std. Pkg.	Wt. Lb.
8998	\$239.00	Composition.....	.060" Brass	2	10	8
3974	225.00	Composition.....	Bakelite...	2	10	7
8996	189.00	Composition.....	None.....	2	10	4
8974	239.00	Porcelain.....	.060" Brass	2	10	8
3975	225.00	Porcelain.....	Bakelite...	2	10	7
8973	195.00	Porcelain.....	None.....	2	10	4
8997	50.00	.060" Brass Plate.....		2	10	3
9043	36.00	Bakelite Plate.....		2	10	1

**With Double Pole Switch**  
20 Amperes, 250 Volts

1654	247.00	Composition.....	.060" Brass	2	10	8
1653	197.00	Composition.....	None.....	2	10	4

**With Single Pole Switch**  
10 Amperes, 250 Volts

3918	239.00	Composition.....	.060" Brass	2	10	8
3917	189.00	Composition.....	None.....	2	10	4

**2 Independent Circuits with Single Pole Switch**  
10 Amperes, 250 Volts

4198	275.00	Porcelain.....	.060" Brass	2	10	8
4200	261.00	Porcelain.....	Bakelite...	2	10	7
4199	225.00	Porcelain.....	None.....	2	10	4

**H & H Tumbler Switches and Warning Lights****Jewel Flush with Plate**Single Pole and 3-Way, 10 Amperes, 125 Volts;  
5 Amperes, 250 Volts

Double Pole, 10 Amperes, 250 Volts



No. 7759



No. 7739

Warning light shows at a glance when lights are left on in cellars, attics, closets, etc. The jewel is flush with the plate, thus eliminating lamp breakage. Intermediate base lamp is used.

Brass plates are .060-inch.

No.	Per 100	Description	Plate	Car-ton	Std. Pkg.	Wt. Lb.
7739	\$330.00	Single Pole.....	Brass	2	10	9
7759	330.00	Single Pole.....	Bakelite	2	10	7
7741	250.00	Single Pole.....	None	2	10	4
7956	330.00	Double Pole.....	Brass	2	10	8
7957	330.00	Double Pole.....	Bakelite	2	10	6
7958	250.00	Double Pole.....	None	2	10	4
7953	330.00	Three-Way.....	Brass	2	10	8
7954	330.00	Three-Way.....	Bakelite	2	10	6
7955	250.00	Three-Way.....	None	2	10	4
7742	80.00	Brass Plate.....		2	10	3
7754	80.00	Bakelite Plate...		2	10	1

**H & H Clock Hanger Outlets**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7707

A double service device providing mechanical support for the clock and electrical connection. Receptacle is recessed so the plug cap goes flush with the plate. This allows the clock to hang flat over the outlet, entirely covering it, with all wiring concealed. May be installed in a mantel for shelf clocks.

Standard plate finish is brush brass.

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
7707	\$168.00	2-Wire, with .040" Plate.....	2	10 5
7707-C	179.00	2-Wire, with .060" Plate.....	2	10 6
7708	272.00	3-Wire, with .040" *Plate.....	2	10 6
7708-C	283.00	3-Wire, with .060" Plate.....	2	10 7

\*Fits Nos. 7440 and 7077 caps.



No. 7750

**H & H Fan Hanger Outlets**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

This outlet provides electrical connection and mechanical support for fans. It is easy to install and fits a standard 4-inch square box. Supports a weight many times greater than a fan. Two types are supplied: clamp type for the average job where the outlet fastens to the box cover, and the stud type where hickey fastens to the box stud.

Brush brass .060-inch plate standard on both types.

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
7750	\$286.00	Clamp Type, with Plate.....	10	20 13
7751	286.00	Stud Type, with Plate.....	10	20 13
7752	255.00	Clamp Type, without Plate....	10	20 8
7753	255.00	Stud Type, without Plate.....	10	20 8
7755	31.00	Plate for Nos. 7752 and 7753....	10	20 5

**No. 5350 H & H 2-Gang Units**

Double Pole Switch, T Slot Receptacle and Warning Light Combination with .040-Inch Chromium Plate Series, Switch Controls Outlet

T Slot Receptacle Rating: 15 Amps., 125 Volts; 10 Amps., 250 Volts  
Double Pole Switch Rating: 20 Amps., 250 Volts

This combination is for heavy duty service to meet code requirements for a switch controlled outlet.

Suitable for modern appliances in kitchens, laundries, restaurants, etc.

Regularly supplied with .040-inch struck-up plates, which are included.

Polished chromium plate is standard. Brush Brass, Blendin, or Dull Chromium at the same price when specified.

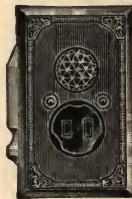
Carton, 2. Standard package. 10. Weight per standard package, 12 pounds.

No. 5350..... per 100 \$432.00

**H & H Warning Lights and Receptacles**Jewel Flush with Plate  
15 Amperes, 125 Volts  
10 Amperes, 250 Volts

This light gives a warning of current left on in toasters, percolators flat irons and other appliances.

Intermediate base lamp is standard.



No. 7728



No. 7711

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
7728	\$214.00	With Bakelite Plate.....	2	10 7
7711	214.00	With .060" Brass Plate.....	2	10 8
7712	149.00	Without Plate.....	2	10 4
7729	65.00	Bakelite Plate.....	2	10 2
4179	65.00	.060" Brass Plate.....	2	10 3



**H & H Radio Outlets****Single**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 2147



No. 2147-I

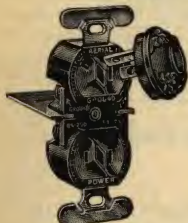
For aerial and ground connections. Made of bakelite. Has slots and plug fingers set at an angle so that it is impossible to reverse aerial and ground.

Carton, 2. Standard package, 10.

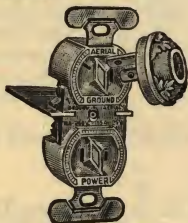
Brown Bakelite		Ivorylite		Description	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		
2147	\$62.00	2147-I	\$73.00	Receptacle and GH Cap..	2
2149	47.00	2149-I	53.00	Receptacle Only.....	2

**H & H Radio Outlets****Duplex**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 2145



No. 2145-I

For aerial, ground and power.

Made of bakelite. Has slots and plug fingers set at an angle so that it is impossible to reverse aerial and ground.

Standard power outlet.

Carton, 2. Standard package, 10.

Brown Bakelite		Ivorylite		Description	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		
2145	\$120.00	2145-I	\$134.00	Receptacle and GH Cap..	4
2146	128.00	2146-I	146.00	Receptacle, GH Cap and Bakelite Plate.....	5
2144	105.00	2144-I	113.00	Receptacle Only.....	4

**H & H Radio Outlet Caps**

Plug fingers are set at an angle so the cap cannot be inserted in a power outlet and it is impossible to reverse the aerial and ground when inserting.



No. GH

Carton, 2. Standard package, 10.



No. GH-I

Brown Bakelite		Ivorylite		Description	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		
GH	\$15.00	GH-I	\$20.00	Radio Cap.....	1 1/2

**H & H 3-Wire Radio Outlets and Power Outlets****With 3-Wire Radio Cap**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 2189



No. GK

Carton, 2. Standard package, 10.

Brown Bakelite		Ivorylite		Description	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		
2187	\$149.50	2187-I	\$163.00	Receptacle and GK Cap..	3 1/2
2188	156.50	2188-I	174.50	Receptacle, Cap and Bakelite Plate.....	4 1/2
2189	132.50	2189-I	139.50	Receptacle Only.....	3
GK	17.00	GK-I	23.50	3-Wire Radio Cap.....	1 1/2

**H & H Pony Size Attachment Plug Caps**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

**Parallel Blades**

No. GA



No. GA-I



No. GR



No. GR-I

No.	Per 100	Cord Hole Inches	Description	Carton	Std. Pkg.	Wt. Lb.
GA	\$3.50	5/32 - 3/8	(.281-.375) Bakelite	50	500	20
GA-I	5.00	5/32 - 3/8	(.281-.375) Ivorylite	25	500	19
GB	3.50	5/16 - 1/4	(.187-.250) Bakelite	50	500	20
GF	3.50	11/32	(.343) Bakelite	25	500	20
GD	3.50	13/32	(.406) Bakelite	50	500	20
GR	5.00	5/16	(.312) Bakelite, Pull Handle	25	100	5
GR-I	6.50	5/16	(.312) Ivorylite, Pull Handle	25	100	5

**Composition**

No. 1439



No. 7101

4235	\$3.50	5/16	(.312)	For SJ Cord	50	500	30
1439	3.50	5/32 - 3/8	(.281-.375)	For PO Cord	50	500	29
7035	3.50	13/32	(.406)	For S Cord	50	500	29
7101	12.00	13/32	(.406)	Armored, For S Cord	25	250	22



No. 4236

**Armored Cord Grip****Fits Duplex Receptacles**

4236	\$37.00	5/16	(.312)	Composition	10	50	7
4237	37.00	13/32	(.406)	Composition	10	50	7

**H & H Pony Size Cord Connectors****Composition—Parallel Slots**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7054



No. 3033

No.	Per 100	Cord Hole Inches	Description	Carton	Std. Pkg.	Wt. Lb.
7054	\$24.00	5/16	For 4235 Cap.....	10	50	5
7057	24.00	13/32	For 7035 Cap.....	10	50	5
3033	57.00	5/16	Armored Cord Grip.....	10	50	8

**H & H Standard Size Double T Slot Bakelite Attachment Plugs**

660 Watts, 250 Volts



No. 7051



BDT Cap

No.	Per 100	Cord Hole Inches	Description	Carton	Std. Pkg.	Wt. Lb.
7051	\$40.00	.....	Base.....	10	100	19
7052	56.00	1 1/2	Base and BDT Cap.....	10	100	23



## H & H Standard Size Attachment Plug Caps

### Parallel Blades

#### Bakelite

No.	Per 100	Cord Hole Inches	Description	Car-ton	Std. Pkg.	Wt. Lb.
No. BA	\$9.50	1 1/32 (.406)	For S Cord.....	10	250	17

### Composition

No.	Per 100	Cord Hole Inches	Description	Car-ton	Std. Pkg.	Wt. Lb.
No. 1407	\$9.50	1 1/32 (.406)	Diam. 1 1/8".....	10	250	19
1407	9.50	1 1/32 (.406)	Diam. 1 1/2".....	10	250	25
4234	9.50	1/2 (.500)	Countersunk, for 5/8" Cord.....	10	250	25
1412	37.50	1 1/32 (.406)	Brass Covered.....	10	250	25
1406	12.00	1 1/32 (.406)	Steel Covered.....	10	250	25

## H & H Standard Size Rubber Attachment Plug Caps

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

### Parallel Blades



No.	Per 100	Cord Hole Inches	Description	Car-ton	Std. Pkg.	Wt. Lb.
GG	\$18.00	1 1/32 (.406)	Standard.....	25	100	8
GN	18.00	5/16 (.312)	Standard.....	25	100	8
GNL	20.00	11/32 (.343)	Standard.....	25	100	8

### With Cord Grip

No.	Per 100	Cord Hole Inches	Description	Car-ton	Std. Pkg.	Wt. Lb.
7845	\$35.00	1 9/64-9/16 (.296-.562)	Std., Parallel	10	50	7

## H & H Standard Size Caps

### With Armored Cord Grip—Parallel Blades

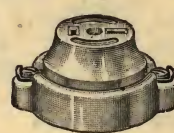
15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No.	Per 100	Cord Hole Inches	Description	Car-ton	Std. Pkg.	Wt. Lb.
7071	\$37.00	1 1/32	For 3/8" Heater Cord.	10	50	7
7072	37.00	1 1/32	For 1/2" Cord.....	10	50	7
7073	37.00	1/2	Countersunk, for 5/8" Cord.....	10	50	7
4238	41.00	1 1/32	Steel Covered.....	10	50	7
7842	41.00	5/16-9/16	Steel Covered.....	10	50	7
4435	50.00	5/16-9/16	Steel Covered, Polarized.....	10	50	7
4437	41.00	1 1/32-5/8	Steel Covered.....	10	50	7
4438	50.00	1 1/32-5/8	Steel Covered, Polarized.....	10	50	7
GL	35.00	1 1/32	Rubber.....	10	50	7

## H & H Polarized Devices

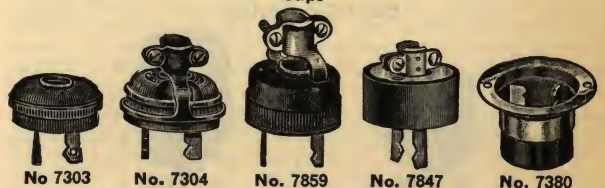
2-Wire, 10 Amperes  
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7960 flush receptacle fits standard single convenience outlet plates.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7960	\$64.00	Flush Receptacle, Bakelite....	10	30	5
7964	74.00	Single, 3 1/4-Inch Cover.....	10	30	10
7965	82.00	Single, 4-Inch Cover.....	5	30	12
7963	47.00	Composition Cap, 5/16" Cord Hole	10	30	4
7846	70.00	1 9/64-9/16 (.296-.562") Rubber, Cord Grip Cap.....	10	30	5
4427	64.00	1 1/32"-5/8" (.406-.625") Rubber, Cord Grip Cap.....	10	30	5
7966	74.00	Armored Cord Grip Cap.....	10	30	6
7961	75.00	Cleat Base.....	10	30	11
7962	75.00	Concealed Base.....	10	30	10

## 2-Wire, 20 Amperes, 250-Volt Caps



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7303	\$56.00	Composition, 9/16" (.562").....	10	30	4
7304	87.00	Armored Cord Grip, 9/16" (.562")	10	30	6
7859	84.00	Bakelite, Cord Grip, 9/16" (.562")	10	30	4
7847	84.00	Rubber, 5/8" (.625").....	10	30	6
7305	79.50	Brass Covered, 9/16" (.562").....	10	30	7
7380	125.00	Flush Motor, Screws Spaced 2 3/16" on Centers.....	10	30	8

### Receptacles



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
*7858	\$175.00	Single Circuit, Duplex, Bakelite	10	30	8
7860	184.00	Single Circuit, Duplex, 4-Inch Cover.....	10	30	12
*7861	186.00	Double Circuit, Duplex, Bakelite.....	10	30	8
*7862	195.00	Double Circuit, Duplex, 4-Inch Cover.....	10	30	12
†7089	116.00	Single, Bakelite.....	10	30	6
7306	94.00	Surface Cleat, Porcelain.....	10	30	14
†7307	94.00	Surface, Concealed, Porcelain.	10	30	14
7432	124.00	Single, 3 1/4-Inch Cover.....	10	30	10
7433	129.00	Single, 4-Inch Cover.....	5	30	21

Cadmium finished cover is standard for outlet box cover.

### Cord Connectors

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7381	\$78.00	Composition, without Cord Grip	10	30	8
7434	110.00	Composition, with Cord Grip..	10	30	11

\*Takes two No. 7859 caps and standard duplex plate.

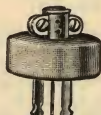
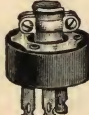
†Takes standard single convenience outlet plate.

‡Screw hole spacing, 1 1/2 inches.



**H & H Polarized Devices****3-Wire, 10 Amperes****15 Amperes, 125 Volts; 10 Amperes, 250 Volts**  
**Caps****No. 7070****Nos. 7440 and 7077**

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
7070	\$37.00	Composition, $\frac{15}{32}$ " (.468")	10	50	7
7440	37.00	Composition, Pony, $\frac{13}{32}$ " (.406")	10	50	5
7077	37.00	Composition, Pony, $\frac{1}{4}$ " (.250")	10	50	7
7457	37.00	Bakelite, Pony, $\frac{3}{32}$ " (.281")	10	50	6

**Cord Grip Caps****No. 7308****No. 4428****No. 7848**

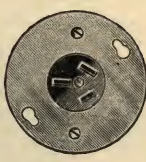
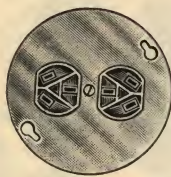
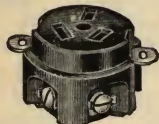
7308	\$59.00	Armored, $\frac{15}{32}$ " (.468")	10	50	10
4428	60.00	Armored, $\frac{13}{32}$ "-.5" (.406-.625")	10	50	8
7848	60.00	Rubber, $\frac{3}{16}$ " (.562")	10	50	8
4429	60.00	Rubber, $\frac{13}{32}$ "-.5" (.406-.625")	10	50	8



7309	\$86.00	Motor Plug Cap	10	50	10
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**Cord Connectors****No. 7312****No. 7313**

7312	\$78.00	Body, $\frac{15}{32}$ " (.468")	10	50	12
7313	101.00	Armored Cord Grip Body, $\frac{15}{32}$ " (.468")	10	50	15
4430	100.00	Composition, Armored Cord Grip, $\frac{13}{32}$ "-.5" (.406-.625")	10	50	8

**Receptacles****No. 7310****No. 7442****No. 7053****No. 7443****No. 7445**

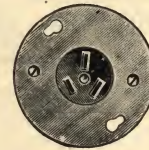
7310	\$126.00	Single, Flush	10	50	16
7442	141.00	Single, 4" Cover	5	50	34
7053	202.00	Duplex, 4" Cover	5	30	14
7443	96.00	Round, with Ground	10	30	6
7444	96.00	Round, without Ground	10	30	6
7441	126.00	Single, with Ground Shunt	10	50	16
*7445	184.00	Duplex, Flush, Bakelite	10	30	12
7311	87.00	Surface Con. Porcelain Base	10	50	21

Flush receptacles take standard single and duplex plates. Two pony caps must be used for duplex receptacle. The diameter of the large caps is too great for two caps to fit together in the duplex receptacle.

\*Will be supplied with ground shunt when specified. Add letter G to the number.

**H & H Polarized Devices****3-Wire, 20 Amperes, 250 Volts****Caps****No. 7314****No. 7315****No. 7849**

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
7314	\$70.00	Composition, $\frac{5}{8}$ " (.625")	10	30	7
7315	108.00	Cord Grip, $\frac{5}{8}$ " (.625")	10	30	9
7849	105.00	Rubber, Cord Grip, $\frac{5}{8}$ " (.625")	10	20	5

**Receptacles****No. 7316****No. 7456****No. 7317**

*7316	\$139.00	Single, Flush	10	30	14
7456	154.00	Single, with 4" Cover	5	30	22
†7317	112.00	Single, Surface Concealed	10	30	14

**No. 7318****Cord Connectors****No. 7319**

7318	\$140.00	Composition, $\frac{5}{8}$ " (.625")	10	30	13
7319	171.00	Armored Cord Grip, $\frac{5}{8}$ " (.625")	10	30	16

Flush receptacle fits standard plates. Gang installations must have a blank unit between each receptacle because of the outside diameter of plug caps.

\*Will be supplied with ground shunt when specified. Add letter G to the number.

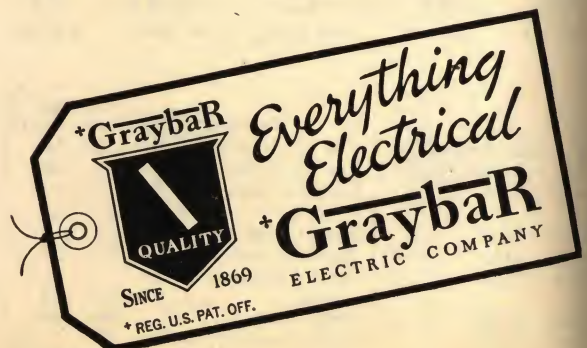
†Screw hole spacing,  $1\frac{1}{4}$  inches.

**H&H 3-Wire Range Cord Sets**

50 Amperes, 250 Volts,  
2 No. 8, 1 No. 10 Conductors  
Bakelite cap, rubber cord.

Packed 2 in a carton, 10 in a standard package.

No.	7928	7928-A	7928-B	7928-C	7928-D
Per 100	\$194.40	198.40	234.90	275.40	315.90
Length.....in.	36	38	48	60	72
Wt. Std. Pkg..lb.	16	27	33	40	48





## H & H Polarized Devices

3-Wire, 50 Amperes, 250 Volts

### Bakelite Range Caps

A 90° angle cap for flush or surface range outlets. Has ground strap and built-in cable clamps, and solderless connections. For straight-in wiring.



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7952	\$250.00	With 2-Screw Contacts.....	2	10	12

### Bakelite Flush Range Outlets

With One-Screw Contacts

Has large contacts with knurled and slotted cap screw, designed for easy, straight-in wiring.

Designed for a 4 or 4 1/16-inch box with a regular 2-gang switch cover.



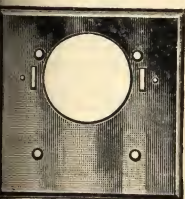
No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7987	\$291.00	Receptacle Only.....	2	10	7
7990	387.00	Receptacle, with .040-Inch Brass Plate.....	2	10	10
7991	355.00	Receptacle, with .060-Inch Brass Plate.....	2	10	11

### Plates

For No. 7935 Flush Range Outlets

Dimensions: 4 1/2 inches high, 4 1/8 inches wide. Standard 2-gang size.

Standard finish brush brass. Special finishes available at additional cost.



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7988	\$96.00	.040-Inch Brass.....	2	10	3
7989	90.00	.060-Inch Brass.....	2	10	4

### Surface Range Outlets



Nos. 7950

With built-in cable clamp interchangeable for back or bottom wiring. Has 3/4 and 1-inch knockouts.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7950	\$165.00	Bakelite, 2-Screw Contacts.....	2	10	12
7950-I	182.00	Ivorylite, 2-Screw Contacts.....	2	10	12
7944	150.00	Bakelite, 1-Screw Contacts.....	2	10	12
7944-I	182.00	Ivorylite, 1-Screw Contacts.....	2	10	12

### 3-Wire Range Cord Sets

Nos. 7914 and 7916: 50 Amperes, 250 Volts

No. 7915: 35 Amperes, 250 Volts



No. 7914

Made with rubber cap and cord. Stranded wires.

Length, 38 inches. Sets longer than 38 inches will be supplied on special order.

Prices upon request.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7914	\$343.50	2 No. 6 and 1 No. 8 Wires.....	2	10	22
7915	289.50	2 No. 8 and 1 No. 10 Wires.....	2	10	18
7916	407.50	3 No. 6 Wires.....	2	10	23

### Range Ground Straps



No. 7951

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7951	\$47.00	Ground Straps for Nos. 7950.....	2	10	2

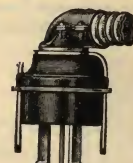
## H & H Polarized Devices

3-Wire, 50 Amperes, 250 Volts

### Caps—For Armored Cable



No. 7396

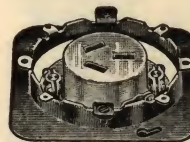


No. 7397

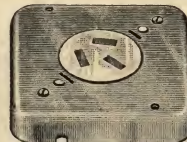
Supplied with spring reducer bushing for 8-3 A.B.C. cable when specified, at no extra charge.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7396	\$234.00	Straight.....	2	10	15
7397	251.00	90° Angle.....	2	10	16

### Receptacles



No. 7398



No. 7738



No. 7402

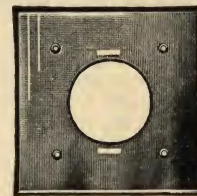
No. 7398 flush receptacle fits standard boxes 4 1/16 inches square and not less than 2 1/4 inches deep. Equipped with a plaster cover of special construction for use with standard boxes. Finished plate is 5 1/2 inches square, allowing an overhang over the box in order to make up for any irregularities in the plaster work.

No. 7738 receptacle for surface work is furnished with a galvanized box cover to fit standard boxes 4 1/16 inches square and not less than 2 1/8 inches deep.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7398	\$595.00	Flush, with Plaster Box Cover..	2	10	17
7454	512.00	Flush, without Cover.....	2	10	9
7455	83.00	Plaster Box Cover.....	2	10	5
7738	678.00	With Surface Box Galv. Cover..	2	10	21
*7402	150.00	Porcelain Surface.....	2	10	11

\*Will fit SP 72C 102 cover for 4 1/16-inch outlet box.

### Plates



No. 7400

This plate is for use with the above receptacles. Size square, 5 1/2 inches.

Steel plate has straight edges and cadmium finish.

Standard finish on brass plates, brush brass. Special finishes available at an advance in price.

Prices upon request.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7399	\$140.00	Solid Brass, without Ground Contacts.....	2	10	9
7400	170.00	Solid Brass, with Ground Contacts.....	2	10	9
7401	108.00	.060" Steel, with Ground Contacts.....	2	10	5



## H &amp; H Twist-Lock Devices

3-Wire, 30 Amperes  
Polarized Connectors

With Solderless Connections and Rubber Cable Grips  
50 Amperes, 250 Volts D.C.; 30 Amperes, 600 Volts A.C.



No. XT-7384, Female Body



No. XT-7387, Male Cap

## Not Grounded

## Female Bodies

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7336	\$550.00	.437 to .562	2	5	7
XT-7343	550.00	.562 to .687	2	5	7
XT-7390	550.00	.687 to .812	2	5	7
XT-7384	550.00	.812 to .937	2	5	7
XT-7396	550.00	.937 to 1.062	2	5	7

## Male Caps

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7339	\$440.00	.437 to .562	2	5	5
XT-7346	440.00	.562 to .687	2	5	5
XT-7393	440.00	.687 to .812	2	5	5
XT-7387	440.00	.812 to .937	2	5	5
XT-7398	440.00	.937 to 1.062	2	5	5

## \*Grounded to Casing

## Female Bodies

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7337	\$550.00	.437 to .562	2	5	7
XT-7344	550.00	.562 to .687	2	5	7
XT-7391	550.00	.687 to .812	2	5	7
XT-7385	550.00	.812 to .937	2	5	7
XT-7397	550.00	.937 to 1.062	2	5	7

## Male Caps

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7340	\$440.00	.437 to .562	2	5	5
XT-7347	440.00	.562 to .687	2	5	5
XT-7394	440.00	.687 to .812	2	5	5
XT-7388	440.00	.812 to .937	2	5	5
XT-7399	440.00	.937 to 1.062	2	5	5

## †With Equipment Ground

## Female Bodies

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7338	\$578.00	.437 to .562	2	5	7
XT-7345	578.00	.562 to .687	2	5	7
XT-7392	578.00	.687 to .812	2	5	7
XT-7358	578.00	.812 to .937	2	5	7
XT-7386	578.00	.937 to 1.062	2	5	7

## Male Caps

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7342	\$468.00	.437 to .562	2	5	5
XT-7348	468.00	.562 to .687	2	5	5
XT-7395	468.00	.687 to .812	2	5	5
XT-7359	468.00	.812 to .937	2	5	5
XT-7389	468.00	.937 to 1.062	2	5	5

\*Grounded means that the long contact blade of the cap and the corresponding contact in the connector body and receptacle are electrically connected to the outer casing.

†Equipment ground means that none of the contacts are electrically connected to the shell, but there is an additional terminal for the fourth wire, which is connected electrically to the outer casing. This fourth wire is for equipment ground.

## FA Hanger Outlets

Approved by Underwriters' Laboratories, Inc.

Combines support and electrical connection in one unit. Designed for fan hanger service. Also used with electric heaters, show window spotlights, radio, public address systems, and art pictures.

A permanent feature, built into the structure of the building at the same time as the rest of the equipment.

Correct installation is to center outlet 7½ feet from floor for 9 and 12-inch fans; 9½ feet for 16-inch fans.

Standard package, 20.

## Security Type

Consists of 4-inch square by 1½ inch deep outlet box made of No. 14 gage galvanized steel and ½ inch deep raised box cover. Cover has special plaster keys to securely hold the plaster and prevent it from cracking around the outlet.

Box provides wiring space to serve as a junction box when two or more outlets are connected to the same circuit. Knockouts are provided for ½ and ¾-inch conduit.



Hanger bracket is adjustably fastened to back of box. Bracket carries weight of appliance. Heavy brass adjusting tube threaded into the mounting bracket allows for variation in thickness of plaster. Fan or other appliance is hung upon a ¼-inch steel hanger bolt threaded into the brass tube and finished with a washer and screwdriver type cap-nut.

Face plate, 2½x4¼ inches, is made of .060 brass with brushed finish. Special finishes available at extra cost.

T-slot type, brown bakelite receptacle is riveted to a steel sub-plate.

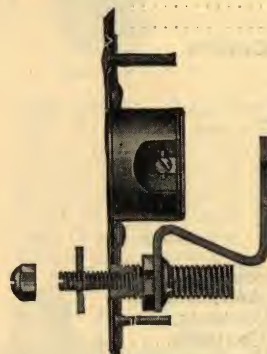
Approximate weight per standard package, 40 pounds. Complete with Box and Cover.....each \$3.60

## Fixture Stud Type

Similar in design to the Security Type, but the box, with cover and ⅝-inch fixture stud, must be furnished by the contractor. Any 4-inch square by 1½-inch deep standardized outlet with ⅝-inch fixture stud securely fastened to it and ½-inch deep single gang cover can be used. The ordinary type of switch box cannot be used.

Stamped steel adjustable hanger bracket has a cleared hole to fit the fixture stud. Two ⅝-inch lock nuts are included for fastening.

Approximate weight, per standard package, 12 pounds.



Each.....\$2.86

## Type FHSB

Same type of box and cover specified above must be supplied by the customer for Type FHSB.

Formed steel supporting frame is fastened to box cover, and fan or other appliance is attached to it. Receptacle is fastened directly to brass face plate.

This type carries the weight of appliance from box cover, not from back of box.

Approximate weight per standard package, 12 pounds.

Each.....\$2.86

## No. 7707 Clock Hanger Outlets

Provides a dual service, electrical connection and support in one unit.

The recessed receptacle permits the clock to hang flat over the outlet, without exposed or trailing cord, because the plug fits flush with the plate.

Furnished with .040-inch brush brass finished plate and 15-ampere, 2-wire receptacle. Standard package, 10.

Approx. wt. per std. pkg., 5 lb.

No. 7707.....each \$1.51





## P&S Clock Hanger Outlets

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Outlet recessed for plug cap, allows clock to hang flush with wall.

Nos. 1515 and 1515I are of all-bakelite, one-piece construction with brass hook finished to match outlet.

No. 1534 has T-slot outlet and .040-inch brush brass plate.



No. 1515



No. 1534

No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lb.
1515	\$77.00	Brown Bakelite.....	10	30	12
1515-I	88.00	Ivory.....	10	30	12
1534	170.00	Brass Plate.....	2	10	5

## P&S Fan Hanger Outlets

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Can be installed on standard 4-inch square boxes with plaster covers.

Available in clamp and stud types.



No. 1535-S  
Sectional  
View



No. 1535

No.	Per 100	Description	Std. Pkg.	Wt. Lb.
1535	\$286.00	Clamp Type.....	20	32
1535-S	286.00	Stud Type.....	20	33

For special finishes, add 10 per cent to prices.

## R&S Fan Hanger Outlets



No. 661

Furnished complete with brush brass finish plate. Special finishes available at extra cost.

### Stud Lock Type With Special Box

No.	Each	Description
649	....	2-Wire T-Slot Type
647	....	2-Wire Polarized Type
637	....	3-Wire Polarized Type

### Stud Lock Type

For Use with 3/8-Inch Stud Type Outlet Box

No.	Each	Description
649S	....	2-Wire T-Slot Type
647S	....	2-Wire Polarized Type
637S	....	3-Wire Polarized Type

### Yoke Lock Type

For Standard 4-Inch Outlet Box with Raised Cover

No.	Each	Description
661	....	2-Wire T-Slot Type
719	....	2-Wire Polarized Type
653	....	3-Wire Polarized Type

## No. 1532 P & S Floor Outlets

Rating—15 Amperes, 125 Volts  
10 Amperes, 250 Volts

Brush brass plate and two flush screw caps. Receptacle is recessed so plug is flush with floor.

Std. pkg., 10; weight, 8 pounds.

No. 1532.....per 100 \$240.00



## No. 903 Benjamin Swivel Attachment Plugs With Short Insulating Ring

660 Watts, 250 Volts—Listed by Underwriters' Laboratories



Swivel shell permits plug to be attached or removed without twisting cord. Has stamped insulating ring, porcelain base, and bakelite bushing with 13/32-inch opening for cord.

Packed 50 in a carton, 250 in standard package; weight, 30 pounds.

No. 903.....per 100 \$40.00

## No. 916 Benjamin Heavy Duty Swivel Attachment Plugs

660 Watts, 250 Volts



For railroad and heavy work. Has chuck type bushing which takes a firm grip on any of the standard portable cords from 2 3/4 to 3/8 inch outside diameter. Standard package, 50; carton, 10. Weight per standard package, 12 pounds.

No. 916.....per 100 \$100.00

## No. 1159 Mica Attachment Plugs



Made of a strong hard mica compound that will withstand hard usage.

Plugs can be furnished with left hand thread if desired. Medium screw.

Packed 10 in a carton, 100 in std. pkg.

Weight per standard package, 17 pounds.

No. 1159, Right Hand.....per 100 \$37.90

No. 1159LH, Left Hand.....per 100 42.95

## No. 1409 Safeway Weatherproof Rubber Plugs

660 Watts—600 Volts



Body made of oil and heat resisting rubber compound, nickel plated screw base with No. 14 stranded, all rubber 6-inch leads.

Packed 10 in carton, 100 in std. pkg., wt. 15 pounds.

No. 1409.....each \$.40

## No. 720 Protex Molded Rubber Twin Sockets



No. 720

Made of one-piece solid rubber, into which all metal parts have been molded. The solid rubber construction protects the lamp filament from breakage due to vibration of nearby heavy machinery.

Packed 5 in a carton, 25 in a standard package.

Weight per standard package, 6 pounds.

No. 720, with Screw Base..... each ....





**No. 1400 Safeway Plugs**

15 Amp., 125 Volts; 10 Amps., 250 Volts

A 2-wire, parallel, rubber-covered plug for industrial and railroad service. Brass blades can be removed from the body.

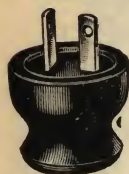
Approved by Underwriters' Laboratories. Carton, 10; standard package, 100. Weight, standard package, 13 pounds. No. 1400,  $\frac{1}{16}$ -In. Cord Hole.....each \$.40

**No. 1402 Safeway Rubber Covered Plugs****2-Wire Polarity**

15 Amp., 125 Volts—10 Amp., 250 Volts

For heavy duty industrial service. Brass blades mounted on insulating material; removable. Practically non-breakable.

Underwriters' approved. Packed 10 in a carton, 100 in std. pkg., wt. 13 pounds. No. 1402,  $\frac{1}{16}$ -In. Cord Hole.....each \$.50

**No. 1403 Safeway Rubber Covered Plugs****3-Wire Grounded**

15 Amp., 125 Volts—10 Amp., 250 Volts

For heavy industrial service. Brass blades mounted on insulating material; removable.

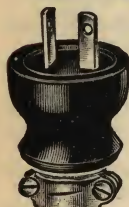
Practically non-breakable. Underwriters' approved. Packed 10 in a carton; 100 in standard package, weight, 13 pounds. No. 1403,  $\frac{1}{16}$ -In. Cord Hole.....each \$.60

**No. 1406 Safeway Rubber Covered Plugs****2-Wire Polarity—Cord Grip**

15 Amp., 125 Volts—10 Amp., 250 Volts

For heavy industrial service. Brass blades mounted on insulating material; removable.

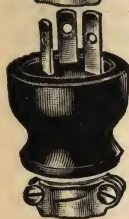
Practically non-breakable. Underwriters' approved. Packed 10 in a carton; 100 in standard package, weight, 18 pounds. No. 1406,  $\frac{3}{4}$ -In. Cord Hole.....each \$.80

**No. 1407 Safeway Rubber Covered Plugs****3-Wire Grounded—Cord Grip**

15 Amp., 125 Volts—10 Amp., 250 Volts

For heavy industrial service. Brass blades mounted on insulating material; removable.

Practically non-breakable. Underwriters' approved. Packed 10 in a carton; 100 in standard package, weight, 19 pounds. No. 1407,  $\frac{3}{4}$ -In. Cord Hole.....each \$.90

**Protex Junior Rubber Covered Plugs**

15 Amperes, 125 Volts—10 Amperes, 250 Volts

For household appliances.

Has plus cap with parallel contacts. Grip end of plug extends over cord to prevent cord breakage. Packed 10 in carton; 100 in std. pkg., weight, 8 pounds.

No. 1420,  $\frac{5}{16}$ -Inch Cord Hole.....each \$.20  
No. 1421,  $\frac{1}{16}$ -Inch Cord Hole.....each .20

**No. 1404 Safeway Rubber-Covered Plugs****2-Wire Cap—With Cord Grip**

15 Amp., 125 V., 10 Amp., 250 V.

Brass blades mounted on insulating material; removable. Practically non-breakable.

Approved by Underwriters' Laboratories. Packed 10 in a carton, 100 in std. pkg. Weight standard package, 18 pounds. No. 1404,  $\frac{3}{4}$ -In. Cord Hole.....each \$.70

**Union Bakelite Wiring Devices****For Outlet Boxes**

Cover with duplex receptacles mounted with cover.

No. ....	3057	4057
Per 100.....	\$30.92	37.16
Size.....inches	$3\frac{1}{4}$	4
Carton.....	10	10
Std. Pkg.....	100	100
Wt. per Std. Pkg.....lb.	17	21

**Safeway Rubber Cord Connector Bodies**

15 Amperes, 125 Volts—10 Amperes, 250 Volts

Actual tests have proven the Safeway rubber cord connector capable of resisting direct pulls up to 15 pounds.

**Nos. 1500, 1501**

Will fit standard parallel and polarity 2-wire plugs.

Standard cord hole,  $\frac{1}{16}$ -inch. Can be furnished with  $\frac{3}{16}$  to  $\frac{5}{8}$  inch cord holes on specifications.

Packed 10 in a carton, 100 in standard package. Weight std. pkg., 13 pounds.



No. 1500

No. 1500, Parallel.....each \$.60  
No. 1501, Polarity.....each .70



No. 1502

**Nos. 1502, 1503 with Cord Grip**

Will fit standard parallel and polarity 2-wire plugs.

Cord Grip  $\frac{1}{4}$  to  $\frac{3}{4}$ -inch inclusive.

Packed 10 in a carton, 100 in standard package.

Weight standard package, 18 pounds.

No. 1502, Parallel with Cord Grip...ea. \$.90

No. 1503, Polarity with Cord Grip...ea. 1.00

**No. 1508 Three Wire, with Cord Grip**

For trucks, trailers, shop for grounded tools, etc., or three phase motor wiring. Cord Grip  $\frac{3}{4}$ -inch.

Packed 10 in a carton, 100 in standard package.

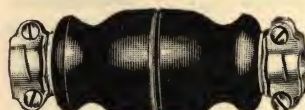
Weight standard package, 19 pounds.

No. 1508, Three Wire Female with Cord Grip.....each \$1.10

**Safeway Rubber Cord Connectors****With Cord Grips**

A strong, safe, convenient, practically non-breakable connector.

Packed 5 in a carton, 50 in a standard package.



No. 1509

No. 1504, No. 1500 Parallel, with Cap No. 1400. Weight Standard Package, 13 Pounds.....each \$1.00

No. 1505, No. 1501 Polarity, with Cap No. 1402. Weight Standard Package, 13 Pounds.....each 1.20

No. 1506, No. 1502 Parallel, with Cap No. 1404. Cord Grips, Weight Standard Package, 18 Pounds.....each 1.60

No. 1507, No. 1503 Polarity with Cap No. 1406, Cord Grips, Weight Standard Package, 18 pounds.....each 1.80

No. 1509, No. 1508 Three Wire with Cap No. 1407. Cord Grips. Weight Standard Package, 19 pounds.....each 2.00

**Safeway Rubber Duplex Receptacles****Inner-Lock**

15-Amperes, 125-Volts—10-Amperes, 250-Volts

Made of a high-grade rubber casing, in which are enclosed heavy duty inner-lock brass and bronze contacts. Body is non-breakable and the contacts are designed to hold plug caps in place, even up to a direct pull of 15 pounds. Has two binding screws in each side terminal.

Packed 5 in a carton, 25 in a standard package.

**Flush Receptacles****No. 800—Parallel**

Weight per standard package, 8 pounds.

No. 800.....each \$1.00

**No. 801—Polarity**

Weight per standard package, 8 pounds.

No. 801.....each \$1.10



No. 800

**Outlet Box Receptacles—with Cadmium-Plated Covers****Parallel**

No. .... 802 804

Each.....\$1.00 1.00

For Outlet Box...in.  $3\frac{1}{4}$  4

Wt. Std. Pkg....lb. 13 16

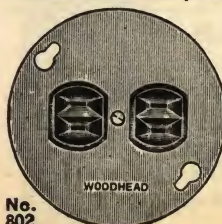
**Polarity**

No. .... 803 805

Each.....\$1.20 1.20

For Outlet Box...in.  $3\frac{1}{4}$  4

Wt. Std. Pkg....lb. 13 16



No. 802



## Bryant Surface Wiring Devices

Listed as Standard by Underwriters' Laboratories

For use in cantonments, warehouses, temporary industrial buildings, temporary housing, garages, etc.

Made of brown bakelite and is moisture and corrosion resistant. Easily installed. The six devices meet every surface wiring requirement.

Size, 5 inches long and 1 $\frac{1}{16}$  inches wide.

### Lampholders

Take threaded or clamp shade holders.

#### Keyless

600 Watts, 250 Volts

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb.
H196	\$77.90	10	50	20

#### Pull

250 Watts, 250 Volts  
With Bakelite Insulating Link and Tassel

H192	\$89.30	10	30	14
H199	\$89.30	10	30	14

### No. H191 Duplex Convenience Outlets

15 Amperes, 125 Volts  
10 Amperes, 250 Volts

With Double-Sided Contacts

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb.
H191	\$59.80	10	50	17

### No. H198 Mounting Plates For Concealed Wiring

No.	Per 100	Car-ton	Standard Package	Weight Pounds Package
H198	\$8.00	10	100	5

### Switches

\*10 Amperes, 125 Volts  
5 Amperes, 250 Volts

#### Single-Pole

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb.
H190	\$75.00	10	30	12

#### Three-Way

H194	\$81.70	10	20	8
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\*T rating.

### No. H193 Junction Box and Rosettes

660 Watts, 250 Volts

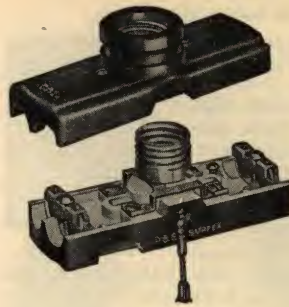
No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb.
H193	\$59.80	10	30	12

### No. H195 Armored Cable Clamp Attachments

This attachment is a combination clamp and continuous ground strap.

No.	Per 100	Car-ton	Standard Package	Weight Pounds Package
H195	\$22.80	10	100	21

## P & S Surfex Wiring Devices



A simple, safe, surface wiring device that is easily installed—just mount the device, run the wire, and connect to terminals. It makes the work of circuit-testing easier and simpler because the user needs only to disconnect the cable from the terminals, and properly connect it up again. No longer is it necessary to tear out expensive taping, soldering and splicing to locate the trouble on a dead line. Surfex saves a foot of cable on every outlet, in addition to boxes, connectors, solder, rubber tape and friction tape.

The Surfex Wiring Device has the following features: rigid cable clamp fastening to metal backplate—suitable for armored or non-metallic sheathed cable; 1 $\frac{1}{4}$ -inch width of all devices permits mounting on 2x4-inch studs; large wiring chambers for cross overs; No. 8 wood screws for mounting; easy wiring terminals—no wire loops necessary; bus bar for feed through circuits; and metal reinforcing back plate which carries ground through device when armored cable is required. Made of porcelain; gives full protection against shock, corrosion and short circuit. Brown finish.



No. 660



No. 661



No. 666



No. 667



No. 668



No. 669



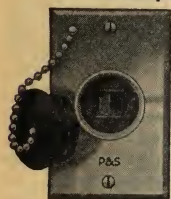
No. 670

No.	Per 100	Description	RATING	No. in Std. Pkg.	Wt. Lb. Pkg.
660	\$48.00	Single Pole Dead End Switch.....	5 A. 250 V.	50	..
661	75.00	Single Pole Feed-Thru Switch.....	10 A. 125 V.	30	..
663	81.70	3-Way Feed-Thru Switch		20	..
666	77.90	Keyless Receptacle.....	660 W. 250 V.	50	..
667	89.30	Pull Receptacle.....	250 W. 250 V.	30	..
668	55.00	Rosette.....	660 W. 250 V.	30	..
669	59.80	Junction Box.....		30	..
670	59.80	Duplex Convenience Outlet.....	10 A. 250 V.	50	..
			15 A. 125 V.	50	..



**No. 4529 P&S Single Weatherproof Outlets****Parallel Slots**

15 Amperes, 125 Volts—10 Amperes, 250 Volts



No. 4529

May be installed in a single gang switch box or flat face FS fitting. Sealed with cover and plate gaskets for complete protection. The plate is .060-inch brass with baked-on aluminum finish.



Lock Switch

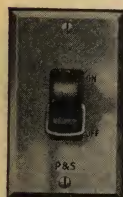
This device incorporates the regular P&S Despard 1320 outlet which has constant tension contacts, gripping both sides of the plug blades. When outlet is in use attachment plug cap may be covered with No. 4528 protective cap.

Due to the fact that this device incorporates the standard No. 1320 P&S Despard outlet, it can be readily converted into a weatherproof lock switch by removing outlet and substituting a P&S Despard switch of the 1311-L type (see illustration above at right).

Carton, 2. Standard package, 10; weight, 7 pounds.  
No. 4529.....per 100 \$178.20

**P&S Weatherproof Wiring Devices****For Single Gang Installation**

15 Amperes, 125 Volts—10 Amperes, 250 Volts



No. 4521



No. 4525



No. 4526

For installations where protection against the elements is necessary. Used in industrial plants, garages, creameries, distilleries, breweries, loading platforms, etc.



No. 4527

May be installed in a single gang switch box or flat face FS fitting. Each device is sealed with cover and plate gaskets.



No. 1533

Switches are T rated for Type C lamp loads. Outlet has constant tension contacts, gripping both sides of

the plug cap blades. Plate is .060-inch brass with baked-on aluminum finish.

Carton, 2.

No.	Per 100	Description	SWITCH AMPERES 125V. 250V.	Wt. Lb.
4521	\$192.00	Single-Pole Switch.....	10T 5	10 6
4522	250.00	Double-Pole Switch.....	10 10	10 6
4523	216.00	3-Way Switch.....	10T 5	10 6
4524	479.00	4-Way Switch.....	5T 2	5 3
*4525	286.00	2 Single-Pole Switches....	10T 5	10 7
*4526	286.00	Single-Pole Switch and Outlet.....	10T 5	10 7
4527	286.00	Duplex Outlet.....	.....	10 7
1533	196.00	Single Outlet (T-Slot)....	.....	10 7

\*With single-pole switches. Switches may be easily interchanged with other P&S Despard Switches for double-pole, 3-way, or 4-way installations.

**P&S Protective Caps**

No. 4528

Per 100  
\$48.00  
48.00

For Outlet Nos.  
4529, 4526, 4527  
1533



No. 1536

**P&S Convenience Outlets**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 1527



No. 1530



No. 5850



No. 1520

Made of brown bakelite. A locating type finding ridge is moulded in the face of each receptacle and guides the cap blades directly to the outlet contacts.

Supplied with plaster ears.

**Side Wired**

No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lb.
1527	\$37.00	Single, T-Slot.....	10	100	22
1530	39.00	Duplex, T-Slot.....	10	100	20
1530I	46.00	Ivory, T-Slot.....	10	50	11

**Top Wired**

*5850	\$50.00	Single, T-Slot.....	10	100	29
1520	58.00	Duplex, T-Slot.....	10	100	30

**With Metal Box Covers**

No. 1523

1522	\$52.00	Duplex, T-Slot, for 4-Inch Outlet Box.....	5	50	28
1523	47.00	Duplex, T-Slot, for 3¼-Inch Outlet Box.....	5	50	27

\*Brown composition.

**P&S Duplex Flush Receptacles****Parallel Slots**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 1560



No. 1560-I



No. 1558

No.	Per 100	Description	Std. Pkg.	Car- ton	Wt. Lb.
1540	\$10.80	Brown Bakelite.....	10	100	17
1540I	16.80	Ivory.....	10	50	5
1560	18.00	Brown Bakelite.....	100	10	15
1560I	24.00	Ivory.....	50	10	9

**\*With Outlet Box Covers**

1558	\$34.00	With 3¼-in. Cover.....	50	10	22
1559	39.00	With 4-in. Cover.....	50	10	24

\*Outlet box covers have bright metallic finish.



### P & S Despard Specifications Type Flush Tumbler Switches



One, two or three switches may be installed in a single-gang box. May be wired with either common or separate feed. When installing these switches, it is necessary to use mounting straps. Switches will satisfactorily handle Type C lamp loads and carry Underwriters' T rating as indicated below.

Made of bakelite; front and back are enclosed, making switch dustproof.

The handle and strap are insulated from the mechanism. Switching mechanism has a 4-point break to insure against breakdown from overloads. Contact member is designed to snuff all arcs.

Conform to the most rigid government and architectural specifications. Each switch is tested under full load current in the factory before shipment.

No.	Per 100	Description	AMPERES		Std. Pkg.	Wt. Lb.	
			125 V.	250 V.		Std.	Pkg.
1311	\$48.00	Single Pole, Brown...	*10	5	100	11	
1411	\$2.00	Single Pole, Ivory...	*10	5	50	6	
1311-LT	\$3.00	Single Pole with Luminous Handle, Brown.....	*10	5	100	11	
1411-LT	\$9.00	Single Pole with Luminous Handle, Ivory.....	*10	5	50	6	
1312	\$98.00	Double Pole, Brown..	10	10	10	2 1/2	
1412	\$102.00	Double Pole, Ivory...	10	10	10	2 1/2	
1313	\$68.00	Three-Way, Brown...	*10	5	50	8	
1413	\$72.00	Three-Way, Ivory...	*10	5	30	3	
1314	\$200.00	Four-Way, Brown...	*5	2	10	2 1/2	
1414	\$204.00	Four-Way, Ivory....	*5	2	10	2 1/2	



No. 1311-L

#### Lock Type

Switch body is made of brown bakelite.

Top is made of polished nickel.

One key is furnished with each switch.

No.	Per 100	Description	AMPERES		Std. Pkg.	Wt. Lb.	
			125 V.	250 V.		Std.	Pkg.
1311-L	\$121.00	Single Pole.....	*10	5	100	11	
1312-L	\$180.00	Double Pole.....	10	10	10	2 1/2	
1313-L	\$146.00	Three-Way.....	*10	5	50	8	
1314-L	\$280.00	Four-Way.....	*5	2	10	2 1/2	
1498	\$18.00	Key for Nos. 1311-L and 1313-L.....			1	1/16	
1499	\$18.00	Key for Nos. 1312-L and 1314-L.....			1	1/16	

\*Switches carry Underwriters' T Rating.

### P & S Despard Residential Type Flush Tumbler Switches



No. 1391, Single Pole

Bakelite, totally enclosed.

No.	Per 100	Description	AMPERES		Std. Pkg.	Wt. Lb.	
			125 V.	250 V.		Std.	Pkg.
1391	\$34.00	Single Pole, Brown	10	5	100	9	
1491	\$38.00	Single Pole, Ivory	10	5	50	5	
1393	\$44.00	Three-Way, Brown	10	5	50	5	
1493	\$48.00	Three-Way, Ivory	10	5	30	3	

### P & S Despard Convenience Outlets

Outlet Rating; 15 Amperes, 125 Volts;

10 Amperes, 250 Volts

#### Single Convenience Outlets



No. 1320

No. 1341

No. 1327

For assembly in combination with switches, radio outlets, or any other P & S Despard devices. These outlets have bakelite bodies, and double, wide contact surfaces with spring tension sufficiently removed from heat of arc to prevent withdrawal of temper, which is the cause of loose contacts.

Where one convenience outlet is to be switch-controlled, a combination of two No. 1320 or 1420 outlets having separate feed and return may be installed. Where common return is desired, the two negative terminals may be bussed together.

No.	Per 100	Description	Std. Pkg.	Wt. Lb.
1320	\$17.00	Parallel Slots, Brown.....	100	6
1420	\$25.00	Parallel Slots, Ivory.....	100	6
1341	\$29.00	Pilot Light Outlet, Parallel Slots, Brown.....	30	4
1441	\$36.00	Pilot Light Outlet, Parallel Slots, Ivory.....	20	3
1327	\$12.00	Insul. Adapter, Brown.....	50	4
1427	\$18.00	Insul. Adapter, Ivory.....	30	3

#### Duplex and Triplex Convenience Outlets



No. 13202

No. 13202Y

No. 13203

These outlets have one-piece bakelite bodies, four binding screws for feed-thru circuits, and embody the same constant tension contacts as single convenience outlets.

No.	Per 100	Description	Std. Pkg.	Wt. Lb.
13202	\$30.00	Duplex, Parallel Slots, Brown...	100	22
13202Y	\$37.00	Same as 13202; with separate Feeds, Common Returns.....	100	22
14202	\$36.00	Duplex, Parallel Slots, Ivory...	50	11
14202Y	\$44.00	Same as 14202; with separate Feeds, Common Returns.....	50	11
13203	\$38.00	Triplex, Parallel Slots, Brown...	100	25
14203	\$44.00	Triplex, Parallel Slots, Ivory...	50	13



## P & S Despard Rectangular Attachment Plug Caps

Bakelite

Parallel blades;  $\frac{3}{32}$ -inch cord hole.



No. 1321

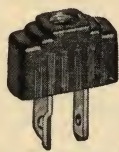
No.	Per 100	Description	No. Wt. in Lb. Std. Pkg.
1321	\$10.00	Brown.....	100 5
1421	15.00	Ivory.....	50 4
1326	11.00	Polarized, Brown.....	100 7
1426	16.00	Polarized, Ivory.....	50 4

NOTE. The use of P & S Despard Convenience Outlets with non-insulated metal plates is not recommended unless the plates are equipped with bakelite insulating adapters.

## P & S Despard Radio Outlets



No. 1322  
Radio Outlet



No. 1323  
Radio Outlet

For antenna and ground connections.

Outlet can be used in outlet box singly, in multiple, or with other P & S Despard devices.

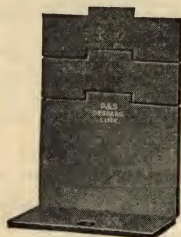
No. 1346 Box Divider keeps ground and antenna circuits separate from power circuits.

Cap blades are set at an angle which prevents insertion in power slots.

Standard package, 10; weight, 1 pound.

No. 1322, Brown Outlet.....	per 100	\$47.00
No. 1422, Ivory Outlet.....	per 100	53.00
No. 1323, Brown Cap, $\frac{3}{32}$ " Hole.....	per 100	15.00
No. 1423, Ivory Cap, $\frac{3}{32}$ " Hole.....	per 100	21.00

## No. 1346 Metal Box Dividers



No. 1346

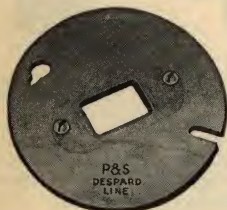
Used to keep antenna and ground wires separate from any power circuit in same box.

For  $1\frac{1}{2}$ , 2 or  $2\frac{1}{2}$ -inch switch boxes.

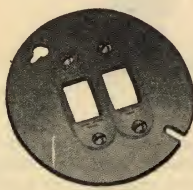
Standard package, 10; weight, 3 pounds.

No. 1346.....	per 100	\$30.00
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## Metal Box Covers



No. 1361



No. 1363

For mounting any one P & S Despard device directly on a  $3\frac{1}{4}$ -inch outlet box, or any one or two P & S Despard devices on a 4-inch outlet box. They are especially adapted for surface or exposed work. Covers have a bright metallic finish and are furnished complete with the necessary straps for installing devices.

No.	Per 100	Description	No. Wt. in Lb. Std. Pkg.
1361	\$15.00	Single Opening Cover for $3\frac{1}{4}$ -In. Box.	100 25
1362	18.00	Single Opening Cover for 4-In. Box.	100 33
1363	24.00	Two Opening Cover for 4-In. Box....	50 18

## P & S Despard Night Lights With Clear Lamps and Metal Reflectors

Rating, 75 Watts, 125 Volts

Furnished complete with lamp and metal reflector. The S-6, 6-watt, 120-volt clear Mazda lamp gives sufficient light to outline walls or furniture.

Standard package, 30; weight, 2 pounds.



No. 1339

No. 1339, with Chromium Plated Reflector.....	per 100	\$105.00
No. 1339-B, with Brush Brass Reflector.....	per 100	105.00
No. 1339-BR, with Brown Enameled Reflector.....	per 100	105.00
No. 1339-I, with Ivory Enameled Reflector.....	per 100	105.00

## P & S Despard Pilot Lights

With Red Lamps and Metal Hoods

Rating, 75 Watts, 125 Volts

An S-6, 6-watt, 120-volt red Mazda lamp and metal hood are furnished with each receptacle.

Standard package, 30; weight, 5 pounds.



No. 1340

No. 1340, with Chromium Plated Hood.....	per 100	\$105.00
No. 1340-BR, with Brown Enameled Hood.....	per 100	105.00
No. 1340-I, with Ivory Enameled Hood.....	per 100	105.00

Note: When night lights and pilot lights are desired without lamps, specify regular number with suffix "LL." When pilot lights are desired with clear lamps, specify regular number with suffix "CL."

## P & S Despard Flush Pilot Lights

Rating, 75 Watts, 125 Volts

Furnished complete with S-6, 6-watt, 120-volt, clear Mazda lamp and red glass jewel.

No. 1376. Mounted in No. 1347 single opening strap.

No. 1377. For use in combination with P & S Despard switch or outlet. Mounted in No. 1348 strap. Standard package, 30; weight, 7 pounds.



No. 1376



No. 1377

No. 1376, Single Pilot Light with Red Jewel, for Use in Single Vertical Opening Plate.....	per 100	\$105.00
No. 1377, Combination Pilot Light, for Use with Switch or Outlet, in any Two-Opening Plate.....	per 100	105.00

## Mounting Straps



No. 1347  
Single Opening  
Strap



No. 1348  
Three Opening  
Strap



No. 1354  
Appliance  
Strap

**Mounting Straps.** The correct style of mounting strap is packed with each P & S Despard plate. Straps may, however, be ordered separately, and for that purpose they are listed below. No. 1347 is  $4\frac{1}{2}$  inches long and  $1\frac{1}{16}$  inch wide. No. 1348 is  $4\frac{1}{2}$  inches long and  $1\frac{1}{16}$  inch wide. Screw hole spacing on both numbers,  $3\frac{1}{2}$  inches.

**Appliance Strap.** For mounting single P & S Despard devices in small spaces. Ideal for appliance applications. Length,  $2\frac{1}{2}$  inches; width,  $\frac{2}{32}$  inch. Mounting screw holes, tapped for 6-32 screws, spaced on  $1\frac{1}{2}$ -in. centers.

No.	Per 100	Description	No. Wt. in Lb. Std. Pkg.
1347	\$8.00	Single Opening.....	50 3
1348	8.00	Three Openings.....	50 3
1354	4.00	Appliance Strap.....	100 3



P & S Despard Accessories  
Hoods, Reflectors and Lamps

No. 1342



No. 1343



No. 1352



No. S-6

No.	Per 100	Description	No. in Std. Pkg.	Wt. Lb. Std. Pkg.
1342	\$40.00	Red Plastic Jewel for Nos. 1376 and 1377.....	30	1 1/2
1343	23.00	C. P. Hood for No. 1340.....	30	2
*1343-B	23.00	Brush Brass Hood for No. 1340-B.....	30	2
1343-BR	23.00	Brown Enam. Hood for No. 1340-BR.....	30	2
1343-I	23.00	Ivory Enam. Hood for No. 1340-I.....	30	2
1352	23.00	C. P. Reflector for No. 1339.....	30	2
*1352-B	23.00	Brush Brass Reflector for No. 1339-B.....	30	2
1352-BR	23.00	Brown Enameled Reflector for No. 1339-BR.....	30	2
1352-I	23.00	Ivory Enameled Reflector for No. 1339-I.....	30	2
†S-6	40.00	Clear Lamp.....	120	5
†S-6	50.00	Red Lamp.....	120	5

\*Can be supplied in special finishes.

†For use in pilot light receptacles and night lights. Lamps are rated 6 watts, 120 volts.

## Name Plates



No. 1330

May be used with all P &amp; S Despard plate openings. Consists of a rust-proof frame, transparent window and white card.

Standard package, 30; weight, 1/4 pound.

No. 1330, with Stainless Steel Frame.....per 100 \$18.00

## Bell Push



No. 1344

Bakelite; for 6 to 12-volt circuits. Can be placed in box with P &amp; S Despard switch, outlet or night light.

Standard package: brown, 20; ivory, 10.

Weight of standard package: brown, 2 pounds; ivory, 1 pound.

No. 1344, Brown.....per 100 \$28.00

No. 1444, Ivory.....per 100 34.00

## Blank Inserts



No. 1345

Used to fill unused openings in plates. Made with knock-out for cord hole or telephone outlet.

Standard package, 10; weight, 1 pound.

No. 1345, Brown.....per 100 \$12.00

No. 1445, Ivory.....per 100 19.00

New Process Metal Plates for P & S Despard  
Devices

No. 1781G



No. 1791V



No. 1791B

**Brown-X** and **Ivory-X**. These plates have multiple coat of baked-on, insulating enamel. Closely resembling bakelite, they have all the sturdiness of metal plates. They will not warp or crack, and their surface is satisfactory for painting.

**Chrome-X**. These plates are made of .040-inch stainless steel. Their soft, semi-polished, silverlike finish is right in the metal and will last indefinitely.

**Brown-X**  
Single-Gang

No.	Per 100	Description	Std. Pkg.	Wt. Lb. Std. Pkg.
1781A	\$13.00	One Horizontal Opening.....	100	20
1781B	13.00	Two Openings.....	50	10
1781C	13.00	Three Openings.....	30	6
1781G	13.00	One Vertical Opening.....	100	20
<b>Two-Gang</b>				
1782-2A	\$26.00	Two Horizontal Openings.....	10	4
1782-2B	33.00	Four Openings.....	10	4
1782-2C	33.00	Six Openings.....	10	3
1782-2G	26.00	Two Vertical Openings.....	10	4
<b>Three-Gang</b>				
1783-3A	\$35.00	Three Horizontal Openings.....	10	5
1783-3B	43.00	Six Openings.....	10	5
1783-3C	43.00	Nine Openings.....	10	4
1783-3G	43.00	Three Vertical Openings.....	10	5

**Ivory-X**  
Single-Gang

No.	Per 100	Description	Std. Pkg.	Wt. Lb. Std. Pkg.
1881A	\$16.00	One Horizontal Opening.....	100	20
1881B	16.00	Two Openings.....	50	10
1881C	16.00	Three Openings.....	30	6
1881G	16.00	One Vertical Opening.....	100	19
<b>Two-Gang</b>				
1882-2A	\$32.00	Two Horizontal Openings.....	10	4
1882-2B	42.00	Four Openings.....	10	4
1882-2C	42.00	Six Openings.....	10	3
1882-2G	32.00	Two Vertical Openings.....	10	4
<b>Three-Gang</b>				
1883-3A	\$48.00	Three Horizontal Openings.....	10	5
1883-3B	57.00	Six Openings.....	10	5
1883-3C	57.00	Nine Openings.....	10	4
1883-3G	48.00	Three Vertical Openings.....	10	5

**Chrome-X—(.040-Inch Stainless Steel)**  
Single-Gang

No.	Per 100	Description	Std. Pkg.	Wt. Lb. Std. Pkg.
1791A	\$28.00	One Horizontal Opening.....	100	22
1791B	29.00	Two Openings.....	50	11
1791C	29.00	Three Openings.....	30	7
1791G	28.00	One Vertical Opening.....	100	19
*1791R	30.00	Two Openings, One Insulating Adapter.....	10	3
*1791V	34.00	Two Openings, Two Insulating Adapters.....	10	3
<b>Two-Gang</b>				
1792-2A	\$66.00	Two Horizontal Openings.....	10	4
1792-2B	87.00	Four Openings.....	10	4
1792-2C	94.00	Six Openings.....	10	3
1792-2G	66.00	Two Vertical Openings.....	10	4
<b>Three-Gang</b>				
1793-3A	\$98.00	Three Horizontal Openings.....	10	5
1793-3B	122.00	Six Openings.....	10	5
1793-3C	122.00	Nine Openings.....	10	4
1793-3G	100.00	Three Vertical Openings.....	10	5

\*These plates are regularly supplied with brown bakelite insulating adapters. When ivory adapters are desired, specify regular number with suffix I.

Wall plates listed above are supplied complete with the necessary straps for mounting P&amp;S Despard devices.

NOTE. The installation of P&amp;S Despard Convenience Outlets in non-insulated metal plates is not recommended unless the plates are equipped with bakelite insulating adapters.



## Uniline Plates

## Flush Switch Plates



No. 91071

## Tumbler Switch

No. of Gangs	Car-ton	Brown			Ivory		
		No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	10	91071	\$11.00	100	92071	\$16.00	50
2	10	91072	22.00	100	92072	32.00	50
3	10	91073	33.00	100	92073	48.00	50
4	10	91074	48.00	100	92074	68.00	50
5	10	91075	120.00	100	92075	150.00	50
6	10	91076	140.00	100	92076	180.00	50

## Blank Plates



No. 91121

No. of Gangs	Car-ton	Brown			Ivory		
		No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	10	91121	\$19.00	50	92121	\$24.00	30
2	10	91122	60.00	50	92122	70.00	30

## Convenience Outlet Plates



No. 91101



No. 91091

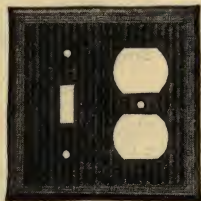
## Duplex

No. of Gangs	Car-ton	Brown			Ivory		
		No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	10	91101	\$11.00	100	92101	\$16.00	50
2	5	91102	28.00	50	92102	38.00	50

## Single

No. of Gangs	Car-ton	No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	10	91091	\$14.00	100	92091	19.00	50

## Combination Plates



No. 91532

## Tumbler Switch and Single Outlet

No. of Gangs	Car-ton	Brown			Ivory		
		No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
2	2	91512	\$28.00	10	92512	\$38.00	10

## Tumbler Switch and Duplex Outlet

No. of Gangs	Car-ton	No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
2	2	91532	\$28.00	10	92532	\$38.00	10

## Single and Duplex Outlet

No. of Gangs	Car-ton	No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
2	2	91572	\$60.00	10	92572	\$70.00	10

## Two Tubular Switches and Single Outlet

No. of Gangs	Car-ton	No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
3	2	91523	\$50.00	10	92523	\$75.00	10

## Two Tumbler Switches and Duplex Outlet

No. of Gangs	Car-ton	No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
3	2	91543	\$60.00	10	92543	\$75.00	10

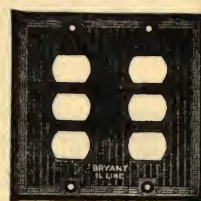
## Three Tumbler Switches and Duplex Outlet

No. of Gangs	Car-ton	No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
4	2	91554	\$130.00	10	92554	\$150.00	10

## Plates for IL Line



No. 91031



No. 91032

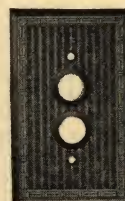
No. of Gangs	No. of Open.	Car-ton	Brown			Ivory		
			No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	*1	10	91011	\$14.00	100	92011	\$19.00	100
1	2	10	91021	14.00	50	92021	19.00	50
1	3	10	91031	14.00	30	92031	19.00	30
1	†1	10	91041	14.00	100	92041	19.00	100
2	4	10	91022	39.00	30	92022	49.00	30
2	†2	10	91042	28.00	50	92042	38.00	30
2	*2	10	91012	28.00	50	92012	38.00	30
2	6	10	91032	55.00	20	92032	65.00	20
3	6	10	91023	78.00	20	92023	93.00	20
†2	3	10	91052	39.00	30	92052	49.00	30

\*Horizontal.

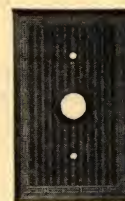
†Vertical.

‡Combination.

## Push Switch and Telephone Plates



No. 91081



No. 91181

## Push Switch Plates

No. of Gangs	Car-ton	Brown			Ivory		
		No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	10	91081	\$14.00	100	92081	\$19.00	50

## Telephone Plates

No. of Gangs	Car-ton	No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	10	91181	\$19.00	50	92181	\$24.00	30

Approximate weight of a standard package of 100, 10 pounds.

Made of bakelite.



**Bryant Process Plates**

For Standard Devices



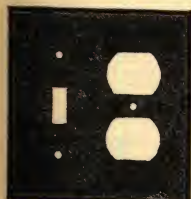
No. OS71-BX



No. OV71-BX



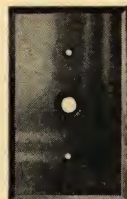
No. OF71-CX



No. OSV72-BX



No. OK71-CX



No. OG71-CX

Brown-X and Ivory-X plates are made of enameled steel and have a multiple coating of baked-on, insulating enamel. The finish resembles bakelite and may be painted to match decorations.

Chrome-X plates are made of .040-inch stainless steel. The dull silver-like finish is part of the metal and will last indefinitely.

Approximate weight per standard package of 100, 14 pounds.

**Tumbler Switch Plates**

Packed 10 gangs in a carton, 100 in a standard package.

No. of Gangs	Brown-X		Ivory-X		Chrome-X	
	No.	Per 100	No.	Per 100	No.	Per 100
1	OS71-BX	\$10.00	OS71-IX	\$12.00	OS71-CX	\$24.00
2	OS72-BX	20.00	OS72-IX	24.00	OS72-CX	66.00
3	OS73-BX	30.00	OS73-IX	36.00	OS73-CX	100.00
4	OS74-BX	39.00	OS74-IX	60.00	OS74-CX	130.00
5	OS75-BX	54.00	OS75-IX	78.00	OS75-CX	180.00
6	OS76-BX	65.00	OS76-IX	94.00	OS76-CX	200.00

**Convenience Outlet Plates**

Packed 10 in a carton, 100 in a standard package.

Duplex						
1	OV71-BX	\$10.00	OV71-IX	\$12.00	OV71-CX	\$24.00
2	OV72-BX	20.00	OV72-IX	24.00	OV72-CX	66.00
Single						
1	OF71-BX	\$12.00	OF71-IX	\$18.00	OF71-CX	\$24.00

**Combination Plates**

Packed 2 in a carton, 10 in a standard package.

Tumbler Switch and Single Outlet						
2	OSF72-BX	\$26.00	OSF72-IX	\$36.00	OSF72-CX	\$66.00
Tumbler Switch and Duplex Outlet						
2	OSV72-BX	\$26.00	OSV72-IX	\$36.00	OSV72-CX	\$66.00
Two Tumbler Switches and Duplex Outlet						
3	OSSV73-BX	\$38.00	OSSV73-IX	\$44.00	OSSV73-CX	\$98.00

**Blank Plates**

Packed 10 in a carton, 50 in a standard package.

1	OK71-BX	\$18.00	OK71-IX	\$21.00	OK71-CX	\$33.00
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**Telephone Plates**

Packed 10 in a carton, 50 in a standard package.

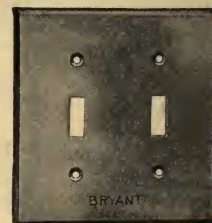
1	OG71-BX	\$15.00	OG71-IX	\$19.00	OG71-CX	\$33.00
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**Bryant Flush Plates**

For Tumbler Switches



1-Gang



2-Gang

Brush brass finish with brass mounting screws to match. S plates of the same material may be assorted in various finishes, thicknesses and gangs to make up carton and standard package quantities. No other assortment permitted. When ordering combination plates, specify S section to accommodate switches with handles operating vertically. By installing No. 746 jewel, any of these plates can be made into pilot light plates.

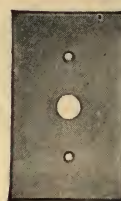
Screws packed in carton with each plate.

**.040-Inch Stamped Brass, One Horizontal Row, Symbol S**

No.	Per 100	No. of Gangs	No. in Carton	No. in Standard Package	Weight Pounds Standard Package
OS41	\$30.00	1	10	100	19
OS42	60.00	2	10	100	19
OS43	90.00	3	10	100	15

**.060-Inch Stamped Brass, One Horizontal Row, Symbol S**

OS61	\$40.00	1	10	100	25
OS62	80.00	2	10	100	21
OS63	120.00	3	10	100	20

**Bryant Flush Plate Sections**

Type T



Type T2



Type W4

**Type T Push Button Plates**

.060-Inch, for No. 3675 12-Volt Push Buttons...each \$.54

**Type T2 Telephone Jack Plates**

.060-Inch, for Western Electric No. 367 Telephone Jack Receptacles...each \$.54

**Type W4 Plates**

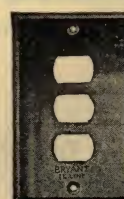
.040-Inch, for Nos. 2994, 2995 Switch and Receptacle Combinations...each \$.40

**Interchangeable IL Device Plates**  
Single-Gang—.060-Inch Brush Brass

No. IL1671-A



No. IL1671-B



No. IL1671-C



No. IL1671-G

No.	Per 100	No. of Openings	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
IL1671-A	\$48.00	*1	10	100	36
IL1671-B	48.00	2	10	50	18
IL1671-C	48.00	3	10	30	12
IL1671-G	48.00	†1	10	100	36

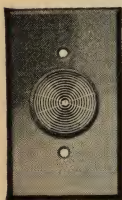
\*Horizontal. †Vertical.



## Bryant Flush Plate Sections

Combination plates should be described by using the letters shown with the illustrations of the respective plates, giving the letters in order from left to right, or from top to bottom, as the devices are to be mounted.

## Type B Bulls' Eye Plates

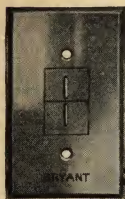


For Nos. 427 and 627 lampholder receptacles.

Consists of Type F plate with No. 3850 jewel.

.060-Inch.....each \$.79  
.040-Inch.....each .69

## Type D Receptacle Plates



For No. 630 D.D. receptacles.

Not furnished in .040-inch brass.

.060-Inch.....each \$1.30

## Type F Single Flush Receptacle Plates



Without door. Will take No. 737 jewels to make Type B plate. Also for Nos. 556, 1708, 4831, 9116, 9120 and 9326 flush receptacles.

.060-Inch.....each \$.40  
.040-Inch.....each .30

## Type G Telephone Plate



With one cord hole.

.060-Inch.....each \$.54  
.040-Inch.....each .45

## Type 12 Plates



For No. 5121 combination.

.040-Inch.....each \$.65

## Type J Junior Flush Receptacle Plates



For No. 411 Junior flush receptacle.

.060-Inch.....each \$.70

## Type K Blank Plates



.060-Inch.....each \$.50  
.040-Inch.....each .41

## Type L2 Receptacle Plates



For Nos. 427 and 627 receptacles.

Made of brass.

.040-Inch.....each \$1.34

## Type P Two-Button Push Switch Plates



For all two-button flush switches.

.060-Inch.....each \$.41  
.040-Inch.....each .30

## Type S Tumbler Switch Plates



For all single handle vertically operated flush tumbler switches.

.060-Inch.....each \$.40  
.040-Inch.....each .30

## Type V Duplex Flush Receptacle Plates



Without doors, for Nos. 122, 142, 792, 4832 and 9022 duplex flush receptacles.

.060-Inch.....each \$.40  
.040-Inch.....each .30



## Bryant Special Finishes for Flush Plates

Finish	Per 100 Gangs
Barff, Bauer (Lacquer).....	\$20.00
Bronze, Statuary (Light).....	30.00
*Chromium, Polished.....	60.00
Nickel, Polished.....	30.00
Telephone Red (Lacquer).....	20.00
Verde Antique (Lacquer).....	20.00

\*Specify if dull chromium is desired. Chromium plates are not lacquered.

**Plates for Plating:** Plates which are to be plated by the purchaser should be ordered "for plating." They will be billed at price of corresponding standard finish.

**Plates for Painting:** Plates which are to be painted by the purchaser should be ordered "for painting." They will be billed at price of corresponding brush brass finish.

## H & H Crackle Finish Metal Plates



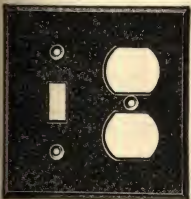
**.040-Inch Brass**  
**For Convenience Outlets**

A 1-gang duplex type plate.  
Carton, 10 gangs. Standard package, 100 gangs.

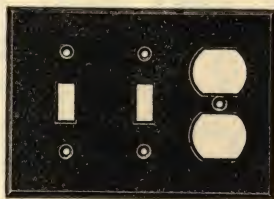
Weight per package, 16 pounds.  
No. 4290-B, Brown.....per 100 \$7.00  
No. 4290, Ivory.....per 100 9.50

## H & H Crackle Finish Metal Combination Plates

**.040-Inch Brass**



No. 4305-B



No. 4306-B

### Brown and Ivory

Brown		Ivory		Description	Car- ton	Std. Pkg.	Wt. Lb.
No.	Per 100	No.	Per 100				
4305-B	\$21.00	4305	\$31.00	2G, Tumbler-Duplex..	2	10	4
4306-B	31.50	4306	41.50	3G, 2 Tumbler-Duplex	2	10	4

### White

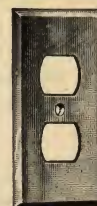
No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
4290-W	\$10.50	1 Gang, Duplex.....	10G	100G	16
4305-W	33.00	2 Gangs, Tumbler-Duplex.	2	10	4
4306-W	43.50	3 Gangs, 2 Tumbler-Duplex	2	10	4

## H & H Brass Plates

**.040-Inch Brass**



No. 8841



No. 1485



No. 4077

### For Tumbler Switches

Brush Brass		Duro Finish		Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100				
8841	\$30.00	8841-D	\$15.00	1 Gang....	10G	100G	19
8842	60.00	8842-D	30.00	2 Gangs...	10G	100G	16
8843	90.00	8843-D	45.00	3 Gangs...	10G	100G	14

### For Duplex Convenience Outlets

1485	\$30.00	1485-D	\$15.00	1 Gang....	10G	100G	16
1486	94.00	1486-D	61.00	2 Gangs...	10G	100G	13

### For Push Button Switches

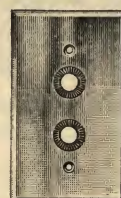
4077	\$30.00	4077-D	\$17.00	1 Gang....	10G	100G	19
4078	60.00	4078-D	34.00	2 Gangs...	10G	100G	16

## H & H Brass Plates

**.040-Inch Brass**



No. 3144



No. 3244



No. 4068

Screw holes are spaced 2 3/8 inches on centers. This is standard and accomplished by using a sub-frame which is fastened to the box, and the plate is then attached to the sub-frame, thus allowing adjustment for unevenness in box installations. Sub-frame is furnished with each plate.

### Telephone—Single Outlet

Brush Brass		Duro Finish		Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100				
3144	\$45.00	3144-D	\$29.00	1 Gang....	10G	50G	10

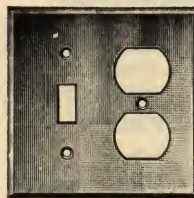
### Telephone—Double Outlet

3244	\$45.00	3244-D	\$34.00	1 Gang....	10G	50G	10
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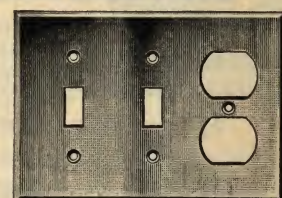
### Blank

4068	\$41.00	4068-D	\$26.00	1 Gang....	10G	50G	10
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## H & H Combination Brass Plates



No. 4315



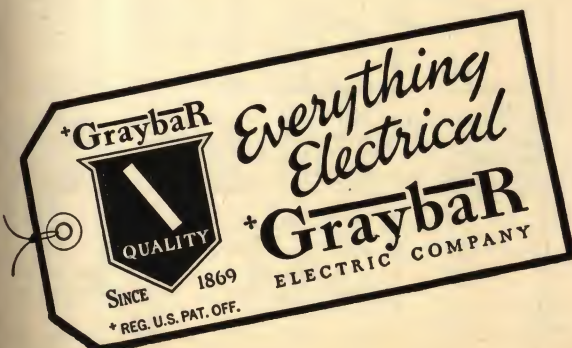
No. 4297

**.040-Inch Brass**

Brush Brass		Duro Finish		Description	Car- ton	Std. Pkg.	Wt. Lb.
No.	Per 100	No.	Per 100				
4314	\$84.00	4314-D	\$54.00	2G. Tumbler & Single	2	10	3
4315	84.00	4315-D	54.00	2G. Tumbler & Duplex	2	10	3
4367	84.00	4367-D	54.00	2G. Single & Duplex..	2	10	2
4316	126.00	4316-D	81.00	3G. 2-Tumbler & Single	2	10	2
4317	126.00	4317-D	81.00	3G. 2-Tumbler & Duplex.....	2	10	2

**.060-Inch Brass**

4294	102.00	4294-D	\$66.00	2G. Tumbler & Single	2	10	4
4295	102.00	4295-D	66.00	2G. Tumbler & Duplex	2	10	3
4368	102.00	4368-D	66.00	2G. Single & Duplex..	2	10	3
4296	153.00	4296-D	99.00	3G. 2-Tumbler & Single	2	10	3
4297	153.00	4297-D	99.00	3G. 2-Tumbler & Duplex.....	2	10	3







### No. 8691 H & H 1-Gang Brass Plates For Warning Light Receptacles

Made of .040-inch brass. Round, red glass jewel. Candelabra base lamp.

Carton, 10. Standard package, 30. Weight per standard package, 6 pounds.

No. 8691.....per 100 \$54.00



### No. 6408 H & H 1-Gang Brass Louvre Plates

For Warning Light Receptacles

Made of .040-inch brass. For deflected lighting in stairways, theatres, hospitals, etc. Candelabra base lamp.

Carton, 5. Standard package, 30. Weight per standard package, 6 pounds.

No. 6408.....per 100 \$134.00



### No. 2999 H & H Warning Light Receptacles

With Candelabra Lamps  
75 Watts, 125 Volts

Receptacles will be supplied with 220-volt candelabra lamps on special order.

Carton, 10. Standard package, 30. Weight per standard package, 18 pounds.

No. 2999.....per 100 \$116.00



### No. 2971 H & H Candelabra Lamps

For Warning Light Receptacles  
125 Volts

Carton, 10. Standard package, 30.

Weight per standard package,  $\frac{3}{4}$  pound.

No. 2971.....per 100 \$33.00



### No. 4290-C H & H Silvex Polished Finish Metal Plates

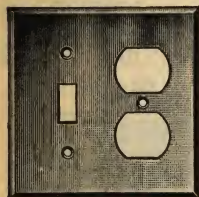
For Convenience Outlets

A 1-gang duplex type plate.

Carton, 10 gangs. Standard package, 100 gangs.

Weight per package, 16 pounds.

No. 4290-C.....per 100 \$20.00



### No. 4305-C H & H Silvex Polished Finish Metal Combination Plates

For Tumbler Switches

A 2-gang duplex type plate.

Carton, 2. Standard package, 10.

Weight per package, 4 pounds.

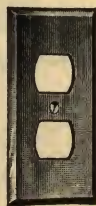
No. 4305-C.....per 100 \$54.00

### H & H Duracrome Brass Plates

.040-Inch Brass



No. 4151



No. 4150



No. 4155

Dull Chromium		Polished Chromium		Description	Carton	Std. Wt. Pkg. Lb.
No.	Per 100	No.	Per 100			
4151	\$70.00	4151-P	\$70.00	1 Gang, Tumbler	10G	100G 19
4152	132.00	4152-P	132.00	2 Gang, Tumbler	10G	100G 16
4153	182.00	4153-P	182.00	3 Gang, Tumbler	10G	100G 14
4154	250.00	4154-P	250.00	4 Gang, Tumbler	10G	100G 14
4150	70.00	4150-P	70.00	1 Gang, Duplex..	10G	100G 16
4155	70.00	4155-P	70.00	1 Gang, Single...	10G	100G 17

### H & H Metal Plates

**SPACINGS.**—Plates which are to be attached to flush devices have screw holes spaced  $2\frac{3}{8}$  inches on centers. Gangs are spaced  $1\frac{1}{16}$  inches on centers horizontally, and  $3\frac{3}{8}$  inches on centers vertically.

**ROUND CORNERS.**—Solid plates can be furnished on special order with round corners at an advance in price. Prices upon application.

**SQUARE CORNERS AND SQUARE EDGES.**—Solid plates can be furnished without the usual bevel edge but with square corners and square edges at the same price as solid plates, if the dimensions and spacings are standard. Otherwise, special prices apply.

**ENGRAVING OR MARKING.**—Plates can be engraved in block design lettering of any height. Prices upon application.

**HAMMERED BRASS.**—Solid plates can be furnished on special order with a genuine hammered finish. Prices upon request.

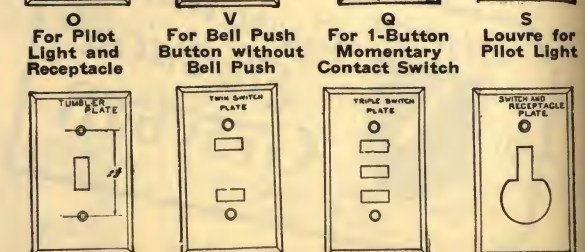
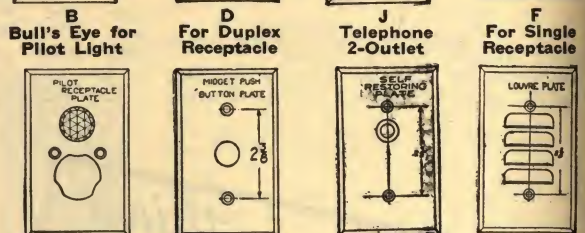
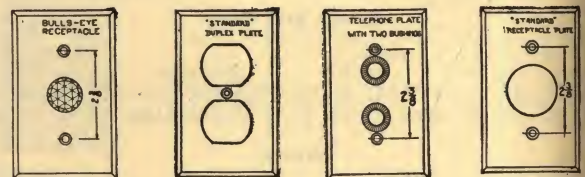
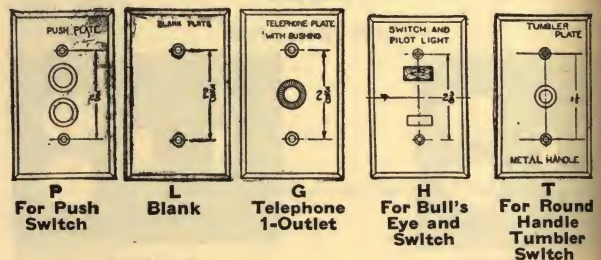
**RETURN OR EXTENSION EDGES.**—These plates are used when the wall case or switch box projects from the wall and the devices are not flush. Prices upon application.

**COMBINATION PLATES.**—A combination plate is made to order from 2 or more of the standard units listed below. If spacings or dimensions differ from standard units, special plate prices apply. The list price of any combination plate is the sum of the list of the standard units making up the combination.

The same symbol letters are used for struck-up or solid plates and the thickness of brass desired must be specified as well as the symbol letters. Three thicknesses of brass are supplied, .100 inch (solid), .060 inch and .040 inch.

Combination plates are made only on special order and are therefore not subject to return for credit.

The standard package is 10 plates of the same combination, carton, 10.





## Hubbell Brass Flush Plates

For Single and Double Telephone Outlets



No. 6904, Single



No. 6935, Double

Furnished with adapter to 3/8 inches.

A standard package consists of 50 single plates or equivalent in gangs. Carton, 10 gangs.

All kinds of telephone plates may be assorted to make standard package or carton quantity.

### Struck-Up—.040-Inch Metal Brush Brass Finish

Single		Double		Description	Dimensions Inches	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100			
6904	\$45.00	6935	.....	Single	4 1/2 x 2 3/4	8
6905	90.00	6936	.....	2-Gang	4 1/2 x 4 1/16	7
6906	135.00	6937	.....	3-Gang	4 1/2 x 6 3/8	7

### Struck-Up—.060-Inch Metal Brush Brass Finish

Single		Double		Description	Dimensions Inches	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100			
6910	\$54.00	6941	.....	Single	4 1/2 x 2 3/4	12
6911	108.00	6942	.....	2-Gang	4 1/2 x 4 1/16	10
6912	162.00	6943	.....	3-Gang	4 1/2 x 6 3/8	9

## Hubbell Brass Flush Plates

For Single and Duplex Convenience Outlets



No. 6835, Single



No. 6854, Duplex

A standard package consists of 100 single plates or the equivalent in gangs. Carton, 10 gangs.

Special finishes are available at an addition in price.

### Struck-Up—.040-Inch Metal Brush Brass Finish

For Single Convenience Outlets			For Duplex Convenience Outlets			Description	Dimensions Inches
No.	Per 100	Pkg. Wt. Lb.	No.	Per 100	Pkg. Wt. Lb.		
6835	\$30.00	17	6854	\$16.00	16	Single	4 1/2 x 2 3/4
6836	94.00	15	6855	63.00	15	2-Gang	4 1/2 x 4 1/16
6837	140.00	14	6856	94.50	14	3-Gang	4 1/2 x 6 3/8

### Struck-Up—.060-Inch Metal Brush Brass Finish

For Single Convenience Outlets			For Duplex Convenience Outlets			Description	Dimensions Inches
No.	Per 100	Pkg. Wt. Lb.	No.	Per 100	Pkg. Wt. Lb.		
5548	\$40.00	25	6258	\$40.00	21	Single	4 1/2 x 2 3/4
5549	110.00	22	6259	110.00	18	2-Gang	4 1/2 x 4 1/16
6840	166.00	20	6859	166.00	15	3-Gang	4 1/2 x 6 3/8

## Hubbell Brass Flush Plates

For Toggle and Push Switches



No. 8771—For Standard Toggle Switches



No. 8511—For Push Switches

A standard package consists of 100 single plates or equivalent in gangs.

Carton, 10 gangs.

Plates in brush brass, and special finishes may be assorted to make standard package or carton quantity.

Special finishes are available at an addition in price.

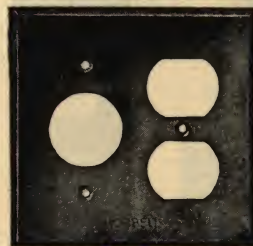
### Struck-Up—.040-Inch Metal Brush Brass Finish

For Toggle Switches		For Push Switches		Description	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		
8771	\$30.00	8511	\$30.00	Single	15
8772	60.00	8512	60.00	2-Gang	16
8773	90.00	8513	90.00	3-Gang	14
8774	152.00	.....	.....	4-Gang	13

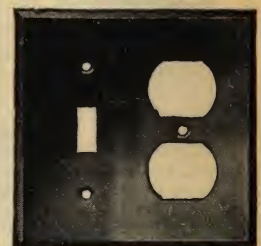
### Struck-Up—.060-Inch Metal Brush Brass Finish

No.	Per 100	Description	Pkg. Wt. Lb.
8751	\$40.00	Single	30
8752	80.00	2-Gang	28
8753	120.00	3-Gang	25
8754	178.00	4-Gang	23

## Hubbell Brass Combination Plates



No. 7040  
For Single and Duplex Convenience Outlets



No. 7105

No.	Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lb.
7040	\$84.00	.040-Inch Metal.....	2	10	3
6749	102.00	.060-Inch Metal.....	2	10	5
For Toggle Switch and Duplex Convenience Outlets					
7105	\$84.00	.040-Inch Metal.....	2	10	3
7108	102.00	.060-Inch Metal.....	2	10	5

## Screws for Hubbell Bakelite Plates

French head brass screws (D-5873) to match bakelite are supplied on all bakelite plates but bakelite headed screw No. 7213 available on special order at an advance in price.

Special ornamental head screws and special screwdriver will be supplied with standard package quantities of plates when so specified without extra charge, or may be purchased separately.



No. 7213



No. 7170  
Screwdriver  
(Special  
Equipment)

No.	Per 100	Carton Pkg.	Std. Pkg.	Wt. Lb.
7169	\$2.00	100	100	1/4
7170	\$18.00	5	5	1/4
Special Screwdriver for Above				
Bakelite Headed Screws				
7213	\$3.00	20	100	1/2
*7213-I	4.00	20	100	1/2
*Ivoryine.				



## Hubbell Combination Brass Plates

Hubbell Standard Combination Plates are made in .100-inch solid brass, also struck up .060 and .040-inch brass. Combination plates with sections for Interchangeable Line made in .060-inch brass only. Standard finish is brush brass. Special finishes are available at an advance in price.

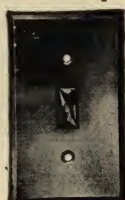
If plates are ordered by letter only and no finish is specified, brush brass will be supplied. A combination plate must be made of 2 or more different letters and not gangs of standard plates. For example: AA is not a combination plate.



**A—For Push Switch**  
.040-Inch... \$.28  
.060-Inch... .34  
Solid..... .62



**C—With Round Bull's-Eye for Pilot Light Receptacle**  
.040-Inch... \$.62  
.060-Inch... .68  
Solid..... .98



**T—With Rectangular Bull's-Eye for Pilot Light Receptacle**  
.040-Inch... \$.62  
.060-Inch... .68  
Solid..... .98



**F—For No. 7712 Pilot Light Receptacle**  
.040-Inch...  
.060-Inch...  
Solid..... \$1.04



**S—For No. 7739 Switch and Bull's-Eye**  
.040-Inch... \$.70  
.060-Inch... .76  
Solid..... 1.04



**\*O—For 5/8-Inch Push Button**  
.040-Inch...  
.060-Inch...  
Solid..... \$.62



**B—For Hubbell Round Handle Toggle Switch**  
.040-Inch... \$.28  
.060-Inch... .34  
Solid..... .62



**\*D—For Outlet Box**  
.040-Inch... \$.34  
.060-Inch... .38  
Solid..... .68



**P—For Standard Toggle Switch**  
.040-Inch... \$.28  
.060-Inch... .34  
Solid..... .62



**§G—For Single Convenience Outlets and All Other Std. 2, 3, and 4-Wire Flush Receptacles with Round Faces**  
.040-Inch... \$.28  
.060-Inch... .34  
Solid..... .62



**§Y—For No. 7410 4-Wire Twist-Lock Receptacle Only**  
.040-Inch... \$.28  
.060-Inch... .34  
Solid..... .62



**§K—For No. 7438 Receptacle Only**  
.040-Inch... \$.28  
.060-Inch... .34  
Solid..... .62



**†J—Double Hinge Cover for No. 5579 Convenience Outlet**  
.040-Inch...  
.060-Inch...  
Solid..... \$1.62



**H—For Duplex Convenience Outlet**  
.040-Inch... \$.28  
.060-Inch... .34  
Solid..... .62



**\*M—For Telephone Outlet—One Bushing**  
.040-Inch... \$.36  
.060-Inch... .42  
Solid..... .70



**\*N—For Telephone Outlet—Two Bushings**  
.040-Inch... \$.42  
.060-Inch... .48  
Solid..... .76



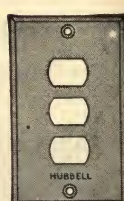
**E—For Switch and Receptacle No. 8888 etc.**  
.040-Inch... \$.28  
.060-Inch... .34  
Solid..... .62



**†A1—Single Opening (Horizontal) for One Interchangeable Device**  
.040-Inch... \$.28  
.060-Inch... .34  
†.060-Inch... .78



**†B1—Two Openings for Two Interchangeable Devices**  
.040-Inch... \$.33  
.060-Inch... .39  
†.060-Inch... .84



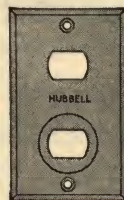
**†C1—Three Openings for Three Interchangeable Devices**  
.040-Inch... \$.33  
.060-Inch... .39  
†.060-Inch... .84



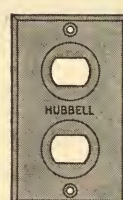
**†G1—Single Opening (Vertical) for One Interchangeable Device**  
.040-Inch... \$.28  
.060-Inch... .34  
†.060-Inch... .78



**†J1—Blank, Fastening Screws on 3 1/16-Inch Centers (Interchangeable)**  
.040-Inch... \$.34  
.060-Inch... .38  
†.060-Inch... .85



**†R1—Plate with Bakelite Insulating Adapter for Installing with Switch or Pilot Light (Interchangeable)**  
.040-Inch... \$.33  
.060-Inch... .39  
†.060-Inch... .84



**†V1—For Two Interchangeable Devices—Two Insulating Adapters**  
.040-Inch... \$.33  
.060-Inch... .39  
†.060-Inch... .84

\*Screw spacing, 2 3/8 inches. Adapter to 3 3/32 inches for box mounting supplied with this section.

†Only supplied in solid brass.

‡Available in .060-inch metal only.

§Combinations embracing two adjacent G, Y, or K sections for Nos. 7250, 7310, 7410 or 7438 receptacles, require an extra blank gang between them to provide space for insertion of caps.

¶Tandem.

Tandem or special size combination plates can only be supplied in solid brass. When arranged in tandem, add 25% to solid price of horizontal plates.

In ordering combination plates, use letters and thickness of metal in the same relative position as required. For example: P C G .060-inch would cover a plate to take one toggle switch, one bull's-eye, and one single convenience outlet—the bull's-eye to be in the middle, to be of .060-inch brass.



**Bryant Flush Tumbler Switches****General Purpose Type—With Porcelain Cups****T Rating for Use with C Lamps**

No. 3951

Dimensions of porcelain cups: Length,  $2\frac{3}{4}$  inches; width, No. 3951 series  $1\frac{1}{2}$  inches, others  $1\frac{1}{4}$  inches; depth,  $1\frac{3}{8}$  inches.

Supporting screw spacing,  $3\frac{3}{4}$  inches.

Screws for mounting are furnished.

When ordering combination plates, specify S sections to accommodate these switches.

**Single Pole****10 Amperes, 125 Volts—5 Amperes, 250 Volts**

No.	Per 100	Description	No. Ctn.	In Std. Pkg.	Wt. Lb.
3951	\$48.00	Brown Handle	10	100	30
3951-I	52.00	Ivory Handle	10	50	14
3951-L	121.00	Lock Type	10	100	31
3951-M	159.00	Momentary Contract	10	100	31
3951-SH	48.00	Steel, Stamped Handle	10	100	31

**Double Pole****10 Amperes, 125 or 250 Volts**

No.	Per 100	Description	No. Ctn.	In Std. Pkg.	Wt. Lb.
3952	\$98.00	Brown Handle	10	50	17
3952-I	102.00	Ivory Handle	10	25	17
3952-L	180.00	Lock Type	10	50	17
3952-M	219.00	Momentary Contact	10	50	17
3952-SH	298.00	Steel, Stamped Handle	10	50	17

**Three-Way****10 Amperes, 125 Volts—5 Amperes 250 Volts**

No.	Per 100	Description	No. Ctn.	In Std. Pkg.	Wt. Lb.
3953	\$68.00	Brown Handle	10	50	17
3953-I	72.00	Ivory Handle	10	25	17
3953-L	145.00	Lock Type	10	50	17
3953-M	184.00	Momentary Contact	10	50	17
3953-SH	68.00	Steel, Stamped Handle	10	50	17

**Four-Way****5 Amperes, 125 Volts—2 Amperes, 250 Volts**

No.	Per 100	Description	No. Ctn.	In Std. Pkg.	Wt. Lb.
3954	\$326.00	Brown Handle	2	10	4
3954-I	330.00	Ivory Handle	2	10	4
3954-L	409.00	Lock Type	2	10	4
3954-SH	326.00	Steel, Stamped Handle	2	10	4

**Bryant Flush Tumbler Switches****With Gray Porcelain Cups****T Rating for Use with C Lamps****High Capacity—20 Amperes, 125 Volts; 10 Amperes, 250 Volts**

No. 3972



No. 3972-SH



No. 3972-SR

Dimensions of cups: length,  $2\frac{3}{4}$  inches; width,  $1\frac{3}{4}$  inches; depth,  $1\frac{1}{2}$  inches. Lock type takes No. 6000 key.

**With Brown Bakelite Handle**

Cat. No.	Per 100	Description	AMPERES 125 250 Volts Volts	Car- ton	Std. Pkg.	Wt. Lb. Std. Pkg.
3971	\$98.00	S.P. ....	20 10	10	50	22
3972	140.00	D.P. Indicating....	20 20	2	10	5
3973	128.00	3-Way.....	20 10	2	10	5
3974	466.00	4-Way.....	10 5	2	10	5

**With Steel Handle**

3972SH	\$140.00	D.P. ....	20 20	2	10	5
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**With Roller Handle**

3972SR	\$138.00	D.P. ....	20 20	2	10	5
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Steel handles on special order, no extra charge.

Nos. 3971, 3972, 3973, and 3974 can be furnished with lock, momentary contact, and steel handle features.

**Bryant Enclosed Flush Tumbler Switches****"T" Rated for Type C Lamp Loads****Black Composition Cups**

These switches will give uniform performance, high minimum break-down, and exceptionally long life.

Dimensions of cups: Length,  $2\frac{1}{4}$  inches; depth,  $1\frac{3}{8}$  inches; width, Nos. 4961 and 4961-L,  $1\frac{1}{2}$  inches, others,  $1\frac{1}{4}$  inches.

Supporting screw spacing,  $3\frac{3}{4}$  inches.

When ordering combination plates, specify S section. Single plate OS61.

On special order, these switches can be furnished with black handles (lock switches with black bosses) without extra charge.



No. 4961

**Flush Tumbler Switches****With Brown Bakelite Handles**

Cat. No.	Per 100	Description	AMPERES 125 250 Volts Volts	Car- ton	Std. Pkg.	Wt. Lb.
4961	\$93.00	S.P. Indicating.....	10 5	10	50	18
4962	151.00	D.P. Indicating.....	10 10	2	10	4
4963	116.00	3-Way.....	10 5	10	20	7 $\frac{1}{2}$
4964	373.00	4-Way.....	5 2	2	10	4
4965	174.00	D.P. Indicating.....	20 10	2	10	4
4966	151.00	S.P. Quadruple Break, Indicating.....	20 20	10	20	8

**Flush Tumbler Lock Switches****With Brown Bakelite Bosses**

One No. 4960 Key is furnished with each lock switch.

4961-L	\$176.00	S.P. Indicating....	10 5	10	50	20
4962-L	234.00	D.P. Indicating....	10 10	2	10	4
4963-L	199.00	3-Way.....	10 5	10	20	8
4964-L	455.00	4-Way.....	5 2	2	10	4
4965-L	257.00	D.P. Indicating....	20 10	2	10	4
4966-L	234.00	S.P. Quadruple Break, Indicating.	20 20	10	20	8

Nos. 4961, 4962, 4963, and 4965 can be furnished with lock, momentary contact, and steel handle features.

**Bryant Flush Tumbler Switches****Shallow— $1\frac{5}{32}$  Inches Deep****T Rated at 20 Amperes, 125 Volts—20 Amperes, 250 Volts**

No. 5861



No. 5862



No. 5863



No. 5866

Bakelite casing with extra thick walls. Listed by Underwriters' Laboratories; conforms with Federal Specifications.

**Single-Pole**

No.	Per 100	Description	Ctn.	Std. Pkg.	Wt. Lb., Std. Pkg.
5861	\$152.00	Brown Handle	10	30	12
5861-I	163.00	Ivory Handle	10	30	12
5861-L	234.00	Lock Type	10	30	12
5861-M	273.00	Momentary Contact	10	30	12

**Double-Pole**

5862	\$175.00	Brown Handle	2	10	4
5862-I	186.00	Ivory Handle	2	10	4
5862-L	257.00	Lock Type	2	10	4
5862-M	296.00	Momentary Contact	2	10	4

**Three-Way**

5863	\$175.00	Brown Handle	2	10	4
5863-I	186.00	Ivory Handle	2	10	4
5863-L	257.00	Lock Type	2	10	4
5863-M	296.00	Momentary Contact	2	10	4

**Single-Pole—Quadruple Break**

5866	\$175.00	Brown Handle	2	10	4
5866-I	186.00	Ivory	2	10	4
5866-L	257.00	Lock Type	2	10	4
5866-M	296.00	Momentary Contact	2	10	4



## Bryant Heavy Duty Enclosed Switches

Listed by Underwriters' Laboratories



No. 5421 Single Pole, Brown Bakelite Handle



No. 5432 Double Pole



No. 6000 Lock Switch Key

With bakelite handles and casings, for standard tumbler switch plates and single gang boxes. Especially designed and built to carry the initial current surge on Type C lamps, and for general heavy duty service.

(With Handle)		Lock Type		Description	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
No.	Per 100	No.	Per 100		125 Volts.	250 Volts.			
5421	\$152.00	5421L	\$234.00	S.P....	20	20	10	30	11
5422	199.00	5422L	281.00	D.P....	20	20	2	10	4
5423	175.00	5423L	257.00	3-Way..	20	20	2	10	4
5424	524.00	5424L	607.00	4-Way..	20	10	2	10	4
5431	187.00	5431L	269.00	S.P....	30	30	10	30	11
5432	268.00	5432L	351.00	D.P....	30	30	2	10	4
5433	233.00	5433L	316.00	3-Way..	30	30	2	10	4
5434	699.00	5434L	782.00	4-Way..	20	10	2	10	4
		6000	18.00	Key for Lock Switches.	2	10	..		

One No. 6000 key furnished with each lock switch.

## Bryant Mercury Silent Flush Switches

5 Amperes, 125 or 250 Volts, "T" Rated

Listed as Standard by Underwriters' Laboratories, Inc.

Contact takes place in small completely enclosed glass sealed metal button. Rugged casing is of black bakelite. Binding screws are adequate for No. 12 wire. Wide mounting; ears facilitate alignment of switch with mounting surface.

Single-Pole		Wt. Lb.	
No.	Pr 100	Handle	Ctn. Std. Pkg. Pkg.
4701	\$96.00	Brown	10 100 21
4701-I	106.00	Ivory	10 50 11
3-Point		Wt. Lb.	
4703	\$150.00	Brown	10 50 14
4703-I	160.00	Ivory	10 30 9
Double-Pole		Wt. Lb.	
4702	\$152.00	Brown	10 50 14
4702-I	162.80	Ivory	10 30 9
4-Point		Wt. Lb.	
4704	\$374.00	Brown	2 10 3
4704-I	385.00	Ivory	2 10 3



No. 4701



No. 4703-1

## Bryant 3-Way Flush Switches

T Rating for Use with C Lamps

20 Amperes, 125 Volts—10 Amperes, 250 Volts  
Approved for Federal Specifications

Mechanism totally enclosed in arc-resisting composition. Yoke insulated from mechanism. Depth of cups  $1\frac{3}{8}$  inches.

Packed 10 in a carton, 20 in a standard package.



No. 4967

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4967	\$174.00	Brown Handle.....	8
*4967-I	178.00	Ivory Handle.....	4
4967-L	257.00	Lock Type.....	8
4967-M	295.00	Momentary.....	8
4967-SH	174.00	Steel, Stamped Handle.....	8

\*Packed 2 in carton, 10 in standard package.

## Bryant Competitive Grade Flush Tumbler Switches

T Rated

10 Amps., 125 Volts; 5 Amps., 250 Volts

Listed by Underwriters' Laboratories, Inc.

Side wiring.

Mechanism enclosed in bakelite.

Dimensions of cups,  $1\frac{21}{32} \times \frac{29}{32} \times 1\frac{1}{32}$  inches deep.



No. 61



No. 63

### Single-Pole

No.	Per 100	Handle	Carton	Std. Pkg.	Wt. Lbs. Std. Pkg.
61	\$34.00	Brown	10	100	15
61-I	38.00	Ivory	10	100	15
3-Way					
63	\$44.00	Brown	10	50	8
63-I	48.00	Ivory	10	50	8

## Bryant Porcelain Cup Flush Tumbler Switches

10 Amps., 125V.—5 Amps., 250 V.



No. 51



No. 53

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
51	\$30.00	S.P., Brown Handle	10	100	33
51-I	34.00	S.P., Ivory Handle	10	100	33
53	38.00	3-Way, Brown Handle	10	50	17
53-I	42.00	3-Way, Ivory Handle	10	50	17

## Bryant General Purpose Flush Tumbler Switches

T Rating

10 Amperes, 125 Volts; 5 Amperes, 250 Volts  
Listed by Underwriters' Laboratories, Inc.

Dimensions of cups,  $1\frac{1}{2} \times \frac{7}{8} \times 1\frac{1}{8}$  inches deep.



No. 1815-D

### Single Pole

No.	Per 100	Handle	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1815-D	\$48.00	Brown	10	100	20
1915-D	52.00	Ivory	10	50	10

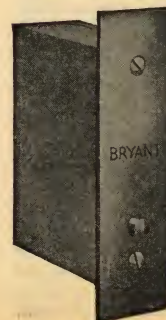
### 3-Way

No.	Per 100	Handle	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1835-D	\$68.00	Brown	10	50	8 $\frac{3}{4}$
1935-D	72.00	Ivory	10	30	7

## Bryant Self-Restoring Door Switches

Automatic—Complete with Outlet Box

Single-Pole—6 Amperes, 125 Volts; 3 Amperes, 250 Volts



No. 2355

Plunger adjustable from  $\frac{5}{16}$ — $\frac{9}{16}$  inch. Complete with brush brass plate  $\frac{45}{64}$  inch and with round strike plate. Standard finish of plate, brush brass.

Box is  $\frac{3}{16}$  in. long,  $1\frac{1}{4}$  in. wide,  $\frac{25}{32}$  in. deep; has a  $\frac{23}{32}$ -in. knockout in bottom,  $\frac{23}{32}$ -in. knockout in one end and  $\frac{1}{8}$ -in. knockout in other end.

### Switch Is On When Door Is Open

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
2355	\$410.00	2	25	30

### Switch Is Off When Door Is Open

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
2356	\$410.00	2	10	12

Switch less box \$370.00 per 100.



**Bryant Surface Tumbler Switches****With Metal Cover**

125-250 Volts

Height over cover, 10-amp. size,  $1\frac{1}{16}$  inches.Height over cover, 5-amp. size,  $1\frac{1}{16}$  inches.Supporting screw spacing, 10-amp. size,  $1\frac{3}{4}$  inches.Supporting screw spacing, 5-amp. size,  $1\frac{3}{8}$  inches.

Bakelite covers.



No. 3911

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
			125 Volts	250 Volts			
3911	\$98.00	Single-Pole.....	10	5	10	100	37
3912	140.00	Double-Pole.....	10	5	10	100	40
3913	140.00	3-Way.....	10	5	10	50	18
3914	345.00	4-Way.....	5	2	2	10	4

**Bryant Hemco Switches**

5 Amperes, 125 Volts; 3 Amperes, 250 Volts

Packed 10 in a carton, 50 in a standard package.

**Surface—Bakelite Cover**

No.	Per 100	Description	Wt. Lb. Std. Pkg.
*H21	\$36.00	S.P. Ind. Switch..	12
*H11	36.00	S.P. Ind. Slotted..	11
*H23	46.00	3-Point Solid....	12
*H13	46.00	3-Point, Slotted..	11



No. H11

**Outlet Box—Bakelite Cover**

No.	Per 100	Description	Wt. Lb. Std. Pkg.
H31	\$52.00	S.P. $3\frac{1}{4}$ -Inch....	24
H33	60.00	3-Point, $3\frac{1}{4}$ -Inch	25
H41	58.00	S.P. 4-Inch.....	33
H43	66.00	3-Point, 4-Inch..	34

\*Base diameter, 2 inches; supporting screws spaced  $1\frac{1}{8}$  inches on centers.

No. H-31

**Bryant Surface Tumbler Switches****Metal Box Covers—Cadmium Finish**10 Amps., 125 V.—5 Amps., 250 V.  
Listed by Underwriters' Laboratories

Packed 10 in a carton, 50 in a standard package.

**Single-Pole**

No.	Per 100	Size In.	Wt., Lb. Std. Pkg.
H361	\$42.00	$3\frac{1}{4}$	17
H461	47.00	4	24

**3-Way**

No.	Per 100	Size In.	Wt., Lb. Std. Pkg.
H363	\$52.00	$3\frac{1}{4}$	18
H463	57.00	4	25



No. H361



No. H363

**Bryant Bakelite Surface Tumbler Switches****With Brown Bakelite Box Covers**10 Amps., 125 V.—5 Amps., 250 V.  
Listed by Underwriters' Laboratories, Inc.Completely insulated, moisture resistant, and ribbed for extra strength.  
Packed 10 in a carton, 50 in a standard package.**Single-Pole**

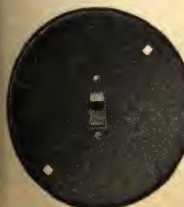
No.	Per 100	Size In.	Wt., Lb. Std. Pkg.
5631	\$60.00	$3\frac{1}{4}$	14
5641	63.00	4	15

**3-Way**

No.	Per 100	Size In.	Wt., Lb. Std. Pkg.
5633	\$70.00	$3\frac{1}{4}$	14
5643	73.00	4	15



No. 5631



No. 5633

**Bryant Single-Pole Surface Switches**

No. 2000

6 Amperes, 125 Volts; 3 Amperes, 250 Volts  
With Black Bakelite Covers, 2-Inch Porcelain BasesHeight over cover,  $1\frac{1}{32}$  inches.Supporting screw spacing,  $1\frac{3}{8}$  inches.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
2220	\$60.00	Solid.....	10	100	25
2000	60.00	Slotted.....	10	100	25
2035	70.00	Solid, Indicating.....	10	100	25
2047	70.00	Slotted, Indicating.....	10	100	25

10 Amperes, 125 Volts; 5 Amperes, 250 Volts  
With Bakelite Covers,  $2\frac{1}{16}$ -Inch Porcelain BasesHeight over cover,  $1\frac{1}{16}$  inches.Height over No. 2777 handle,  $2\frac{3}{32}$  inches.Supporting screw spacing,  $1\frac{1}{4}$  inches.

2036	\$98.00	Solid, Indicating.....	10	100	36
2048	98.00	Slotted, Indicating.....	10	100	36

20 Amperes, 125 Volts; 10 Amperes, 250 Volts  
With Metal Covers,  $3\frac{1}{32}$ -Inch Porcelain Bases

These switches can be used very satisfactorily for inductive loads.

Height over cover,  $1\frac{23}{32}$  inches.Height over No. 2779 handle,  $2\frac{3}{8}$  inches.Supporting screw spacing,  $2\frac{1}{8}$  inches.

2833	\$182.00	Solid, Indicating.....	2	10	6
2834	182.00	Slotted, Indicating.....	2	10	6

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.

**No. 3916 Bryant Quadruple Break Tumbler Switches****Single-Pole**

20 Amps., 125 V.—10 Amps., 250 V.

Solid base,  $2\frac{1}{16}$  inches. Height over cover,  $1\frac{1}{16}$  inches. Screw spacing,  $1\frac{1}{4}$  inches.

Carton, 2. Standard package, 10.

Weight per standard package, 5 pounds.

No.....	3916
Per 100.....	\$165.00

**No. 3883 Bryant Oil Burner Emergency Switches****Single Pole**

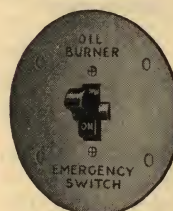
10 Amperes, 125 Volts—5 Amperes, 250 Volts

Red cover, with black letters.

Size,  $3\frac{1}{4}$  inches. Packed 10 in a carton, 50 in a standard package.

Weight per standard package, 17 lb.

No. 3883.....per 100 \$52.00

**Bryant Porcelain Sub-Bases**For devices whose bases are  $2\frac{5}{16}$  inches in maximum diameter to  $1\frac{7}{8}$  inches minimum diameter and having screw spacings from  $\frac{3}{4}$  to  $1\frac{3}{8}$  inches.

Carton, 10. Standard package, 100.



No. 2383 or 2222

Cat. No.	Per 100	Description	Wt., Lbs. Std. Pkg.
2381	\$12.00	For Surface Work.....	19
2383	12.00	For Molding Work.....	19

For devices whose bases are  $2\frac{5}{16}$  inches in maximum diameter to  $2\frac{1}{4}$  inches minimum diameter and having screw spacings from  $\frac{3}{4}$  to  $1\frac{3}{4}$  inches.  
Carton, 10. Standard package, 100.

2357	\$12.00	For Surface Work..	33
2222	12.00	For Molding Work..	33



No. 2381 or 2357



## Bryant Double-Pole Surface Switches



10 Amperes, 125 Volts; 5 Amperes, 250 Volts

2-Inch Porcelain Base  
Bakelite Covers

Diameter of porcelain base, 2 inches.

Height over cover,  $1\frac{1}{16}$  inches.Height over handle,  $2\frac{1}{16}$  inches.Supporting screw spacing,  $1\frac{3}{8}$  inches.

Cat. No.	Per 100	Style Base	Car-ton	Std. Pkg.	Wt. Lb.
2393	\$121.00	Solid, Indicating.....	10	100	37
2394	121.00	Slotted, Indicating.....	10	100	37

10 Amperes, 125 Volts; 10 Amperes, 250 Volts

2 $\frac{1}{16}$ -Inch Porcelain Base, No. 2778 Round Composition Handle  
Bakelite CoversDiameter of porcelain base,  $2\frac{1}{16}$  inches.Height over cover,  $1\frac{1}{16}$  inches.Height over handle,  $2\frac{1}{4}$  inches.Supporting screw spacing,  $1\frac{3}{4}$  inches.

2038	\$140.00	Solid, Indicating.....	10	100	37
2050	140.00	Slotted, Indicating.....	10	100	37

20 Amperes, 125 Volts; 20 Amperes, 250 Volts

3 $\frac{1}{32}$ -Inch Porcelain Base, No. 2779 Flat Composition Handle  
Metal CoversDiameter of porcelain base,  $3\frac{1}{32}$  inches.Height over cover,  $1\frac{23}{32}$  inches.Height over handle,  $2\frac{13}{32}$  inches.Supporting screw spacing,  $2\frac{3}{16}$  inches.

2040	\$273.00	Solid, Indicating.....	2	30	18
2052	273.00	Slotted, Indicating.....	2	30	18

30 Amperes, 125 Volts; 30 Amperes, 250 Volts

3 $\frac{1}{16}$ -Inch Porcelain Base; No. 2780 Flat Composition Handle  
Metal CoversDiameter of porcelain base,  $3\frac{1}{16}$  inches.Height over cover,  $1\frac{15}{16}$  inches.Height over handle,  $2\frac{3}{4}$  inches.Supporting screw spacing,  $2\frac{9}{16}$  and  $2\frac{3}{4}$  inches.

The holes in these switches are elongated to provide also  $2\frac{3}{4}$ -inch spacing, making them suitable for attachment to  $3\frac{1}{4}$ -inch outlet boxes, Type WD Octagonal Unilets, Type 700 Adaptiboxes, and Type SE Condulets.

2042	\$326.00	Solid, Indicating.....	2	30	31
2054	326.00	Slotted, Indicating.....	2	30	31

Double-Throw—20 Amperes, 125 Volts; 10 Amperes, 250 Volts

2 $\frac{1}{16}$ -Inch Porcelain Base; No. 2779 Flat Composition Handle  
Operating, Circuit 1, Off, Circuit 2, Off  
Bakelite CoversDiameter of porcelain base,  $2\frac{1}{16}$  inches.Height over cover,  $1\frac{29}{32}$  inches.Height over handle,  $2\frac{5}{8}$  inches.Supporting screw spacing,  $2\frac{1}{32}$  inches.

2613	\$413.00	Solid, Indicating.....	2	10	5
2614	413.00	Slotted, Indicating.....	2	10	5

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.

Bryant 3 and 4-Point Surface Switches  
With Black Bakelite Covers, Porcelain Bases,  
and Round Composition Handles

3-Way—3-Amp., 125 V.; 1 Amps., 250 V.

Diameter of base, 2 inches. Height over cover,  $1\frac{1}{32}$  inches. Height over handle,  $1\frac{15}{16}$  inches. Supporting screw spacing,  $1\frac{3}{8}$  inches.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.
2455	\$80.00	Solid.....	10	100	25
2456	80.00	Slotted.....	10	100	25

3-Way—10 Amps., 125 V.; 5 Amps., 250V.

Diameter of base,  $2\frac{1}{16}$  inches.Height over cover,  $1\frac{1}{16}$  inches.Height over handle,  $2\frac{1}{4}$  inches.Supporting screw spacing,  $1\frac{3}{4}$  inches.

2176	\$140.00	Solid.....	10	50	18
2030	\$140.00	Slotted.....	10	50	18

4-Way—5 Amps., 125 V.; 2 Amps., 250 V.

Four-point switches are used in connection with two 3-point switches where current is to be controlled from any one of more than two points. A 4-point switch is installed between the 3-point switches at each additional point.

Can also be used individually as pole-changing switches.

Diameter of base,  $2\frac{1}{16}$  inches.Height over cover,  $1\frac{1}{16}$  inches.Height over handle,  $2\frac{1}{4}$  inches.Supporting screw spacing,  $1\frac{3}{4}$  inches.

2183	\$297.00	Solid.....	10	30	11
2033	297.00	Slotted.....	10	30	11

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.

## Bryant Triple-Pole Surface Switches

With Bakelite Cover

20 Amperes, 125 Volts; 10 Amperes, 250 Volts

2 $\frac{1}{16}$ " Porcelain Base; No. 2779 Wing Composition HandleDiameter of base,  $2\frac{1}{16}$  inches.Height over cover,  $1\frac{29}{32}$  inches.Height over handle,  $2\frac{5}{8}$  inches.Supporting screw spacing,  $2\frac{1}{32}$  inches.

Standard finish on metal covers unless otherwise noted is polished nickel which will be supplied when the finish is not specified.

Carton, 2. Standard package, 10.

Weight package, 5 pounds.

No. 2046, Solid, Indicating.....	per 100	\$364.00
No. 2634, Slotted, Indicating.....	per 100	364.00

Bryant Expulsion Type Electric Railway  
Surface SwitchesSingle-Pole, Brown Porcelain Base, Cover, Handle  
3 Amperes, 600 Volts

Connections for one enclosed fuse No. 2316.

Has No. 2782 brown porcelain handle.

Solid, indicating base, size  $3\frac{1}{2} \times 3$  inches.Height over cover,  $1\frac{23}{32}$  inches; over handle,  $2\frac{1}{2}$  inches.Screw spacings,  $3\frac{1}{8} \times \frac{5}{8}$  in.

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb.
2315	\$270.00	2	25	45

Ferrule Type Cartridge Fuse  
For use with No. 2315.

Enclosed, indicating base.

Length,  $3\frac{3}{16}$  inches.Diameter,  $\frac{9}{16}$  inch.

2316	\$28.00	10	100	4
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No. 2315



### No. 4781 Bryant Triple-Pole Surface Rotary Switches

35 Amperes, 125 Volts  
20 Amperes, 250 Volts  
2 Hp., 3-Phase, 230 Volts  
1 Hp., 3-Phase, 575 Volts

With black bakelite cover; flat top.

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb.
4781	\$454.00	2	10	14

### Bryant Reversible Triple-Pole Expulsion Type Surface Switches

For Inductive Loads

35 Amperes, 125 Volts; 20 Amperes, 250 Volts  
2 Hp., 3 Phase, 230 Volts  
1 Hp., 3 Phase, 575 Volts

For controlling 3-phase a.c. motors up to and including 2 hp.

The switch mechanism has a composition base and handle which serves to indicate the position of the switch. Two covers are available: One is cast iron, lined, finished black, designed to be attached to conduit fittings made by The Crouse-Hinds Co., The Appleton Electric Co., The Columbia Metal



No. 781

Box Co., and the V. V. Fittings Co.; the other cover is stamped steel, finished black, with insulating lining.

The cast iron cover is dust-tight and ideal for use in flour and textile mills.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb.
780	\$408.00	Switch Only, No Cover....	2	10	13
781	728.00	Switch with Black Cast Iron Cover, Indicating.....	2	10	40
782	454.00	Switch with Stamped Steel Cover, Indicating.....	2	10	16

### Bryant Expulsion Type Switches

For Inductive Loads and Electric Railway Circuits

Designed with barriers between parts of opposite polarity which are effective in limiting the arc formed when the circuit is broken.

The window in the cover of the indicating switch, is located so that, when switch is mounted on a wall above eye level, the indications can be read right side up under the handle.

Slotted bases furnished on specifications.

Packed 2 in a carton, 50 in a standard package.

#### Single Pole

10 Amperes, 250 Volts—5 Amperes, 600 Volts

No.	Per 100	Description	Diam. In.	Screw Spacing In.	Wt., Lb.
*2049	\$138.00	Solid Base, Indicating.....	2 1/16	1 3/4	20
2060	\$306.00	Solid Base, Indicating.....	3 1/2	2 3/16	40
2303	\$358.00	Solid Base, Indicating.....	3 3/16	2 3/16	50

#### Double Pole

10 Amperes, 250 Volts—5 Amperes, 600 Volts

*2773	\$180.00	Solid Base, Indicating.....	2 1/16	1 3/4	25
2447	\$341.00	Solid Base, Indicating.....	3 1/2	2 3/16	41

#### 3-Way

10 Amperes, 250 Volts—5 Amperes, 600 Volts

*2179	\$165.00	Solid Base.....	2 1/16	1 3/4	18
*2413	180.00	Solid Base, Indicating, for 2-Circuit Use.....	2 1/16	1 3/4	18
2397	\$305.00	Solid Base.....	3 1/2	2 3/16	40
2415	324.00	Solid Base, Indicating, for 2-Circuit Use.....	3 1/2	2 3/16	40

\*Regularly furnished with bakelite cover.

### Bryant Standard Heater Type and Standard Range Type Switches



3-Heat Switch

Surface heater switch, reversible rotation, with indicating handle.

Bakelite angle cover with raised polished indications.

Solid base.

#### Single-Pole

Series-Parallel, 3-Heat—Operating High, Medium, Low, Off

Cat. No.	Per 100	AMPERES		Base Diam. Inches	Mounting Screw Centers Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
		125 Volts	250 Volts					
6259	\$198.00	10	5	2 $\frac{3}{16}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	2	10	4 $\frac{1}{4}$
6269	220.00	15	7 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{1}{32}$ to 1 $\frac{3}{4}$	2	10	5 $\frac{3}{4}$
6279	242.00	20	10	2 $\frac{13}{16}$	1 $\frac{1}{32}$ to 1 $\frac{3}{4}$	2	10	7 $\frac{3}{4}$
6289	352.00	30	15	3 $\frac{1}{16}$	2 $\frac{1}{16}$ to 2 $\frac{3}{16}$	2	10	13

#### Double-Pole

Series Parallel, 3-Heat—Operating High, Medium, Low, Off

6258	\$220.00	10	5	2 3/16	1 7/16 to 1 1/2	2	10	4 1/4
6278	286.00	20	10	2 13/16	1 1/2 to 1 3/4	2	10	8
6288	396.00	30	15	3 7/16	2 1/16 to 2 3/16	2	10	13



No. 5501

### Bryant Residential Push Button Switches

Porcelain—Shallow Cup

Listed by Underwriters' Laboratories, Inc.

Depth of cups, 1 1/4 inches.

No.	Per 100	Description	Amperes and Volts	Car-ton	Std. Pkg.	Wt., Lb.
5501	\$60.00	S.P., Plain	10-125; 5-250	10	100	34
5501-L	138.00	S.P., Lock Type	10-125; 5-250	10	100	34
5520	128.00	S.P., Quad. Break	20-125; 10-250	10	50	18
5502	129.00	Double Pole, Plain	10-125; 10-250	10	50	19
5502-L	211.00	D.P., Lock Type	10-125; 10-250	10	50	19
5505	145.00	D.P., Plain	20-125; 10-250	10	50	19
5503	85.00	3-Way, Plain	10-125; 5-250	10	50	19
5503-L	156.00	3-Way, Lock Type	10-125; 5-250	10	50	19
5504	364.00	4-Way, Plain	5-125; 2-250	2	10	3
5504-L	446.00	4-Way, Lock Type	5-125; 2-250	2	10	3

### Bryant Lock Attachments and Keys

#### No. 2384 Rotary Switch Lock Attachments



No. 2384

By substituting this lock attachment for the handle on any Bryant Rotary Switch, except heater and reversible switches, lock switches are obtained. Polished nickel.

Packed 20 in a carton, 100 in a standard package. Weight standard package, 2 pounds.

No. 2384.....per 100 \$48.00



No. 6000

#### Keys for Lock Switches

One key furnished with each lock switch. Packed 2 in a carton, 10 in a standard package. Weight standard package, 2 ounces.

No. 6000, for No. 2384 rotary; 3951 Line, 4961 Line, 3971 Line, 5421 Line, 5431 Line and IL Switches...per 100 \$18.00  
No. 2299, for Push Lock.....per 100 18.00



No. 2299



Bryant Rotary Switch Handles



No. 2779



No. 2780



No. 2781

All switch handles, lock attachments, and switch center posts, except heater and reversible switches, are threaded 8x32 except No. 18150. The handles differ in external shape and size for purposes of leverage appropriate to the size of the switch.

In an emergency, any available handle can be attached to any switch. The list below shows in a general way what handles are suitable for various sizes of switches.

Cat. No.	Per 100	Description	Std. Pkg.
2777	\$15.00	Round Composition.....	100
2779	15.00	Flat, Composition.....	100
2780	15.00	Flat, Composition.....	100
2781	15.00	Round, White Porcelain.....	100
18150	24.00	For No. 780, 781, 782, with Screw & Spring.....	10

Bryant Heater Switch Handles

Porcelain Indicating Handles  
for No. 6200 Line of Reversible  
Switches



No. 6201



No. 6203

Cat. No.	Per 100	For Switch Nos.	Std. Pkg.
6201	\$30.00	6258, 6259, 6269.....	100
6202	30.00	6279, 6278.....	100
6203	30.00	6289, 6288.....	100

No. 2572 Bryant Pendent Push Switches  
Push-Through Buttons



Metal Casings—Single-Pole  
6 Amps., 125 V.; 3 Amps., 250 V.

Listed by Underwriters' Laboratories, Inc.

Has .406 (13/32)-Inch cord hole.  
Carton, 10. Standard package, 100. Weight  
per standard package, 16 pounds.

No. 2572.....per 100 \$70.00

No. 2842 Bryant Canopy Pull Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts



Each switch is provided with two washers for mounting in outlet boxes.

Furnished with short chain and 4 feet of cord.

Stem, 1 1/32 inch long.

Has brown bakelite body, brass shell, and screw terminals.

Standard finish of exposed parts is brush brass which will be furnished when no finish is specified.

Carton, 10. Standard package, 100.

Weight per standard package, 16 lb.

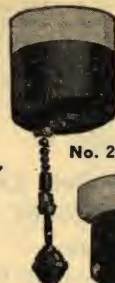
No. ....	2842
Per 100.....	\$98.00

Bryant Ceiling Type Pull Switches

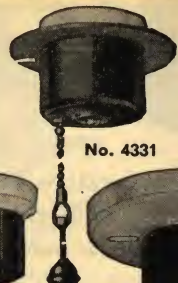
Listed as Standard by Underwriters' Laboratories



No. 2387



No. 2863



No. 4331



No. 2694



No. 2769

Switch supplied with short chain, connector, 8 feet of heavy cord, size 3/8, and large black composition ball.

With Porcelain Base—Bakelite Cover  
Non-Indicating

Diameter of base, 2 9/16 inches. Height over cover, 2 5/8 inches. Supporting screw spacing, 1 3/4 inches.

No.	Per 100	Description	AMPERES		Car- ton	Std. Pkg.	Std. Pkg.	Wt. Lb.
			125 Volts	250 Volts				
2387	\$190.00	Single-Pole, Solid....	10	5	10	30	16	
2309	190.00	Single-Pole, Slotted..	10	5	10	30	16	
2396	233.00	Double-Pole, Solid....	10	10	2	10	5 1/2	
2314	233.00	Double-Pole, Slotted..	10	10	2	10	5 1/2	
2388	233.00	3-Way, Solid.....	10	5	2	10	5 1/2	
2310	233.00	3-Way, Slotted.....	10	5	2	10	5 1/2	
2389	466.00	4-Way, Solid.....	5	2	2	10	5 1/2	
2311	466.00	4-Way, Slotted.....	5	2	2	10	5 1/2	

With Porcelain Base Flush with Bakelite Switch Cover  
3-Speed Motor Control, Operating 1, 2, 3, Off

Bakelite cover is mounted flush to the surface of the porcelain base on which switch mechanism is mounted.

Diameter of base, 2 1/4 inches. Diameter of cover, 2 1/4 inches. Height over cover, 2 1/2 inches.

Supporting screw spacing, 1 1/2 inches.								
2863	\$256.00	Solid.....	10	5	2	10	5	

With Bakelite Switch Cover  
Cadmium Finish Metal Box Covers  
Non-Indicating  
For 3/4-Inch Outlet Boxes

Diameter of cover, 3 1/2 inches. Height of cover, 1 21/32 inches. Screw spacing, 2 1/4 inches. Porcelain base, 2 1/4 inches in diameter, extends 3/16 inch below box cover.

4331	\$198.00	Single-Pole.....	10	5	10	30	18	
4336	227.00	Single-Pole.....	20	10	2	10	7	
4332	227.00	Double Pole.....	10	10	2	10	6	
4333	256.00	3-Way.....	10	5	2	10	6	
4334	478.00	4-Way.....	5	2	2	10	6	

For 4-Inch Outlet Boxes

Diameter of cover, 4 3/8 inches. Height of cover, 1 21/32 inches. Screw spacing, 3 1/2 inches. Porcelain base, 2 1/4 inches in diameter, extends 3/16 inch below box cover.

4341	\$204.00	Single-Pole.....	10	5	10	30	23	
4346	233.00	Single-Pole.....	20	10	2	10	8	
4342	233.00	Double-Pole.....	10	10	2	10	8	
4343	262.00	3-Way.....	10	5	2	10	6	
4344	484.00	4-Way.....	5	2	2	10	8	

With Porcelain Base—Bakelite Cover  
For Conduit Fittings

Fits No. 500 adaptiboxes, Nos. GN, HM, and W (Forms 5 and 10) octagonal unilets, size 10 round opening pipe taplets.

Base diameter, 2 7/8 in. Supporting screw spacing, 2 5/8 in.

2694	\$187.00	Single-Pole.....	10	5	10	20	12	
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On Porcelain Box Cover—Bakelite Switch Cover  
For 3/4 and 4-Inch Outlet Boxes

Diameter of base, 4 5/8 inches. Supporting screw spacings, 2 3/4 and 3 1/2 inches.

2769	\$233.00	Single-Pole.....	10	5	2	10	13	
2770	262.00	Double-Pole.....	10	10	2	10	13	

Switches furnished with metal covers when specified.



## Pendent Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

For kitchen lighting units which are placed out of reach. Takes any standard parallel or tandem blade attachment plug cap.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
H9081	\$72.00	10	50	9

## Hubbell Ceiling Pull Switches

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

With bakelite cover. Supplied with 8 feet of black cord.

Diameter of base, 2½ inches. Mounting screws spaced 1½ inches on centers.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb.
7650-BC	\$190.00	S.P., Slotted Base	10	30	18
7651-BC	190.00	S.P., Solid Base..	10	30	18
*7652-BC	233.00	D.P., Slotted Base	10	10	6
*7655-BC	233.00	D.P., Solid Base	10	10	6
7653-BC	233.00	3-Way, Slotted Base.	10	10	8
7654-BC	233.00	3-Way, Solid Base	10	10	8

No. 7651

\*In 10 amperes, 250 volts, only.

## No. 271 Hubbell Bakelite Cord Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

A single pole switch fitted with large head binding screws. Ample space is provided in wiring channels.

Carton, 10. Standard package, 50.

Weight per standard package, 6 pounds.

No. 271.....per 100 \$60.00

## Hubbell Battery Toggle Switches and Plates

10 Amperes, 24 Volts

Screw spacings, 1½ inches.  
Handle, ¾ inch.

May be furnished with luminous tipped handle at a slight additional charge.

No. 8051

No. 8071

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
8051	\$98.00	Single Pole.....	25	100	9
8053	164.00	3-Way.....	25	100	13
8071	80.00	Single Plate.....	25	100	3

## Hubbell Push Button Switches

One key is furnished with each lock type switch.

No.	Per 100	Description	AMPERES 125V. 250V.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
4401	\$60.00	S.P.....	10 5	10	100	32
4402	129.00	D.P.....	.. 10	10	50	19
4403	85.00	3-Way..	10 5	10	50	18
4404	364.00	4-Way..	5 2	10	10	5

## Lock Type

4401-L	\$138.00	S.P.....	10 5	10	100	32
4402-L	211.00	D.P.....	.. 10	10	50	19
4403-L	156.00	3-Way..	10 5	10	50	18
4404-L	446.00	4-Way..	5 2	10	10	5
4405	18.00	Key....	.. ..	20	100	1

No. 4401

## Hubbell Specification Grade Flush Toggle Switches

With T Rating on 125 Volts for Type C Lamp Loads

Enclosed Bakelite Base

With Bakelite Handle

This switch will fit 1½-inch switch boxes.  
Brown handle is standard.

If desired grounded, suffix letter G to number.

No.	Per 100	Description	AMPERES 125V. 250V.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
9801	\$93.00	S.P., Ind...	10 5	10	50	12
9802	151.00	D.P., Ind...	10 10	10	10	3
9803	116.00	3-Way.....	10 5	10	20	6
9933	174.00	3-Way.....	20 10	10	10	3
9804	373.00	4-Way.....	5 2	10	10	3
9805	152.00	S.P., Ind...	20 10	10	20	8
9806	175.00	D.P., Ind...	20 10	10	10	3

## With Ivoryine Handle

No.	Per 100	Description	AMPERES 125V. 250V.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
9801-I	\$97.00	S.P., Ind...	10 5	10	25	7
9802-I	155.00	D.P., Ind...	10 10	10	10	8
9803-I	120.00	3-Way....	10 5	10	10	7
9933-I	178.00	3-Way....	20 10	10	10	7
9804-I	377.00	4-Way....	5 2	10	10	6
9805-I	156.00	S.P., Ind...	20 10	10	10	7
9806-I	179.00	D.P., Ind...	20 10	10	10	8

## Locking Type

One No. 8965 key furnished with each switch.

No.	Per 100	Description	AMPERES 125V. 250V.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
9701	\$176.00	S.P.....	10 5	10	50	12
9702	234.00	D.P.....	10 10	10	10	3
9703	199.00	3-Way....	10 5	10	20	4
9613	257.00	3-Way....	20 10	10	10	3
9704	455.00	4-Way....	5 2	10	10	3
9705	234.00	S.P.....	20 10	10	20	8
9706	257.00	D.P.....	20 10	10	10	3
8965	19.00	Key.....	.. ..	100	2	

## Hubbell Standard Grade Flush Toggle Switches

Porcelain Base

With T Rating on 125 Volts for Type C Lamp Loads

With Bakelite Handle

Brown handle is standard.

If desired grounded, suffix letter G to number.

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
8801	\$48.00	S.P., Ind...	10 5	10	100	34
8941	98.00	S.P., Ind...	20 20	10	50	19
8942	140.00	D.P., Ind...	.. 20	10	20	13
8802	98.00	D.P., Ind...	10 10	10	50	19
8803	68.00	3-Way.....	10 5	10	50	19
8804	326.00	4-Way.....	5 2	10	10	5

## With Ivoryine Handle

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
8801-I	\$52.00	S.P., Ind...	10 5	10	50	19
8941-I	102.00	S.P., Ind...	20 20	10	10	6
8942-I	144.00	D.P., Ind...	.. 20	10	10	7
8802-I	102.00	D.P., Ind...	10 10	10	25	10
8803-I	72.00	3-Way...	10 5	10	25	10
8804-I	330.00	4-Way...	5 2	10	10	8

## Locking Type

For use with standard rectangular opening switch plates. One key furnished with each switch.

Brush brass standard finish on keyway. Regularly supplied grounded.

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
8961	\$121.00	S.P.....	10 5	10	100	34
8962	180.00	D.P.....	10 10	10	50	19
8963	145.00	3-Way....	10 5	10	50	18
8964	409.00	4-Way....	5 2	10	10	4
8965	19.00	Key.....	.. ..	100	2	

No. 8961



## Hubbell Sphinx Mercury Flush Toggle Switches

5 Amperes, 250 Volts; 5 Amperes, 125 Volts—T  
T Rating on 125 Volts Only, A.C. or D.C.

### Bakelite Base



No. 9711

This switch cannot be mounted horizontally; must be mounted vertically. "Top" on one support indicates correct mounting position.

The 3 and 4-way types cannot be used with Master Control or Emergency Systems of wiring where all lights are turned on by a master switch.

### With Bakelite Handle

No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
9711	\$96.00	S.P., Ind. ....	10	100	21
9712	152.00	D.P., Ind. ....	10	50	14
9713	150.00	3-Way .....	10	50	14
9714	374.00	4-Way .....	2	10	3

### With Ivorine Handle

No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
9711-I	\$106.00	S.P., Ind. ....	10	50	11
9712-I	162.00	D.P., Ind. ....	10	30	9
9713-I	160.00	3-Way .....	10	30	9
9714-I	385.00	4-Way .....	2	10	3

## Hubbell Heavy Duty Flush Toggle Switches

With T Rating on 125 Volts for Type C Lamp Loads

### Bakelite Base



No. 2971



No. 2971-L

Length,  $2\frac{3}{4}$  inches. Width,  $1\frac{1}{16}$  inches. Depth,  $1\frac{1}{32}$  inches.  
One key furnished with each locking switch.

Bakelite Handle		Lock Type		Description	AMPERES		Car- ton	Std. Pkg.	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		125	250			
2971	\$152.00	2971-L	\$234.00	Single Pole.	20	20	10	30	20
2972	199.00	2972-L	281.00	Double Pole	20	20	2	10	6
2973	175.00	2973-L	257.00	3-Way .....	20	20	2	10	6
2974	524.00	2974-L	607.00	4-Way .....	20	10	2	10	4
2923	187.00	2923-L	269.00	Single Pole.	30	30	10	30	20
2924	268.00	2924-L	351.00	Double Pole	30	30	2	10	6
2925	233.00	2925-L	316.00	3-Way .....	30	30	2	10	6
2926	699.00	2926-L	782.00	4-Way .....	20	10	2	10	4
.....	.....	2308	17.60	Key .....	..	..	10	100	2

## Hubbell Acorn Switches

Acorn switches are designed to meet competition and are priced accordingly. Not to be confused with the regular line of Hubbell switches listed elsewhere.

### Flush Toggle Switches

With Bakelite Handles—10 Amperes, 125 Volts;  
5 Amperes 250 Volts



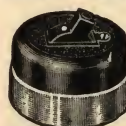
No. 9891



No. 9893

Porcelain base and wide plaster ears.

No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
9891	\$30.00	Single Pole, Ind., Brown .....	10	100	26
9891-I	34.00	Single Pole, Ind., Ivorine .....	10	50	14
9893	38.00	3-Way, Brown .....	10	50	15
9893-I	42.00	3-Way, Ivorine .....	10	25	8



No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
4442	\$36.00	Single Pole, Slotted Base .....	10	50	10
4443	36.00	Single Pole, Solid Base .....	10	50	10
4444	46.00	3-Way, Slotted Base .....	10	50	10
4445	46.00	3-Way, Solid Base .....	10	50	10

### Surface Toggle Switches

With Bakelite Covers

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Diameter of base, 2 inches. Screw spacings  
on centers,  $1\frac{1}{16}$  inches.

### With Bakelite Covers—For Outlet Boxes

Single Pole: 6 Amperes, 125 Volts;  
3 Amperes, 250 Volts

3-Way: 5 Amperes, 125 Volts;  
2 Amperes, 250 Volts



No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
4431	\$52.00	Single Pole, For $3\frac{1}{4}$ -Inch Box ..	10	50	26
4433	60.00	3-Way, For $3\frac{1}{4}$ -Inch Box .....	10	50	26
4451	58.00	Single Pole, For 4-Inch Box .....	10	50	34
4453	66.00	3-Way, For 4-Inch Box .....	10	50	30

## Hubbell Bakelite Flush Toggle Switches

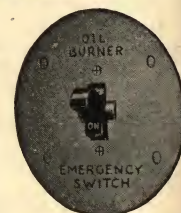
### Residential Type

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

For  $3\frac{1}{4}$  and 4-Inch Outlet Boxes



No. 7441



No. 9668

No.	Per 100	Description	Car- ton	Std. Pkg.	Pkg. Wt. Lb.
7441	\$42.00	S.P., $3\frac{1}{4}$ -Inch Cover .....	10	50	21
7443	52.00	3-Way, $3\frac{1}{4}$ -Inch Cover .....	10	50	21
7451	47.00	S.P., 4-Inch Cover .....	10	50	25
7453	57.00	3-Way, 4-Inch Cover .....	10	50	25
7444	52.00	S.P. Oil Burner Switch on $3\frac{1}{4}$ -Inch Red Cover .....	10	50	18
7445	42.00	S.P. Oil Burner Switch on 4-Inch Red Cover .....	10	50	25



### Hubbell Outdoor Weatherproof Flush Switches



No. 7981



No. 7991

Mechanism is protected from moisture, weather, or atmospheric conditions. Switch is operated with a lever pointing to On and Off indications stamped on the plate.

A cadmium finish brass plate fits over a rubber mat to make it watertight. Number includes plate and rubber mat.

No.	Per 100	Description	AMPERES 125V.T. 250V.		Car- ton	Std. Pkg.	Wt. Lb.
7981	\$197.00	Single Pole.....	10	5	2	10	7
7982	250.00	Double Pole.....	10	10	2	10	7
7983	220.00	3-Way.....	10	5	2	10	7
7984	479.00	4-Way.....	5	2	2	5	4

#### For FS Type Fittings

Same as the switches above, except furnished with cadmium finished steel plate with rounded edges, for FS Type fittings.

No.	Per 100	Description	AMPERES 125V.T. 250V.		Car- ton	Std. Pkg.	Wt. Lb.
7991	\$221.00	Single Pole.....	10	5	2	10	7
7992	274.00	Double Pole.....	10	10	2	10	7
7993	244.00	3-Way.....	10	5	2	10	7
7994	503.00	4-Way.....	5	2	2	5	4

### Hubbell Door Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Length of box,  $3\frac{5}{8}$  inches; width,  $1\frac{1}{4}$  inches; depth,  $2\frac{5}{8}$  inches. Has one  $\frac{5}{8}$ -inch knockout in bottom, one  $\frac{5}{8}$ -inch knockout in one end, and one  $\frac{1}{8}$ -inch knockout in other end.

#### Self-Restoring—with Box—Single Pole

Packed 1 in a carton.

No.	Per 100	Description	Std. Wt. Pkg. Lb.
2355	\$410.00	*Switch On.....	25 31
2356	410.00	*Switch Off.....	10 12

\*When door is open.

No. 2355

#### Small Door—Porcelain Lined Steel Box



No. 2022

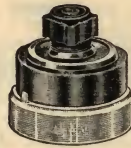


No. 2035

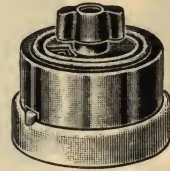
Plate size,  $3\frac{3}{4} \times 1\frac{1}{4}$  inches. Hole required: width,  $1\frac{1}{16}$  inches; length,  $2\frac{3}{8}$  inches; and depth,  $1\frac{1}{2}$  inches.

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
2022	\$370.00	Switch On When Door is Open..	5	25	14
2023	370.00	Switch Off When Door is Closed	2	10	6
2035	68.00	Steel Box for Nos. 2022 & 2023..	5	25	16

### Hubbell Surface Snap Switches With Polished Nickel Covers



No. 9512



No. 9527

#### Single Pole

Pony Size—5 Amperes, 125 Volts; 3 Amperes, 250 Volts

Diameter of base, 2 inches. Screws spaced  $1\frac{1}{2}$  inches.

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
9510	\$60.00	Slotted.....	10	100	23
9511	70.00	Slotted, Ind.....	10	100	23
9512	60.00	Solid.....	10	100	23
9513	70.00	Solid, Ind.....	10	100	23

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Diameter of base,  $2\frac{1}{2}$  inches. Screws spaced  $1\frac{3}{4}$  inches.

9515	\$98.00	Slotted, Ind.....	10	100	42
9517	98.00	Solid, Ind.....	10	100	42

#### Three-Way

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Diameter of base,  $2\frac{1}{8}$  inches. Screws spaced  $1\frac{1}{16}$  inches.

9330	\$80.00	Slotted.....	10	100	25
9331	80.00	Solid.....	10	100	25

#### Double Pole

5 Amperes, 250 Volts

Diameter of base,  $2\frac{1}{8}$  inches. Screws spaced  $1\frac{1}{16}$  inches.

9521	\$121.00	Slotted, Ind.....	10	100	35
9523	121.00	Solid, Ind.....	10	100	35

10 Amperes, 250 Volts

Diameter of base,  $2\frac{1}{2}$  inches. Screws spaced  $1\frac{3}{4}$  inches.

9525	\$140.00	Slotted, Ind.....	10	100	42
9527	140.00	Solid, Ind.....	10	100	42

#### Four-Way

5 Amperes, 125 Volts; 2 Amperes, 250 Volts

Diameter of base,  $2\frac{1}{2}$  inches. Screws spaced  $1\frac{3}{4}$  inches.

9540	\$297.00	Slotted.....	10	30	12
9541	297.00	Solid.....	10	30	12

### Hubbell Toggle Appliance Switches

#### Single Pole



Nos. 8745 and 8659



Nos. 8650 and 8657

Diameter of neck,  $\frac{1}{2}$  inch. Diameter of switch base,  $1\frac{1}{4}$  inches.

Standard finishes are brush brass or polished nickel.

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
*8650	\$68.00	With $\frac{1}{64}$ -Inch Neck.....	10	50	4
*8656	82.00	With $\frac{1}{2}$ -Inch Neck.....	10	50	4
8745	73.00	With $\frac{1}{64}$ -Inch Neck, Ind.....	10	50	4
*8746	90.00	With $\frac{1}{2}$ -Inch Neck, Ind.....	10	50	5

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
8657	\$85.00	With $\frac{1}{64}$ -Inch Neck.....	10	50	4
8658	95.00	With $\frac{1}{2}$ -Inch Neck.....	10	50	4
8659	90.00	With $\frac{1}{64}$ -Inch Neck, Ind.....	10	50	4
8660	115.00	With $\frac{1}{2}$ -Inch Neck, Ind.....	10	50	5

\*Can be supplied with luminous tip on handle at an addition of \$40.00 per 100 units.



## Hubbell Surface Toggle Switches



With Black Bakelite  
Covers

Carton, 10.  
Standard package, 100.

No.	Per 100	Description	Amperes 125V. 250V.	Diam. Base In.	Screw Hole Spacing In.	Pkg. Wt. Lb.
No. 9073						
9061	\$55.00	S.P., Solid.....	6	3	2 1/16	23
9063	79.00	3-Way Solid.....	5	2	2 1/8	27
9072	55.00	S.P., Slotted.....	6	3	2 1/16	22
9074	79.00	3-Way, Slotted.....	5	2	2 1/8	24

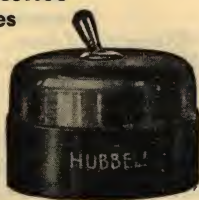
## With Black Bakelite Covers—For Outlet Boxes

Outlet box covers are cadmium finished.  
Carton, 5. Standard package, 50.

No.	Per 100	Description	Amperes 125V. 250V.	Diam. Base In.	Screw Hole Spacing In.	Pkg. Wt. Lb.
No. 9068	\$76.00	S.P., 3/4-Inch Boxes....	6	3	3 1/16	25
9069	82.00	S.P., 4-Inch Boxes.....	6	3	4 1/16	30
9070	87.00	3-Way, 3/4-Inch Boxes..	5	2	3 1/16	25
9071	91.00	3-Way, 4-Inch Boxes...	5	2	4 1/16	30

Hubbell Toggle Switches  
With Metal Handles

No. 8171



No. 8112

Black porcelain base. Screw holes are elongated.  
Brush brass and nickel plate are standard finishes.

## With 2 1/4-Inch O.D. Base

Screw spacings, 1 1/2 to 1 3/4 inches.

No.	Per 100	Description	Amperes 125V. 250V.	Car- ton	Std. Pkg.	Wt. Lb.
8171	\$80.00	S.P., Solid.....	5	3	10	37
8191	80.00	S.P., Slotted.....	5	3	10	37
8421	100.00	S.P., Solid.....	10	5	10	37
8431	100.00	S.P., Slotted.....	10	5	10	37
8173	120.00	3-Way, Solid.....	5	3	10	37
8193	120.00	3-Way, Slotted.....	5	3	10	37

## With 2 5/8-Inch O.D. Base

Screw spacings, 1 1/2 to 1 3/4 inches.

No.	Per 100	Description	Amperes 125V. 250V.	Car- ton	Std. Pkg.	Wt. Lb.
8112	\$200.00	D.P., Solid.....	..	10	10	57
8162	200.00	D.P., Slotted.....	..	10	10	58
8153	240.00	3-Way, Solid.....	10	5	10	50
8233	240.00	3-Way, Slotted.....	10	5	10	28

## SWITCHES

## WITH T RATING

Switches having the letter T as part of the rating are capable of controlling tungsten filament gas filled lamp loads corresponding to the 125-volt ampere rating of switches. For 5-ampere this means 625 watts, for 10-ampere, 1250 watts, for 20-ampere, 2500 watts and for 30-ampere, 3750 watts.

## H &amp; H Flush Tumbler Switches

1-Inch Porcelain Base  
With Composition Handles  
T Rating 125 Volts Only



No. 8601

No.	Per 100	Description	—AMPERES— 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
8601	\$48.00	Single Pole.....	10T	5	10	23
8914	98.00	Single Pole.....	20T	10	10	20
8602	98.00	Double Pole.....	10T	10	10	20
8931	140.00	Double Pole.....	20T	20	2	10
8603	68.00	Three-Way.....	10T	5	10	20
8913	128.00	Three-Way.....	20	10	2	10
8604	326.00	Four-Way.....	5T	2	2	10
8625	159.00	2-Circuit Electrolier..	10T	5	2	10
8324	159.00	3-Circuit Electrolier..	10T	5	2	10
8660	248.00	Double Pole, D.T....	10	5	10	20



No. 8601-I

H & H Flush Tumbler Switches  
1-Inch Porcelain Base

With Ivorylite Handles  
T Rating 125 Volts Only

Ivorylite is a white, cream tinted material. The color is solid, moulded throughout. It is not a finish and will not chip, flake or wear off. Attractive in appearance, permanent and serviceable.

No.	Per 100	Description	—AMPERES— 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
8601-I	\$52.00	Single Pole.....	10T	5	10	16
8914-I	108.00	Single Pole.....	20T	10	2	10
8602-I	102.00	Double Pole.....	10T	10	10	25
8931-I	144.00	Double Pole.....	20T	20	2	10
8603-I	72.00	Three-Way.....	10T	5	10	25
8913-I	138.00	Three-Way.....	20	10	2	10
8604-I	330.00	Four-Way.....	5T	2	2	10

## H &amp; H Flush Tumbler Switches

## 1-Inch Composition Base

With Composition Handles  
T Rating 125 Volts Only



No. 1611

No.	Per 100	Description	—AMPERES— 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
1611	\$93.00	Single Pole.....	10T	5	10	50
3933	151.00	Single Pole.....	20T	20	10	20
1612	151.00	Double Pole.....	10T	10	2	10
3939	174.00	Double Pole.....	20T	20	2	10
1613	116.00	Three-Way.....	10T	5	10	20
8916	174.00	Three-Way.....	20	10	2	10
1614	373.00	Four-Way.....	5T	2	2	10

## H &amp; H Flush Tumbler Switches

## Residential Type

With Composition Handles  
10 Amperes, 125 Volts  
5 Amperes, 250 Volts



No. 1881

Completely enclosed mechanism in small bakelite base, 1 inch deep, 1 1/2 inches long, 3/8 inch wide, allowing generous wiring room in any switch box. Large binding screws accommodate heavy wire.

Fits standard tumbler plates.

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
1881	\$34.00	Single Pole, Bakelite.....	10	100	15
1881-I	38.00	Single Pole, Ivorylite....	10	100	15
1883	44.00	Three-Way, Bakelite.....	10	50	8
1883-I	48.00	Three-Way, Ivorylite....	10	50	8



### H & H Type C Tumbler Switches For Type C Tungsten Lamps T Rating 125 Volts Only 10 Amperes, 1½-Inch Bakelite Base With Composition Handles



No. 1531



No. 1532

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
1531	\$93.00	Single Pole.....	10T	5	10	16
1532	151.00	Double Pole.....	10T	10	2	4
1533	116.00	Three-Way.....	10T	5	10	8
1534	373.00	Four-Way.....	5T	2	2	4

### 10 Amperes, 1½-Inch Bakelite Base With Ivorylite Handles



No. 1531-I



No. 1532-I

1531-I	\$97.00	Single Pole.....	10T	5	10	25	10
1532-I	155.00	Double Pole.....	10T	10	2	10	4
1533-I	120.00	Three-Way.....	10T	5	2	10	4
1534-I	377.00	Four-Way.....	5T	2	2	10	4

### 1½-Inch Bakelite Base, 20 Amperes

1541	\$152.00	Single Pole.....	20T	20	10	30	12
1542	175.00	Double Pole.....	20T	10	2	10	4
1543	175.00	Three-Way.....	20T	20	2	10	4
1544	374.00	Four-Way.....	5T	2	2	10	4
1545	175.00	S.P. Quad. Break....	20T	20	2	10	4



No. 1542-I

### 20 Amperes, 1½-Inch Bakelite Base

With Ivorylite Handles

1541-I	\$163.00	Single Pole.....	20T	20	10	30	12
1542-I	186.00	Double Pole.....	20T	10	2	10	4
1543-I	186.00	Three-Way.....	20T	20	2	10	4
1544-I	385.00	Four-Way.....	5T	2	2	10	4
1545-I	186.00	S.P. Quad. Break....	20T	20	2	10	4

### 2-Inch Bakelite Base, 20 Amperes


4281	\$138.00	Single Pole.....	20T	20	10	30	12
4282	180.50	Double Pole.....	20T	20	2	10	4
4283	159.00	Three-Way.....	20T	20	2	10	4
4286	477.00	Four-Way.....	20T	10	2	10	4
4284	159.00	S.P. Quad. Break....	20T	20	2	10	4



No. 4272

### 30 Amperes, 2-Inch Bakelite Base

With Composition Handles

		Main Component Wires						
<b>T</b>								
No. 4272								
4271	\$187.00	Single Pole.....	30T	30	10	30	13	
4272	268.00	Double Pole.....	30T	30	2	10	4	
4273	233.00	Three-Way.....	30T	30	2	10	4	
4274	699.00	Four-Way.....	20T	10	2	10	4	
4275	233.00	S.P. Quad. Break....	30T	30	2	10	4	

These switches take standard tumbler plates, brass or bakelite.

### H & H Flush Tumbler Switches

#### Timesaver Switches Bakelite Base

T Rating 125 Volts Only

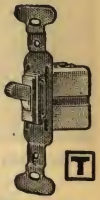
Designed for Type C lamp loads. Fit standard boxes and take standard plates.

Base is ⅞ inch deep, ½ inch wide and 1¼ inches long.

Can be supplied on order, mounted on ¾ or 4-inch outlet box cover, at slight additional charge.



No. TL-1



No. TL-1-I

#### Brown

No.	Per 100	Description	AMPERES AT 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
TL-1	\$48.00	Single-Pole.....	10T	5	10	18
TL-2	98.00	Double-Pole.....	10T	10	10	10
TL-3	68.00	Three-Way.....	10T	5	10	9
TL-4	200.00	Four-Way.....	5T	2	2	2

#### Ivorylite

TL-1-I	\$52.00	Single Pole.....	10T	5	10	50	9
TL-2-I	102.00	Double-Pole.....	10T	10	2	10	2
TL-3-I	72.00	Three-Way.....	10T	5	10	30	5
TL-4-I	204.00	Four-Way.....	5T	2	2	10	2



No. TL-1 Lock



No. 7908

#### Lock Style Single Switches

T Rating 125 Volts Only

Keyhole is flush with the plate. Attractive appearance which harmonizes with the lever style.

Fits standard tumbler plates.



No. TL-1 Lock

#### Brown

No.	Per 100	Description	AMPERES AT 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
TL-1-Lock	\$121.00	Single Pole....	10T	5	10	18
TL-2-Lock	181.00	Double Pole...	10T	10	10	10
TL-3-Lock	146.00	Three-Way....	10T	5	10	9
TL-4-Lock	281.00	Four-Way.....	5T	2	2	2

#### Ivorylite

TL-1-I Lock	\$128.00	Single Pole...	10T	5	10	50	9
TL-2-I Lock	188.00	Double Pole..	10T	10	2	10	2
TL-3-I Lock	153.00	Three-Way...	10T	5	10	30	5
TL-4-I Lock	288.00	Four-Way....	5T	2	2	10	2
7908	17.00	Key.....	...	1	1	1	oz.

### H & H Sphinx Flush Tumbler Switches

#### Silent, Mercury Break

5 Amperes, 250 Volts, A.C. or D.C.  
5 Amperes, 125 Volts, T, A.C. or D.C.  
T Rating 125 Volts Only  
(All Switches Carry This Rating)

This switch fits standard switch boxes and must be installed vertically. Top stamped on mounting ears shows the correct position.



No. 821



No. 822

#### With Brown Handles

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
821	\$96.00	Single Pole.....	10	100	21
822	152.00	Double Pole.....	10	50	14
823	150.00	Three-Way.....	10	50	14
824	374.00	Four-Way.....	2	10	4

#### With Ivorylite Handles

With Ivoryite Handles					
821-I	\$106.00	Single Pole.....	10	50	11
822-I	162.80	Double Pole.....	10	30	9
823-I	160.00	Three-Way.....	10	30	9
824-I	385.00	Four-Way.....	2	10	4





### H & H Weatherproof Switches For Outlet Boxes or Wall Cases T Rating 125 Volts Only

For installations exposed to weather, dampness and special atmospheric conditions as on porches, garages, patios, industrial plants and other exposed locations.

Switch is operated with a lever pointing to On and Off positions.

Each switch includes a brass plate, cadmium finished, and a weatherproof mat.

No. 7981

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
7981	\$197.00	Single Pole.....	10T 5	2	10	7
7865	256.00	Single Pole....	20T 10	2	10	7
7982	250.00	Double Pole...	10T 10	2	10	7
7866	292.00	Double Pole...	20T 20	2	10	7
7983	220.00	Three-Way....	10T 5	2	10	7
7867	285.00	Three-Way....	20 10	2	10	7
7984	479.00	Four-Way.....	5T 2	2	5	4

### H & H Door Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts



Nos. 6550 and 2022 are made so that light is on when door is open; No. 2023 so light is on when door is closed.

No. 6550 is rectangular in shape, mounted in a porcelain base, and fits all standard door switch boxes.

Nos. 2022 and 2023 are mounted in a steel box, porcelain lined.

No. 6550



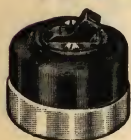
No. 2022

No.	Per 100	Plate Dim. Inches	HOLE REQUIRED, IN.— Width Length Depth	Car- ton	Std. Pkg.	Wt. Lb.
6550	\$370.00	4 5/8 x 1 1/4	1 1/16 3 3/8 1 5/8	5	25	15
2022	370.00	3 3/4 x 1 1/4	1 1/16 2 3/8 1 1/2	5	25	14
2023	370.00	3 3/4 x 1 1/4	1 1/16 2 3/8 1 1/2	2	10	6

### H & H Surface Tumbler Switches

With Bakelite Cover

Single Pole, 6 Amperes, 125 Volts; 3 Amperes, 250 Volts  
Three-Way, 5 Amperes, 125 Volts; 2 Amperes, 250 Volts



No. 611-BC

Base diameter of single pole, 2 inches;  
three-way, 2 1/2 inches.

Screw hole spacing, 1 1/16 inches.

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
611-BC	\$55.00	Single Pole, Slotted.....	10	100	22
613-BC	79.00	Three-Way, Slotted.....	10	100	24
6089-BC	274.00	*Single Pole, Slotted.....	10	30	13
6090-BC	248.50	*Single Pole, Closed.....	10	30	13
8490-BC	274.00	Double Pole, Slotted.....	10	30	13
8485-BC	248.50	Double Pole, Closed.....	10	30	13

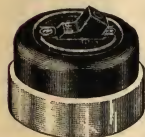
\*Quadruple break.

### H&H Surface Tumbler Switches

With Bakelite Cover

Single Pole, 3-Way, 4-Way, 10 Amperes,  
125 Volts; 5 Amperes, 250 Volts  
Double Pole, 10 Amperes, 250 Volts

Base diameter, 2 1/2 inches. Screw hole  
spacing, 1 3/4 inches.



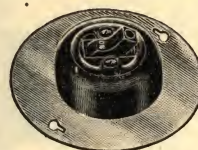
No. 8472-BC

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
8472-BC	\$98.00	Single Pole, Slotted.....	10	100	41
8476-BC	140.00	Three-Way, Slotted.....	10	50	22
8474-BC	140.00	Double Pole, Slotted.....	10	100	44
8478-BC	345.00	Four-Way, Slotted.....	2	10	5

### H & H Surface Tumbler Switches Pony Type For Outlet Boxes

With Bakelite Switch Cover

Single Pole, 6 Amperes, 125 Volts; 3 Amperes, 250 Volts  
Three-Way, 5 Amperes, 125 Volts; 2 Amperes, 250 Volts



No. 6065-BC

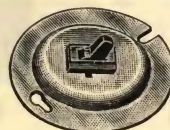
No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
6064-BC	\$76.00	Single Pole, 3 1/4-In. Cover....	5	50	23
6065-BC	82.00	Single Pole, 4-In. Cover.....	5	50	29
6068-BC	87.00	Three-Way, 3 1/4-In. Cover....	5	50	23
6069-BC	91.00	Three-Way, 4-In. Cover.....	5	50	30

### H & H Surface Tumbler Switches

For Outlet Boxes

With Cadmium Finish Outlet Box Cover

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



No. 4411

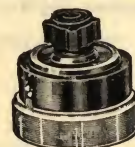
No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
4411	\$42.00	Single Pole, 3 1/4-In. Cover.....	10	50	18
4412	47.00	Single Pole, 4-In. Cover.....	10	50	25
4413	52.00	Three-Way, 3 1/4-In. Cover.....	10	50	19
4414	57.00	Three-Way, 4-In. Cover.....	10	50	26

### H & H Surface Snap Switches

Nickel Finish, Metal Cover

Pony Size

5 Amperes, 125 Volts; 3 Amperes, 250 Volts



### Single Pole, Indicating Cover

No.	Per 100	Description	AMPERES 125V. 250V. In.	Base Diam. In.	Screw Spacing In.	Car- ton	Std. Pkg.	Wt. Lb.
320	\$66.00	Slotted.....	5	3 2 1/8	1 7/16	10	100	25
220	66.00	Closed.....	5	3 2 1/8	1 7/16	10	100	26
321	98.00	Slotted.....	10	5 2 1 5/32	1 3/4	10	100	39
221	98.00	Closed.....	10	5 2 1 5/32	1 3/4	10	100	39
2986	138.00	*Slotted.....	10	2 1 5/32	1 3/4	10	100	42
2985	138.00	*Closed.....	10	2 1 5/32	1 3/4	10	100	42
331	182.00	Slotted.....	20	3 3 1/16	2 5/32	2	10	7
643	274.00	Slotted.....	30	3 3 3/8	2 5/16	2	10	11

### Double Pole

2086	\$102.00	Slotted, Non-Ind..	5	2 1/8	1 7/16	10	100	23
2088	121.00	Slotted, Ind.....	5	2 1/8	1 7/16	10	100	30
2085	102.00	Closed, Non-Ind..	5	2 1/8	1 7/16	10	100	23
2087	121.00	Closed, Ind.....	5	2 1/8	1 7/16	10	100	30
322	140.00	Slotted, Ind.....	10	2 1 5/32	1 3/4	10	100	43
222	140.00	Closed, Ind.....	10	2 1 5/32	1 3/4	10	100	43
532	273.00	Slotted, Ind.....	20	3 3 1/16	2 5/32	2	30	26
647	326.00	Slotted, Ind.....	30	3 3 3/8	2 5/16	2	30	33

### Three-Way

2090	\$94.00	Slotted.....	5	3 2 1/8	1 7/16	10	100	30
123	140.00	Slotted.....	10	5 2 1 5/32	1 3/4	10	50	21
133	273.00	Slotted.....	20	3 3 1/16	2 5/32	2	10	8

\*Quadruple break.



**H & H Canopy Switches****Bakelite—Pull**

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Current carrying parts are enclosed in a bakelite compartment, separated and insulated from all other metal parts.



No. 7743



No. 7745

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7743	\$86.00	7-Inch Chain, 1/4-Inch Stem....	10	100	12
7745	86.00	Short Chain, 6' Cord, 1/4" Stem.	10	100	13
7746	86.00	Short Chain, 6' Cord, 3/8" Stem.	10	100	13
7716	86.00	Short Chain, 6' Cord, 5/8" Stem.	10	100	13

**Rotary—With Removable Metal Handles**

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Has 6 inches of No. 18 stranded fixture wire. Wires up to and including 8 inches supplied without extra charge. Switches with longer wires supplied on special order at an advance in price. Standard finish on exposed metal is brass, but wash nickel, bronze or black supplied without extra charge when specified.



No. 7775

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7775	\$22.00	3/16-Inch Stem.....	25	100	4
7776	22.00	5/16-Inch Stem.....	25	100	4
7777	22.00	7/16-Inch Stem.....	25	100	4

**H & H Feed Through Cord Switches****Pony Size**

No. 530



No. 630



No. 1521



No. 541

**Single Pole**

No.	Per 100	Description	AMPERES 125 250 V. V.	Car-ton	Std. Wt. Pkg. Lb.
530	\$41.50	9/32" (.281") Brown Bakelite..	3 1	10	50 3
530-I	51.50	9/32" (.281") Ivorylite.....	3 1	10	50 3
630	32.00	13/32" (.406") Composition...	6 3	10	50 9
1521	46.00	9/32" (.281") Black Bakelite..	6 3	10	50 4

**Three Heat**

541	\$80.00	5/16" (.312") Black Bakelite..	3 1	10	50 6
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**H & H Feed Through Cord Switches****Black Bakelite**

No. 6837 Double Pole, 10 Amperes, 250 Volts  
No. 730 Single Pole, 10 Amperes, 125 Volts;  
5 Amperes, 250 Volts



No. 6837



No. 730

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
6837	\$128.00	1 1/32-Inch (.406-Inch).....	10	50 8
730	42.50	1 1/32-Inch (.406-Inch).....	10	50 5

**No. 1554 H & H Porcelain Sub-Bases**

For cleat, concealed and molding work. For 5 and 10-ampere switches. Screw hole spacing, 1 1/2 inches to 1 3/4 inches.

Standard package, 100; carton, 10.

Weight per standard package, 26 pounds.

No. 1554.....per 100 \$12.00

**H & H Brass Shell Pendent Switches**

6 Amperes, 125 Volts; 3 Amperes, 250 Volts



No. 2532



No. 2532-CG

Nos. 2531 and 3672 have pendent cap and 1 1/2-inch composition bushed cord hole; cord hole size, .406-inch.

No. 2532-CG has cord-grip cap; cord hole size, 1/4 to 3/8-inch (.250 to .375-inch). Standard finish, brush brass.

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
2532	\$95.00	Bottom Buttons.....	10	100 26
2532-CG	117.00	Bottom Buttons.....	10	50 14

**H & H Ceiling Pull Switches****Bakelite Cover**

Base diameter, 2 1/2 inches; screw hole spacing, 1 1/2 inches.



No. 3741-BC

No.	Per 100	Description	AMPERES 125 250 Volts Volts	Car-ton	Std. Wt. Pkg. Lb.
3742-BC	\$190.00	Single Pole, Slotted.	10 5	10	30 18
3741-BC	170.00	Single Pole, Closed.	10 5	10	30 18
3744-BC	233.00	Double Pole, Slotted	.. 10	2	10 7
3743-BC	196.50	Double Pole, Closed	.. 10	2	10 7
3746-BC	233.00	3-Way, Slotted.....	10 5	2	10 7
3745-BC	212.00	3-Way, Closed.....	10 5	2	10 7
4060-BC	466.00	4-Way, Closed.....	10 5	2	10 7
3747-BC	256.00	2-Circuit, Closed....	10 5	2	10 7
3749-BC	256.00	3-Circuit, Closed....	10 5	2	10 7

**H & H Back Wired Ceiling Pull Switches**

Without Outlet Box Cover and Bakelite

**Switch Cover****Single Pole**

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



No. 5020-BCW

Easy to wire, no switch covers to remove. Wires connect to contacts on back of base and fasten to box.

An 8-foot heavy black cord is standard.

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
5020-BCW	\$209.00	For 3 1/4-Inch Outlet Box..	10	30 22
5026-BCW	215.00	For 4-Inch Outlet Box....	10	30 25

**H & H Type C Ceiling Pull Switches****Bakelite Cover—Closed Base**

20T Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 3731

Base diameter, 2 1/16 inches. Screw holes 1 1/2 to 1 3/4 inches center to center.

This switch can be supplied in wall pull type with a side cord outlet if desired. Add letter S to number for this type of switch.

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
3731	\$270.00	Single Pole.....	2	10 9
3732	318.00	Double Pole.....	2	10 9
3733	318.00	Three-Way.....	2	10 9
3734	478.00	D.P., D.T., 2 Off Positions....	2	10 9



## P&S Specification Type Flush Tumbler Switches

All Bakelite—Totally Enclosed  
T Rating for Type C Lamp Load

The mechanism is fully enclosed in a dustproof bakelite housing. Made to fit rectangular opening brass or bakelite plates.



Meets all requirements for specification work or all-purpose wiring.

Small size allows ample room in box for wiring and splicing.

Size for single-pole and 3-way bodies,  $1\frac{3}{8} \times \frac{29}{32} \times 1\frac{1}{16}$  inches; double-pole and 4-way bodies,  $1\frac{1}{2} \times \frac{7}{8} \times 1\frac{1}{2}$  inches.

One No. 1499 key is furnished with each lock switch.

For special appliance application, 15-ampere switch can be furnished. Prices and complete information on request.

No.	Per 100	Description	Brown		Carton	Std. Pkg.	Wt. Lb.
			(AMPERES—125V. 250V.)				
*1815D	\$48.00	Single Pole.....	10T	5	10	100	20
*1825D	98.00	Double Pole.....	10	10	10	50	13
1835D	68.00	Three-Way.....	10T	5	10	50	13
1844D	200.00	Four-Way.....	5T	2	2	10	4
<b>Ivory</b>							
1915D	\$52.00	Single Pole.....	10T	5	10	50	11
1925D	102.00	Double Pole.....	10	10	2	10	4
1935D	72.00	Three-Way.....	10T	5	10	30	7
1944D	204.00	Four-Way.....	5T	2	2	10	4
<b>Lock Type</b>							
1815DL	\$121.00	Single Pole.....	10T	5	10	100	20
1825DL	181.00	Double Pole.....	10	10	10	50	13
1835DL	146.00	Three-Way.....	10T	5	10	50	13
1844DL	281.00	Four-Way.....	5T	2	2	10	4
1498	18.00	†Key.....			1	1	$\frac{1}{16}$
1499	18.00	†Key.....			1	1	$\frac{1}{16}$

\*Indicating type. †For Nos. 1814DL and 1835DL. †For Nos. 1825DL and 1844DL.

## P&S Tumbler Flush Switches With Porcelain Cups

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



Dimensions: length,  $1\frac{1}{16}$  inches; width,  $1\frac{1}{2}$  inches; depth,  $1\frac{1}{16}$  inches.

Supporting screw spacing,  $3\frac{3}{32}$  inches.

\*Indicating type.

No.	Per 100	Description	Brown		Carton	Std. Pkg.	Wt. Lb.
*4301	\$24.00	Single Pole.....	10	100	23		
4303	32.00	Three-Way.....	10	50	13		
<b>Ivory</b>							
4301I	\$28.00	Single Pole.....	10	100	23		
4303I	36.00	Three-Way.....	10	50	13		

## No. 1871 P&S Residential Type Flush Tumbler Switches

10 Amperes, 125 Volts—5 Amperes, 250 Volts

All bakelite, totally enclosed.

Body dimensions: length,  $1\frac{5}{8}$  inches; width,  $\frac{7}{8}$  inches; depth, 1 inch.

Weight of standard package 14 pounds.

No.	Per 100	Description	Brown		Carton	Std. Pkg.	Wt. Lb.
1871	\$34.00	Single-Pole.....	10	100			
1873	44.00	Three-Way.....	10	50			
<b>Ivory</b>							
1971	\$38.00	Single-Pole.....	10	100			
1973	48.00	Three-Way.....	10	50			

## Levolier Conduit Box and Fixture Switches Thin Model

6 Amperes, 125 Volts—3 Amperes, 250 Volts



No. 41

No. 39

No. 39 is the same as No. 41 with the addition of a link. This adapts it for use in any chain fixture—simply remove the top link immediately below canopy ring in the chain, and substitute No. 39 Switch. Eliminates the expense of rewiring.

Equipped with 7-foot cord, with bell at end, or plain lever control.

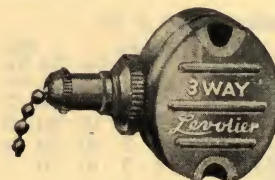
Standard finishes are brush brass, bronze and nickel. Other finishes supplied on special order.

No.	Each	STEM, INCHES		Carton	Std. Pkg.	Wt. Lb.
		Diameter	Length			
41	\$.85	$\frac{7}{16}$	$\frac{3}{16}$	10	100	12
*41-PL	.75	$\frac{7}{16}$	$\frac{3}{16}$	10	100	11
42	.85	$\frac{7}{16}$	$\frac{3}{8}$	10	100	12
43	.85	$\frac{7}{16}$	$\frac{3}{4}$	10	100	13
39	.85	Link Type		10	100	15

\*Plain lever without chain.

## McGill Levolver Three-Way Switches

3 Amperes, 125 Volts



No. 301

Equipped with lever for pull chain operation, and adapted for use wherever a three-way switch is to be used.

Permits the control of one or more lights from two remote points.

No.	Each	STEM, INCHES		Carton	Standard Package	Ship. Wt. Lb.
		Diameter	Length			
301	\$.90	$\frac{3}{16}$	$\frac{3}{16}$	10	100	13
302	.95	$\frac{3}{16}$	$\frac{3}{8}$	10	100	13
303	.95	$\frac{3}{16}$	$\frac{3}{4}$	10	100	14

## Levolier Canopy Pull Switches

10 Amperes, T Rating, 125 Volts—5 Amperes, 250 Volts



No. 1010

A single-pole switch designed for safe control of modern high watt and high intensity lamps.

No. 1039 is the same as No. 1010 with the addition of a link for fitting into chain fixture without rewiring.

Equipped with 7-foot cord, with bell at end, or plain lever control.

Standard finishes are brush brass, bronze and nickel.

No.	Each	STEM, INCHES		Carton	Std. Pkg.	Wt. Lb.
		Diameter	Length			
1010	\$1.30	$\frac{1}{2}$	$\frac{3}{8}$	10	50	10
1010-L	1.30	$\frac{1}{2}$	$\frac{3}{8}$	10	50	10
*1010-PL	1.20	$\frac{1}{2}$	$\frac{3}{8}$	10	50	9
1039	1.35	Link Type		10	50	13

\*Plain lever without chain.



## Levolier Multiple Circuit Switches

4 and 6 Amperes, 125 Volts

These switches carry a 6-ampere load, 125 volts, d.c. without undue arcing, pitting or heating. They are adaptable to a wide scope and variety of circuits, and can be furnished with standard plain lever, chain or cord pull control.



No. 400

No. 400 3-speed switch is designed particularly for ventilating fans and fractional hp. motors. Enclosed in fan housing—caps or casings are not necessary.



No. 265

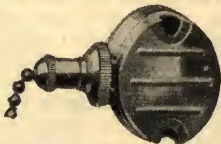
No. 265 is a double pole, double throw switch with complete line cut-off. Load leads may be winding of a motor, in which case by interchanging the load leads it is possible to use the switch as a pole changer. Order of rotation: first pull, load 1; second pull, off; third pull, load 2; and fourth pull, off. Subsequent pulls repetition of order.

No.	Each	Control	STEM, INCHES Diameter Length	Carton	Std. Pkg.	Wt. Lb.
265	\$1.70	1 Off, 2 Off	$\frac{1}{16}$ $\frac{3}{8}$	10	100	15
276	1.70	1 Off	$\frac{1}{16}$ $\frac{3}{8}$	10	100	15
400	1.70	1-2-3 Off	$\frac{1}{16}$ $\frac{3}{8}$	10	100	15
402	1.70	1 Off, 2 Off	$\frac{1}{16}$ $\frac{3}{8}$	10	100	15
404	1.70	1-2-3-4 No Off	$\frac{1}{16}$ $\frac{3}{8}$	10	100	15
406	1.70	1-2 Off	$\frac{1}{16}$ $\frac{3}{8}$	10	100	15

## Levolier Canopy Pull Switches

2-Circuit

3 Amperes, 125 Volts



No. 201

Operates the No. PS-35 three-light lamp. Equipped with 7-foot cord with bell at end. Standard finishes are brush brass, Jap bronze and nickel flash. Other finishes supplied on special order.

No.	Each	STEM, INCHES Diam. Length	Carton	Std. Pkg.	Wt. Lb.
201	\$.85	$\frac{1}{16}$ $\frac{3}{16}$	10	100	13
202	.90	$\frac{1}{16}$ $\frac{3}{8}$	10	100	13
203	.90	$\frac{1}{16}$ $\frac{3}{4}$	10	100	14

## Levolier Two-Circuit Canopy Pull Switches

10 Amperes, T Rating, 125 Volts—5 Amperes, 250 Volts



No. 1020

Adaptable to every type of installation for the control of double-filament, three light lamps.

Equipped with 7-foot cord, with bell at end, or plain lever control. Standard finishes are brush brass, Jap bronze and nickel.

No.	Each	STEM, INCHES Diameter Length	Carton	Std. Pkg.	Wt. Lb.
1020	\$1.50	$\frac{1}{16}$ $\frac{3}{16}$	10	50	10
1020-S	1.50	$\frac{1}{16}$ $\frac{3}{8}$	10	50	10
1020-L	1.50	$\frac{1}{16}$ $\frac{3}{4}$	10	50	10
*1020-PL	1.40	$\frac{1}{16}$ $\frac{3}{8}$	10	50	9

\*Plain lever without chain.

## McGill Fixture Switches

3 Amperes, 125 Volts—1 Ampere, 250 Volts



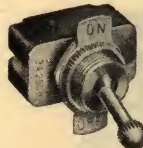
No. 21 is made to fit any canopy wall thickness up to  $\frac{5}{16}$ -inch. Equipped with 9-inch leads. Rating: 3 amperes. Mechanism is enclosed in bakelite body.

No. 23 is a smaller switch. Size,  $\frac{5}{8} \times \frac{1}{8} \times \frac{1}{8}$  inches. Fits wall thickness up to  $\frac{5}{16}$ -inch. Has 9-inch leads. Rating: 3 amperes, 125 volts; 1 ampere, 250 volts.

No.	Each	Description	Carton	Std. Pkg.	Wt. Lb.
21	\$.40	Single Pole, On and Off.....	10	100	10
23	.30	Single Pole, On and Off.....	10	100	10

## McGill Toggle Switches

6 Amperes, 125 Volts



A small, thin, multiple switch for individual control of lights in Pullman cars, passenger cars and busses, interior lights in automobiles; wall, floor, and table lamps; airplane and trailer lights; as well as power control in appliances, small tools, industrial and office machines, and fractional power motors.

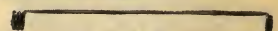
Standard package, 100, carton 10.

No.	Each	Description	Wt. Lb.
25	\$.40	Single Pole, Wire Leads, T Rating	10
25-L	.40	Single Pole, Soldering Lugs, T Rating	10
27	.45	Three-Way, Wire Leads	10
27-L	.45	Three-Way, Soldering Lugs	10
28	.45	2-Circuit, Wire Leads	10
28-L	.45	2-Circuit, Soldering Lugs	10

## Levolier Extension Arms



No. 85



No. 86

Constant pulling of lamp cords that rub against reflectors, shades and bowls can be eliminated by slipping an extension arm over each switch lever, inserting the cord through the end hole or loop, and knotting to hold. Arm is  $\frac{1}{2}$  inch thick, tubular formed for rigidity. Standard or special finished to match all Levolier switches.

No. 85-W can be extended to meet changing conditions for use with 18 or 22-inch and larger basin fixtures.

Nos. 86-L and 86 have two wire type extension arms which are designed to fit the lever on the No. 41-B plastic shell switch.

Packed 10 in a carton; standard package, 100.

No.	85-W	85	86-L	86
Each	\$.25	.20	.15	.10
Length.....	9 inches	5 $\frac{1}{4}$	9	5
Weight of Standard Package.lb.	4	3	3	2





## G-E Type CR1070 Switchettes

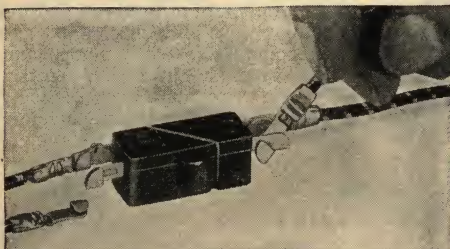
115/230 Volts, A.C.



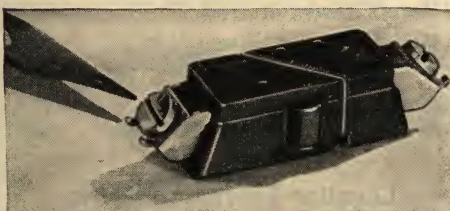
Size No. 1, No. CR1070-C103 Spring-Return



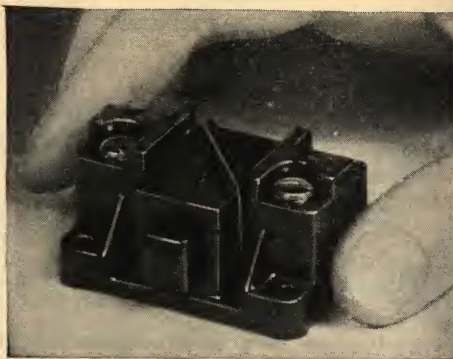
Size No. 1, No. CR1070-C110 Maintaining Contact



Size No. 1, No. CR1070-C114 Quick-Disconnect



Size No. 1, No. CR1070-C122 With No. 6 Screw Terminals



Size No. 2, No. CR1070-A102

Available in many forms with special contact arrangement and design modification. Especially applicable where space is limited, and long life is desired. Used wherever a manually or mechanically operated switch is desired.

## Applications

As a float switch in automatic washing machines, the Switchette measures the height of the water, and regulates water flow. Selected for this application because of its small size and its ability to handle a 1/3-hp washing-machine motor.

As a contact mechanism in temperature pressure limits in domestic oil burners and stokers, to provide protection against overtemperature or overpressure. The use of a Switchette on this application resulted in a smaller complete device.

As a contact unit in juke boxes, and coin vending machines, it controls the mechanisms that turn records, or deliver the merchandise. Its wide variety of special contact arrangements makes this switch ideally suited to this application.

A cam-operated Switchette is used to time industrial processes and operation. The small size and easy mounting of this unit makes it very desirable.

In private aircraft, the Switchette is used to control radios, to limit the travel of the mechanism used to raise and lower landing wheels, to operate such safety devices as a flashing light to indicate to the pilot of the airplane that the landing gear has not been lowered, and to perform numerous other duties.

A manually operated Switchette is used as a trigger switch in automatic hand drills, since its small size permits an easy fit into the motor casting. Similar units also have been used in foot-operated switches for machine tools, and dash-board tools for road-grading equipment.

## Size No. 1—For Motors Up to ½ Horsepower—2x1½x1½ Inches

Single-Circuit Normally Closed	
No.	Each
CR1070-C101D3	\$1.95
CR1070-C114A3	1.65
CR1070-C122A3	1.70

Single-Circuit Normally Open	
No.	Each
CR1070-C101E3	\$1.95
CR1070-C114B3	1.65
CR1070-C122B3	1.70

Two-Circuit	
No.	Each
CR1070-C101F3	\$2.25
CR1070-C103C3	1.55
CR1070-C103F3	1.55
CR1070-C110C3	1.75
CR1070-C110F3	1.75
CR1070-C111C3	1.60
CR1070-C111F3	1.60
CR1070-C114C3	1.95

Single-Pole, Normally Closed	
No.	Each
CR1070-C103A3	\$1.30
CR1070-C103D3	1.30
CR1070-C103G2	1.30
CR1070-C103G4	1.30
CR1070-C103K2	1.30
CR1070-C103K4	1.30
CR1070-C110A3	1.55
CR1070-C110D3	1.55
CR1070-C110G2	1.55
CR1070-C110G4	1.55
CR1070-C110K2	1.55
CR1070-C110K4	1.55
CR1070-C111A3	1.40
CR1070-C111D3	1.40
CR1070-C111G2	1.40
CR1070-C111G4	1.40
CR1070-C111K2	1.40
CR1070-C111K4	1.40
CR1070-C111J2	1.60
CR1070-C111J4	1.60
CR1070-C111M2	1.60
CR1070-C111M4	1.60

Single-Pole Normally Open	
No.	Each
CR1070-C103B3	\$1.30
CR1070-C103E3	1.30
CR1070-C103H2	1.30
CR1070-C103H4	1.30
CR1070-C103L2	1.30
CR1070-C103L4	1.30
CR1070-C110B3	1.55
CR1070-C110E3	1.55
CR1070-C110H2	1.55
CR1070-C110H4	1.55
CR1070-C110L2	1.55
CR1070-C110L4	1.55
CR1070-C111B3	1.40
CR1070-C111E3	1.40
CR1070-C111H2	1.40
CR1070-C111H4	1.40
CR1070-C111L2	1.40
CR1070-C111L4	1.40

Single-Pole, Double Throw	
No.	Each
CR1070-C103J2	\$1.50
CR1070-C103J4	1.50
CR1070-C103M2	1.50
CR1070-C103M4	1.50
CR1070-C110J2	1.75
CR1070-C110J4	1.75
CR1070-C110M2	1.75
CR1070-C110M4	1.75
Three-Point Normally Closed	
CR1070-C103N3	\$1.70
CR1070-C103Q3	1.70
Three-Point Normally Open	
CR1070-C103P3	\$1.70
CR1070-C103R3	1.70
Two Closed and One Open Contacts	
CR1070-C103S3	\$2.00
CR1070-C103U3	2.00
Two Open and One Closed Contacts	
CR1070-C103T3	\$2.00
CR1070-C103V3	2.00

## Size No. 2—For Motors Up to ¾ Horsepower—2x1½x1½ Inches

Single-Pole Normally Closed	
No.	Each
CR1070-A102D	\$2.80

Single-Pole Normally Open	
No.	Each
CR1070-A102E	2.80

Two-Circuit	
No.	Each
CR1070-A102F	3.15



## Spencer Klixon Circuit Breakers

Capacity, 30 Volts, D.C.

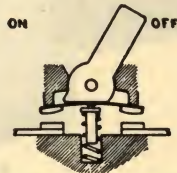
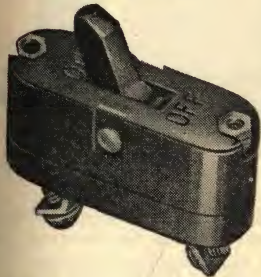
Klixon Circuit Breakers provide positive electrical circuit protection from possible damage due to overloads and short circuits. They operate similarly to fuses but are permanent protective devices and have nothing that burns out.

Recommended for use in circuits or mobile equipment, boats, radio apparatus, home lighting plants, test and laboratory equipment, etc. Suitable for any equipment operating at 30 volts d.c. or less and as a secondary breaker on many 110 and 220-volt a.c. applications.

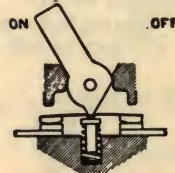
Light in weight, compact, easy to install. Unaffected by vibration, shock or motion.

Types CDLM, CDLA, CDM, and CDA have weatherproof case which keeps out dust, moisture, and prevents corrosion.

**Type C-6363**

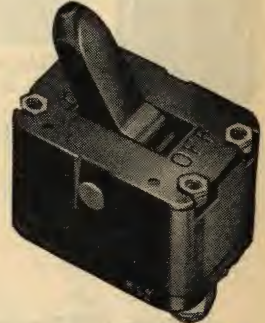


Opens when the Circuit Becomes Dangerously Overloaded



Snap Switch to Close Circuit Turned On or Off Manually

**Type D-6364**



Rating  
Amperes

Trip Free  
No.

Non-Trip Free  
No.

Rating  
Amperes

Trip Free  
No.

Non-Trip Free  
No.

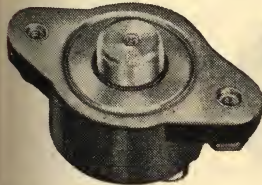
5	C-6363-1- 5
10	C-6363-1-10
15	C-6363-1-15
20	C-6363-1-20
25	C-6363-1-25
30	C-6363-1-30
35	C-6363-1-35

C-6363-2- 5
C-6363-2-10
C-6363-2-15
C-6363-2-20
C-6363-2-25
C-6363-2-30
C-6363-2-35

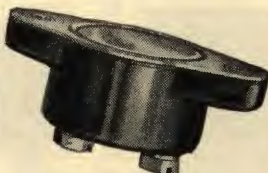
35	D-6364-1- 35
40	D-6364-1- 40
45	D-6364-1- 45
50	D-6364-1- 50
60	D-6364-1- 60
70	D-6364-1- 70
80	D-6364-1- 80
90	D-6364-1- 90
100	D-6364-1-100
120	D-6364-1-120

D-6364-2- 35
D-6364-2- 40
D-6364-2- 45
D-6364-2- 50
D-6364-2- 60
D-6364-2- 70
D-6364-2- 80
D-6364-2- 90
D-6364-2-100
D-6364-2-120

**Type CDLM**  
Manual Reset  
Weatherproof



**Type CDLA**  
Automatic Reset  
Weatherproof



Rating  
Amperes

No.

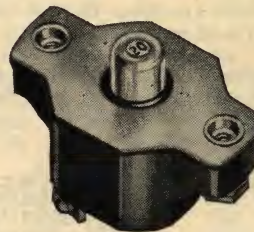
Rating  
Amperes

No.

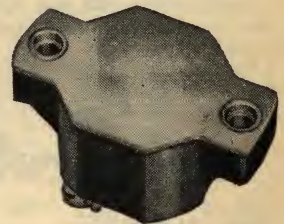
35	CDLM- 35
40	CDLM- 40
45	CDLM- 45
50	CDLM- 50
60	CDLM- 60
70	CDLM- 70
80	CDLM- 80
90	CDLM- 90
105	CDLM-105
135	CDLM-135
150	CDLM-150

35	CDLA- 35
40	CDLA- 40
45	CDLA- 45
50	CDLA- 50
60	CDLA- 60
70	CDLA- 70
80	CDLA- 80
90	CDLA- 90
105	CDLA-105
135	CDLA-135
150	CDLA-150

**Type CDM**  
Manual Reset  
Weatherproof



**Type CDA**  
Automatic Reset  
Weatherproof



Rating  
Amperes

No.

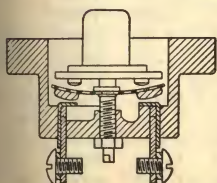
Rating  
Amperes

No.

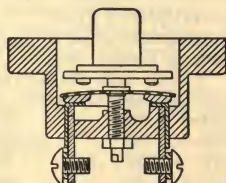
15	CDM-15
20	CDM-20
25	CDM-25
30	CDM-30
35	CDM-35
40	CDM-40

15	CDA-15
20	CDA-20
25	CDA-25
30	CDA-30
35	CDA-35
40	CDA-40

**Manual Reset**

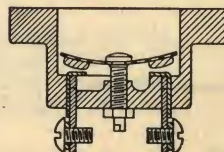


Opens when the circuit becomes dangerously overloaded.

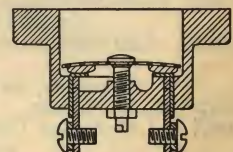


Push button to re-close circuit.

**Automatic Reset**



Opens when the circuit becomes dangerously overloaded.



Closes automatically when circuit cools.



## H &amp; H Type NF Line Starting Switches

## Surface Type—For Small Motors

## Quick Make and Quick Break

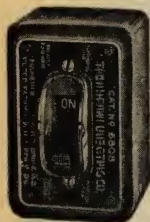
No. 6808 2-Pole, Single-Phase, 2 Hp., 115-600 Volts;

30 Amperes, 250 Volts; 20 Amperes, 600 Volts

No. 7810 3-Pole, 3-Phase, 2 Hp., 110-600 Volts A.C.;

30 Amperes, 250 Volts; 20 Amperes, 600 Volts

Listed as Standard by Underwriters' Laboratories, Inc.



No. 6808

Gives positive control for motors and is especially suitable for oil burners, refrigerators, motor driven machinery, and lighting loads.

No fuses or overload protection are provided for.

Box is made of pressed metal.

This switch passed the stalled rotor test which is six times the normal full motor load.

Standard finish is cadmium.

No.	6808	7810
Each	\$1.90	4.80
Box Number	34	34
Weight	1½ pounds	1½

## Type RB Trumbull Motor Control Tumbler Switches

## Across-the-Line Type—Without Overload Protection

## Schedule MS



Surface Type



Starter Unit Only



Flush Cover

Surface type has one ½x¾-inch knockout in each end; two ½-inch knockouts in rear; and one ½-inch knockout in sides.

Starter unit: height, 2½ inches; width, 1¾ inches; and depth, 1⅜ inches. Fits into standard deep wall box. Machine grey finish.

## 2-Pole

30 Amperes, 250 Volts; 5 Amperes, 600 Volts

2 Hp., 250 Volts; 1 Hp., 600 Volts, D.C.; 2 Hp., 600 Volts, A.C.

No.	Each	Type	Width In.	Height Inches	Diam. In.
2228	\$1.95	Surface	2⅜	4⅜	3
2228C	6.95	Water and Dust Tight	...	...	...
2228E	6.95	Hazardous—Class I, Group D	...	...	...
2228F	3.40	Float	2⅜	4⅜	3
2228S	1.45	Switch Unit	...	...	...
*2227S	1.45	Switch Unit	...	...	...

## 3-Pole

30 Amperes, 250 Volts; 20 Amperes, 600 Volts

2 Hp., 600 Volts, A.C.

No.	Each	Type	Width In.	Height Inches	Diam. In.
2368	\$4.80	Surface	2⅜	4⅜	3
2368C	12.50	Water and Dust Tight	...	...	...
2368E	12.50	Hazardous—Class I, Group D	...	...	...
2368S	4.30	Switch Unit	...	...	...

## 3-Way

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

No.	Each	Type	Width In.	Height Inches	Diam. In.
2328	\$1.95	Surface	2⅜	4⅜	3
2328S	1.45	Switch Unit	...	...	...

## Flush Covers

For Nos. 2228S, 2328S and 2368S

No.	Each	Type	Width In.	Height Inches	Diam. In.
1199	\$ .30	Cover	3⅝	4⅜	...

\*For Type FS shallow cast fittings.

## Bull Dog Clamprmatic Vacu-Break Safety Switches



Arcing Chambers Attached to Overhead Brackets



Cut-Away View of Bakelite Arcing Chamber



Full Off Position



Full On Position

A clamp type pressure switch contact, with quick, easy operation. Exerts a wedging action when the moving contact engages the prongs of the stationary contacts. This wedging action puts great pressure on the contact surfaces while in the On position. When the handle is pushed to Off position, the clamping spring releases pressure first, and the stored energy thus released accelerates the breaking of circuit.

Rocker handle of the push type is directly connected to a bail on which the switch heads are mounted. Bakelite chambers confine arcs—prevent burning and pitting of contacts. Wiring room ample, yet compact.

## Type T.T. Trumbull Manual Starters Across-the-Line Type—Interchangeable Heaters Thermostatic Overload Protection

## Schedule MS



Surface Type



Starter Unit



Flush Cover

Surface type has one ½x¾-inch knockout in each end, two ½-inch knockouts in rear, and one ½-inch knockout in sides.

One heater required for each starter, either single or double pole. In ordering heaters only, or starters with heaters, select the heater rated nearest to the ampere rating indicated on the motor nameplate. Machine grey finish.

## Hp. Ratings

Volts	A.C. 115-230	D.C. 32 125 250
1-Pole	1	¼ ¾ 1½
2-Pole	1	¼ 1 1

## Without Heaters

N.E.M.A. Enclosure			2-Pole		
No.	Each	Amp.	No.	Each	Amp.
General Purpose, Type 1	1800	\$2.20	1900	\$2.50	
Watertight, Type 4	1800C	9.50	1900C	9.80	
Hazardous, Type 7	1800E	9.50	1900E	9.80	
Interior Only	1800S	1.70	1900S	2.00	

## Heaters Only

No.	Each	Amp.	No.	Each	Amp.	No.	Each	Amp.
9700-5	\$ .65	.5	9703	\$ .65	3.	9707	\$ .65	7
9700-7	.65	.7	9703-5	.65	3.5	9708	.65	8
9701	.65	1.	9704	.65	4.	9709	.65	9
9701-5	.65	1.5	9704-5	.65	4.5	9710	.65	10
9702	.65	2.	9705	.65	5.	9712	.65	12
9702-5	.65	2.5	9706	.65	6.			

## No. 1199 Flush Covers

No. 1199, Flush Cover for Nos. 1800S and 1900S... each \$.30



## Type A Bull Dog Safety Switches

## Double Throw Knife Blade Type

Positive Make—Quick Break

Safety Interlocks

Black Enamel Finish



No. 23222

Solderless wire terminals are standard.

## Fusible—Both Ends

2-Pole, 230 Volts A.C.  
250 Volts D.C.

## Not Fusible

2-Pole, 230 Volts A.C.  
250 Volts D.C.

No.	Each	Amp.	*Box Ref. No.	Wt. Lb.	No.	Each	Amp.	*Box Ref. No.	Wt. Lb.
20221	\$30.00	30	113	16	†23221	\$18.00	30	101D	14
20222	54.00	60	113	24	23222	29.00	30-60	106	21
20223	82.00	100	115	80	23223	43.00	100	105	29
20224	114.00	200	117	118	23224	57.00	200	118	40
20225	231.00	400	124	178	23225	162.00	400	117	73
.....	.....	.....	.....	.....	23226	230.00	600	124	103

## 3-Pole, 230 Volts A.C.

## 3-Pole, 230 Volts A.C.

20321	\$33.00	30	113	21	†23321	\$22.00	30	101D	17
20322	59.00	60	113	31	23322	33.00	30-60	106	25
20323	99.00	100	115	100	23323	53.00	100	105	40
20324	150.00	200	117	135	23324	83.00	200	118	63
20325	317.00	400	124	225	23325	218.00	400	117	105
.....	.....	.....	.....	.....	23326	303.00	600	124	123

## 4-Pole, 230 Volts A.C.

## 4-Pole, 230 Volts A.C.

20421	\$45.00	30	115	54	23422	\$45.00	30-60	105	26
20422	73.00	60	115	55	23423	94.00	100	118	73
20423	116.00	100	117	118	23424	130.00	200	117	79
20424	190.00	200	117	180	23425	293.00	400	124	128

2-Pole, 575 Volts A.C.  
600 Volts D.C.2-Pole, 575 Volts A.C.  
600 Volts D.C.

†20261	\$61.00	30	115	35	†23262	\$27.00	30-60	106	31
†20262	63.00	60	115	39	†23263	47.00	100	105	55
†20263	109.00	100	117	102	†23264	64.00	200	118	80
†20264	132.00	200	124	161	†23265	183.00	400	117	90
.....	.....	.....	.....	.....	†23266	257.00	600	124	110

## 3-Pole, 575 Volts A.C.

## 3-Pole, 575 Volts A.C.

20351	\$64.00	30	115	36	23352	\$35.00	30-60	106	25
20352	66.00	60	115	41	23353	57.00	100	105	40
20353	116.00	100	117	112	23354	88.00	200	118	63
20354	175.00	200	124	165	23355	230.00	400	117	105
.....	.....	.....	.....	.....	23356	333.00	600	124	123

## 4-Pole, 575 Volts A.C.

## 4-Pole, 575 Volts A.C.

20451	\$96.00	30	115	56	23452	\$50.00	30-60	105	26
20452	99.00	60	115	68	23453	106.00	100	118	73
20453	172.00	100	117	155	23454	142.00	200	117	79
20454	222.00	200	124	182	23455	318.00	400	124	128

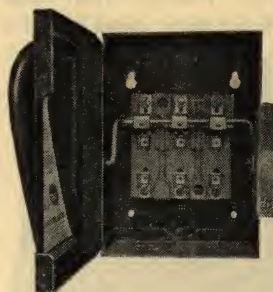
\*Box information furnished on request.

†Type C, non-interlocking.

These switches are listed as enclosed switches by Underwriters' Laboratories under File E4776, with exception of those marked with a double dagger (‡).

## Type D Bull Dog Vacu-Break Safety Switches

## Junior Line—Non-Interlocking



Cable terminals are solderless wire grips.

## Single Throw—Fusible

## 2-Pole

No.	Each	Amp.	Voltage	CABINET SIZE OVERALL, INCHES Ht. Width Depth	Wt. Lb.
334211S	\$3.20	30	125/250-125 D.C.	8 $\frac{5}{8}$ 6 $\frac{3}{8}$ 4 $\frac{5}{8}$	5
334221S	4.00	30	230 A.C.-250 D.C.	8 $\frac{5}{8}$ 6 $\frac{3}{8}$ 4 $\frac{5}{8}$	5
334222	9.50	60	230 A.C.-250 D.C.	12 $\frac{1}{2}$ 8 5 $\frac{5}{8}$	11
334223	19.00	100	230 A.C.-250 D.C.	15 $\frac{1}{2}$ 8 $\frac{1}{2}$ 6 $\frac{3}{8}$	26
334224	35.00	200	230 A.C.-250 D.C.	24 $\frac{1}{2}$ 13 9 $\frac{1}{4}$	35

## 3-Pole

334311S	\$6.00	30	115 A.C.	8 $\frac{5}{8}$ 6 $\frac{3}{8}$ 4 $\frac{5}{8}$	6
334321S	7.50	30	230 A.C.	8 $\frac{5}{8}$ 6 $\frac{3}{8}$ 4 $\frac{5}{8}$	6
334322	12.00	60	230 A.C.	12 $\frac{1}{2}$ 8 5	12
334323	22.00	100	230 A.C.	15 $\frac{1}{2}$ 8 $\frac{1}{2}$ 6 $\frac{3}{8}$	27
334324	48.00	200	230 A.C.	24 $\frac{1}{2}$ 13 9 $\frac{1}{4}$	38

## 4-Pole

334421	\$11.00	30	230 A.C.	12 $\frac{1}{2}$ 11 5	15
334422	21.00	60	230 A.C.	12 $\frac{1}{2}$ 11 5	16
334423	47.00	100	230 A.C.	15 $\frac{1}{2}$ 11 6 $\frac{1}{2}$	32
334424	85.00	200	230 A.C.	24 $\frac{1}{2}$ 15 $\frac{1}{2}$ 9 $\frac{1}{4}$	50

## 2-Pole, Solid Neutral (1 Blade, 1 Fuse Connection)

336211S	\$2.70	30	125 D.C.	8 $\frac{5}{8}$ 6 $\frac{3}{8}$ 4 $\frac{5}{8}$	5
336221S	3.00	30	250 D.C.	8 $\frac{5}{8}$ 6 $\frac{3}{8}$ 4 $\frac{5}{8}$	5

## 3-Pole, Solid Neutral (2 Blades, 2 Fuse Connections)

336311S	\$3.50	30	125-250	8 $\frac{5}{8}$ 6 $\frac{3}{8}$ 4 $\frac{5}{8}$	6
336321S	5.00	30	125-250-230 A.C.	8 $\frac{5}{8}$ 6 $\frac{3}{8}$ 4 $\frac{5}{8}$	6
336322	10.00	60	125-250-230 A.C.	12 $\frac{1}{2}$ 8 5	12
336323	20.00	100	125-250-230 A.C.	15 $\frac{1}{2}$ 8 $\frac{1}{2}$ 6 $\frac{3}{8}$	27
336324	44.00	200	125-250-230 A.C.	24 $\frac{1}{2}$ 13 9 $\frac{1}{4}$	36

## 4-Pole, Solid Neutral (3 Blades, 3 Fuse Connections)

336421	\$10.00	30	230 A.C.	12 $\frac{1}{2}$ 11 5	14
336422	20.00	60	230 A.C.	12 $\frac{1}{2}$ 11 5	15
336423	33.00	100	230 A.C.	15 $\frac{1}{2}$ 11 6 $\frac{1}{2}$	31
336424	59.00	200	230 A.C.	24 $\frac{1}{2}$ 15 $\frac{1}{2}$ 9 $\frac{1}{4}$	47

## Single Throw—Not Fusible

## 2-Pole

No.	Each	Amp.	Voltage	CABINET SIZE OVERALL, INCHES Ht. Width Depth	Wt. Lb.
337221S	\$3.00	30	230 A.C.-250 D.C.	8 $\frac{5}{8}$ 6 $\frac{3}{8}$ 4 $\frac{5}{8}$	5
337222	9.00	60	230 A.C.-250 D.C.	12 $\frac{1}{2}$ 8 5	9
337223	18.00	100	230 A.C.-250 D.C.	13 $\frac{1}{2}$ 8 $\frac{1}{2}$ 6 $\frac{1}{8}$	15
337224	26.00	200	230 A.C.-250 D.C.	24 $\frac{1}{2}$ 13 9 $\frac{1}{4}$	23

## 3-Pole

337321S	\$5.50	30	230 A.C.	8 $\frac{5}{8}$ 6 $\frac{3}{8}$ 4 $\frac{5}{8}$	6
337322	11.00	60	230 A.C.	9 $\frac{1}{2}$ 8 5	9
337323	20.00	100	230 A.C.	13 $\frac{1}{2}$ 8 $\frac{1}{2}$ 6 $\frac{1}{8}$	16
337324	35.00	200	230 A.C.	24 $\frac{1}{2}$ 13 9 $\frac{1}{4}$	25

## 4-Pole

337421	\$10.00	30	230 A.C.	12 $\frac{1}{2}$ 11 5	10
337422	19.00	60	230 A.C.	12 $\frac{1}{2}$ 11 5	14
337423	45.00	100	230 A.C.	13 $\frac{1}{2}$ 11 6 $\frac{1}{2}$	25
337424	80.00	200	230 A.C.	24 $\frac{1}{2}$ 15 $\frac{1}{2}$ 9 $\frac{1}{4}$	37

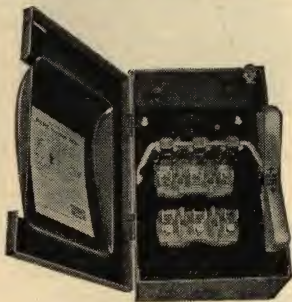


## Type C Bull Dog Vacu-Break Safety Switches

Front Operated, 30 to 200 Amperes  
Side Operated, 400 and 600 Amperes  
Standard Line

Single Throw—Fusible—Non-Interlocking

Quick Make—Quick Break



The highly effective Vacu-Break arc control principle is incorporated in all Bull Dog Vacu-Break Safety Switches, regardless of price. As in other lines of switches, the Master (Type A) construction provides the maximum in service and safety. The Standard (Type C) construction is designed for those installations where an interlock is not required, as motor circuits and certain other industrial uses. The Junior (Type D) construction is intended for general purpose installations, such as service entrance and for motor circuits not exceeding 2 hp.

Cable terminals are Bull Dog solderless wire grips. Standard finish is black enamel.

## 2-Pole, 230 Volts A.C.—250 Volts D.C.

No.	Each	Amp.	HP. RATING			Weight Pounds
			575 V. A.C.	220 V. A.C.	250 V. D.C.	
224221S	\$9.00	30	..	2	5	6
*224221	14.00	30	..	2	5	9
224222	16.00	60	..	5	10	13
224223	25.00	100	..	10	15	27
224224	38.00	200	..	15	30	36
24225	96.00	400	..	30	50	141
24226	190.00	600	..	..	..	205

## 3-Pole, 230 Volts A.C.

224321S	\$11.00	30	..	3	..	7
*224321	18.00	30	..	3	..	11
224322	20.00	60	..	7½	..	16
224323	31.00	100	..	15	..	36
224324	53.00	200	..	30	..	47
24325	111.00	400	..	50	..	148
24326	219.00	600	..	..	..	184

## 3-Pole, Switched Neutral, 125-250 Volts

225321S	\$11.00	30	..	..	..	7
*225321	18.00	30	..	..	..	11
225322	20.00	60	..	..	..	13
225323	31.00	100	..	..	..	36
225324	53.00	200	..	..	..	39
25325	111.00	400	..	..	..	153
25326	219.00	600	..	..	..	226

## 4-Pole, 230 Volts A.C.

*224421	\$21.00	30	..	3	..	16
224422	29.00	60	..	10	..	17
224423	47.00	100	..	20	..	32
224424	85.00	200	..	30	..	51
24425	158.00	400	..	50	..	174
24426	290.00	600	..	..	..	253

## 3-Pole, 575 Volts A.C.

224351A	\$19.00	30	7½	..	..	13
224352	23.00	60	20	..	..	13
224353	42.00	100	30	..	..	29
224354	63.00	200	50	..	..	47

## 4-Pole, 575 Volts A.C.

224451	\$31.00	30	7½	..	..	18
224452	35.00	60	20	..	..	19
224453	63.00	100	30	..	..	38
224454	102.00	200	50	..	..	54

\*60-ampere switch parts with 30-ampere fuse clips and spacings.

## Type C Bull Dog Vacu-Break Safety Switches

Front Operated, 30 to 200 Amperes  
Side Operated, 400 and 600 Amperes  
Standard Line

Quick Make—Quick Break



Cable terminals are Bull Dog solderless wire grips. Standard finish is black enamel.

## Single Throw—Fusible—Non-Interlocking

3-Pole, Solid Neutral, 230 Volts A.C.—125-250 Volts  
(2 Blades, 2 Fuse Connections)

No.	Each	Amp.	HP. RATING			Weight Pounds
			575 V. A.C.	230 V. A.C.	250 V. D.C.	
226321S	\$10.00	30	..	3	..	7
*226321	12.00	30	..	3	..	11
226322	17.00	60	..	7½	..	13
226322PT	17.00	60	..	..	..	13
226322P	17.00	60	..	..	..	13
226323	26.00	100	..	15	..	36
226323PT	26.00	100	..	..	..	36
226323P	26.00	100	..	..	..	36
226324	48.00	200	..	30	..	45
26325	105.00	400	..	50	..	140
26326	204.00	600	..	..	..	224

4-Pole, Solid Neutral, 230 Volts A.C.  
(3 Blades, 3 Fuse Connections)

226421	\$14.00	30	..	3	..	14
226422	23.00	60	..	7½	..	15
226423	36.00	100	..	15	..	44
226424	63.00	200	..	30	..	48
26425	135.00	400	..	50	..	162
26426	242.00	600	..	..	..	237

## Single Throw—Not Fusible—Non-Interlocking

## 2-Pole, 230 Volts A.C.—250 Volts D.C.

227221S	\$8.00	30	..	3	5	6
227222	14.00	60	..	7½	10	11
227223	24.00	100	..	15	20	18
227224	32.00	200	..	25	30	24
27225	80.00	400	..	30	50	86
27226	150.00	600	..	..	..	122

## 3-Pole, 230 Volts A.C.

227321S	\$10.00	30	..	5	..	7
227322	18.00	60	..	10	..	11
227323	27.00	100	..	20	..	18
227324	44.00	200	..	40	..	41
27325	96.00	400	..	50	..	132
27326	196.00	600	..	..	..	172

## 4-Pole, 230 Volts A.C.

227421	\$19.00	30	..	10	..	14
227422	24.00	60	..	15	..	14
227423	45.00	100	..	25	..	27
227424	80.00	200	..	50	..	38
27425	137.00	400	..	50	..	157
27426	240.00	600	..	..	..	222

## 3-Pole, 575 Volts A.C.

227351	\$14.00	30	10	..	..	8
227352	19.00	60	25	..	..	12
227353	35.00	100	40	..	..	19
227354	48.00	200	50	..	..	41

## 4-Pole, 575 Volts A.C.

227451	\$22.00	30	25	..	..	16
227452	31.00	60	25	..	..	16
227453	57.00	100	40	..	..	29
227454	82.00	200	50	..	..	40

\*60-ampere switch parts with 30-ampere fuse clips and spacings.



## Type A Bull Dog Vacu-Break Safety Switches

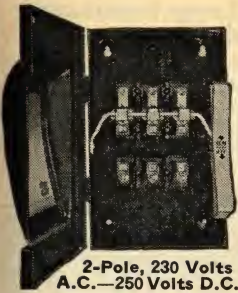
Front Operated, 30 to 200 A.  
Side Operated, 400 A. & Over

Master Line  
Single Throw—Fusible—  
Safety Interlocks

Quick Make—Quick Break

Cable terminals are Bull Dog solderless wire grips.

Standard finish is black enamel.



No.	Each	Amp.	H.P. RATINGS			Weight Pounds
			575 V. A.C.	230 V. A.C.	250 V. D.C.	
114221S	\$16.00	30	..	2	5	7
*114221	20.00	30	..	2	5	11
114222	21.00	60	..	5	10	14
114223	33.00	100	..	10	15	29
114224	54.00	200	..	15	30	38
14225	122.00	400	..	30	50	140
14226	195.00	600	..	..	..	208
14227	298.00	800	..	..	..	260
14228	413.00	1200	..	..	..	320

### 3-Pole, 230 Volts A.C.

114321S	\$20.00	30	..	3	..	8
*114321	24.00	30	..	3	..	12
114322	28.00	60	..	7½	..	15
114323	43.00	100	..	15	..	30
114324	64.00	200	..	30	..	47
14325	139.00	400	..	50	..	153
14326	238.00	600	..	..	..	229
14327	406.00	800	..	..	..	370
14328	521.00	1200	..	..	..	381

### 3-Pole, Solid Neutral, 230 Volts A.C. or 125-250 V.

116321S	\$18.00	30	..	3	..	8
116321	21.00	30	..	3	..	12
116322	24.00	60	..	7½	..	15
116323	38.00	100	..	15	..	30
116324	59.00	200	..	30	..	39
16325	135.00	400	..	50	..	155
16326	217.00	600	..	..	..	227
16327	325.00	800	..	..	..	292
16328	460.00	1200	..	..	..	375

### 4-Pole, 230 Volts A.C.

114421	\$28.00	30	..	3	..	18
114422	34.00	60	..	10	..	20
114423	56.00	100	..	20	..	33
114424	100.00	200	..	30	..	55
14425	190.00	400	..	50	..	177
14426	327.00	600	..	..	..	256
14427	614.00	800	..	..	..	350
14428	750.00	1200	..	..	..	465

### 2-Pole, 575 Volts A.C.

114261A	\$26.00	30	5	..	..	13
114262	28.00	60	10	..	..	15
114263	43.00	100	15	..	..	30
114264	64.00	200	30	..	..	39
14265	149.00	400	..	..	..	150
14266	236.00	600	..	..	..	218
14267	365.00	800	..	..	..	275
14268	514.00	1200	..	..	..	350

### 3-Pole, 575 Volts A.C.

114351A	\$31.00	30	7½	..	..	14
114352	33.00	60	20	..	..	16
114353	49.00	100	30	..	..	31
114354	79.00	200	50	..	..	49
14355	162.00	400	..	..	..	150
14356	270.00	600	..	..	..	240
14357	473.00	800	..	..	..	370
14358	622.00	1200	..	..	..	410

### 4-Pole, 575 Volts A.C.

114451	\$38.00	30	7½	..	..	21
114452	41.00	60	20	..	..	23
114453	65.00	100	30	..	..	40
114454	110.00	200	50	..	..	56
14455	210.00	400	..	..	..	180
14456	341.00	600	..	..	..	270
14457	625.00	800	..	..	..	370
14458	877.00	1200	..	..	..	490

\*60-ampere switch parts with 30-ampere fuse clips and spacings.

## Type A Bull Dog Vacu-Break Safety Switches

Front Operated, 30 to 200 Amps.  
Side Operated, 400 to 1200 Amps.

Master Line  
Single Throw—Not Fusible  
Safety Interlocks

Quick Make—Quick Break



Cable terminals are Bull Dog solderless wire grips.

Standard finish is black enamel.

### 2-Pole

230 V.-250 V.						575 V.					
H.P. RATING						H.P. RATING					
Amp.	No.	Each	230V. A.C.	250V. D.C.	Wt. Lb.	No.	Each	575 V. A.C.	575 V. D.C.	Wt. Lb.	
30	117221S	\$15.00	3	5	6	117261	\$18.00	7½	7	7	
60	117222	20.00	7½	10	12	117262	23.00	15	12	12	
100	117223	32.00	15	20	20	117263	38.00	25	20	20	
200	117224	45.00	25	30	26	117264	49.00	50	27	27	
400	17225	85.00	30	50	89	17265	122.00	..	92	92	
600	17226	167.00	..	..	125	17266	176.00	..	135	135	
800	17227	264.00	..	..	170	.....	.....	..	.....	.....	
1200	17228	359.00	..	..	250	.....	.....	..	.....	.....	

3-Pole						4-Pole					
575 V.-230 V.						575 V.-230 V.					
H.P. RATING						H.P. RATING					
Amp.	No.	Each	575V. A.C.	230V. D.C.	Wt. Lb.	No.	Each	575V. A.C.	230V. D.C.	Wt. Lb.	
30	*117321S	\$18.00	..	5	7	*117421	\$26.00	..	10	12	
60	.....	.....	..	..	..	117452	34.00	25	15	17	
30	117351	21.00	10	..	8	.....	.....	..	..	..	
60	117352	26.00	25	10	13	.....	.....	..	..	..	
100	117353	40.00	40	20	21	117453	61.00	40	25	31	
200	117354	52.00	50	40	29	117454	95.00	50	50	42	
400	17355	135.00	..	50	135	17455	176.00	..	50	160	
600	17356	217.00	..	..	175	17456	306.00	..	..	225	
800	17357	352.00	..	..	240	17457	454.00	..	..	295	
1200	17358	473.00	..	..	310	17458	622.00	..	..	360	

\*Rated at 230 volts a.c. only.





**Square D Double Throw Safety Switches**

82,000 Series Switches: Quick Make—Quick Break—Interlocked Cover—Solder-Solderless Lugs

92,000 Series Switches: Not Quick Make or Quick Break—Solder-Solderless Lugs on 60 to 600-Ampere Sizes

52,000 Series Switches: Positive Make—Quick Break



No. 82263

Explosion-resisting boxes are equipped with two threaded conduit hubs of proper size.  
Black enamel finish.

2-Pole, 230 Volts A.C.; 250 Volts D.C.

Fusible, Not Fusible

Top and Bottom

Amps.	Sheet Steel Enclosure		Sheet Steel Enclosure		Cast Iron Explosion Resisting Enclosure	
	No.	Each	No.	Each	No.	Each
30	92251F	\$30.00	92251	\$18.00	.....	.....
60	82252F	54.00	82252	29.00	.....	.....
100	82253F	82.00	82253	43.00	.....	.....
200	82254F	114.00	82254	57.00	.....	.....
400	92255F	231.00	92255	162.00	.....	.....
600	†92256F	287.00	†92256	230.00	.....	.....
3-Pole, 230 Volts A.C.; 250 Volts D.C.						
30	92351F	\$33.00	92351	\$22.00	.....	.....
60	82352F	59.00	82352	33.00	.....	.....
100	82353F	99.00	82353	53.00	.....	.....
200	82354F	150.00	82354	83.00	.....	.....
400	92355F	317.00	92355	218.00	.....	.....
600	†92356F	384.00	†92356	303.00	.....	.....
4-Pole, 230 Volts A.C.; 250 Volts D.C.						
30	92451F	\$45.00	92451	\$32.00	.....	.....
60	92452F	73.00	92452	45.00	.....	.....
100	92453F	116.00	92453	94.00	.....	.....
200	92454F	190.00	92454	130.00	.....	.....
400	92455F	352.00	92455	293.00	.....	.....
600	†92456F	454.00	†92456	380.00	.....	.....
2-Pole, 575 Volts A.C.; 600 Volts D.C.						
30	82261F	\$61.00	.....	.....	.....	.....
30-60	.....	.....	82262	\$30.00	.....	.....
60	82262F	63.00	.....	.....	†52262	\$225.00
100	*82263F	109.00	*82263	47.00	†52263	.....
200	*82264F	132.00	*82264	64.00	52264	.....
400	*92245F	249.00	*92245	183.00	.....	.....
600	.....	.....	*92246	257.00	.....	.....
3-Pole, 575 Volts A.C.						
30	82341F	\$64.00	.....	.....	.....	.....
30-60	.....	.....	82342	\$35.00	.....	.....
60	82342F	66.00	.....	.....	†52342	\$235.00
100	82343F	116.00	82343	57.00	†52343	.....
200	82344F	175.00	82344	88.00	52344	.....
400	92345F	325.00	92345	230.00	.....	.....
600	.....	.....	†92346	333.00	.....	.....
4-Pole, 575 Volts A.C.						
30	92441F	\$96.00	.....	.....	.....	.....
30-60	.....	.....	92442	\$50.00	.....	.....
60	92442F	99.00	.....	.....	.....	.....
100	92443F	172.00	92443	106.00	.....	.....
200	92444F	222.00	92444	142.00	.....	.....
400	92445F	382.00	92445	318.00	.....	.....
600	.....	.....	92446	413.00	.....	.....

\*575 volts a.c.; 250 volts d.c. only.

†Double lugs. Standard single lugs furnished on order.

†Approved for Class I, Group D hazardous locations and all lower classifications.

**Type A Square D Heavy Duty Industrial Safety Switches**

With Arc Suppressors

Single Throw—Fusible

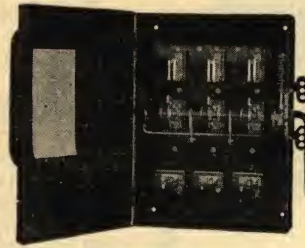
30 to 600 Ampere Switches:

Quick Make—Quick Break—Keyed Interlocked Cover Control

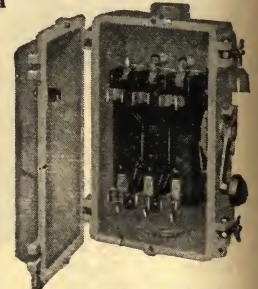
800 to 1200-Ampere Switches:

Quick Break Only—Cover Not Interlocked

Schedule A



No. 88342



No. 55342

The 60-600 ampere switches have Solder-Solderless Lugs. The 80,000 Series switches have visible blades. The 50,000 Series are compact type.

Standard finish is black enamel. 3-wire switching neutral price same as for 3-pole switch, add SWN to 3-pole No.

2-Pole, 575 Volts A.C.; 600 Volts D.C.

Amps.	HP. RATING A.C. D.C.	Sheet Steel Enclosure		Cast Aluminum Weatherproof Dust-Tight Enclosure	
		No.	Each	*No.	Each
30	7½	†88261	\$26.00	56261	\$26.00
60	15	88262	28.00	56262	28.00
100	25	88263	43.00	56263	43.00
200	50	88264	64.00	56264	64.00
400	.....	88265	149.00	.....	.....
600	.....	†88266	236.00	.....	.....
800	.....	†88247	365.00	.....	.....
1200	.....	†88248	514.00	.....	.....
3-Pole, 575 Volts A.C.					
30	7½	†88341	\$31.00	56341	\$31.00
30	7½	†88341	32.00	.....	.....
60	20	88342	33.00	56342	33.00
100	30	88343	49.00	56343	49.00
200	50	88344	79.00	56344	79.00
400	.....	88345	162.00	.....	.....
600	.....	†88346	270.00	.....	.....
800	.....	†88347	473.00	.....	.....
1200	.....	†88348	622.00	.....	.....
4-Pole, 575 Volts A.C.					
30	7½	†88441	\$38.00	.....	.....
60	20	88442	41.00	.....	.....
100	30	88443	65.00	.....	.....
200	50	88444	110.00	.....	.....
400	.....	88445	210.00	.....	.....
600	.....	†88446	341.00	.....	.....
800	.....	†88447	625.00	.....	.....
1200	.....	†88448	877.00	.....	.....

\*Interlock not keyed.

†Cast aluminum enclosures standard but cast iron supplied at same price. Enclosures are equipped with two threaded conduit hubs of proper size. Two additional holes will be drilled and tapped where pads are provided and two pipe plugs furnished at no extra cost.

†Front operated and has elevated removable base.

Interlock is not keyed.

§60-ampere switch with 30-ampere fuse spacing and clips.  
†Double lugs. Standard single lugs furnished on order.  
The 800 and 1200-ampere switches are arranged for two fuses per pole.

||575 volts a.c.; 250 volts d.c. only.

**No. 70010 Square D Cover Control Keys**

Schedule A

Fits No. 8000 series.

No. 70010.....each .80



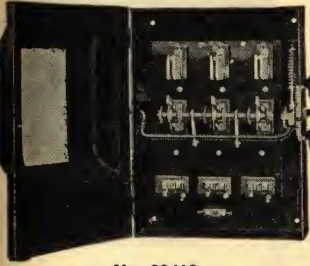


## Type A Square D Heavy Duty Industrial Safety Switches

Single Throw—Fusible  
30 to 600-Ampere Switches:

Quick Make—Quick Break—Keyed Interlocked Cover Control  
800 to 1200-Ampere Switches:

Quick Break Only—Cover Not Interlocked  
Schedule A



The 60-600-ampere switches have Solder-Solderless Lugs. The 80,000 Series switches have visible blades. The 50,000 series are compact type.

Standard finish is black enamel. 3-wire switching neutral price same as for 3-pole switch, add SWN to 3-pole No.

No. 89412

2-Pole, 230 Volts A.C.; 250 Volts D.C.

Amps.	A.C.	D.C.	HP. RATING	Sheet Steel Enclosure		Cast Aluminum Weatherproof Dust-Tight Enclosure	
				No.	Each	*No.	Each
30	2	5		88251	\$16.00	56251	\$16.00
30	2	5		88251	20.00		
60	5	10		88252	21.00	56252	21.00
100	10	15		88253	33.00	56253	33.00
200	15	30		88254	54.00	56254	54.00
400	30	50		88255	122.00		
600	..	..		88256	195.00		
800	..	..		88257	298.00		
1200	..	..		88258	413.00		

3-Wire, Solid Neutral, 2 Blades, 2 Fuses,  
230 Volts A.C.; 250 Volts D.C.

30	3	..		89311	\$18.00	59311	\$18.00	50311	\$65.00
60	7½	..		89312	24.00	59312	24.00	50312	71.00
100	15	..		89313	38.00	59313	38.00	50313	175.00
200	30	..		89314	59.00	59314	59.00	50314	252.00
400	50	..		89315	135.00				
600	..	..		89316	217.00				
800	..	..		89317	325.00				
1200	..	..		89318	460.00				

3-Pole, 230 Volts A.C.; 250 Volts D.C.

30	3	..		88351	\$20.00	56351	\$20.00	55351	\$66.00
30	3	..		88351	24.00				
60	7½	..		88352	28.00	56352	28.00	55352	73.00
100	15	..		88353	43.00	56353	43.00	55353	179.00
200	30	..		88354	64.00	56354	64.00	55354	258.00
400	50	..		88355	139.00				
600	..	..		88356	238.00				
800	..	..		88357	406.00				
1200	..	..		88358	521.00				

4-Wire, Solid Neutral, 3 Blades, 3 Fuses,  
230 Volts A.C.; 250 Volts D.C.

30	3	..		89411	\$26.00				
60	7½	..		89412	33.00				
100	15	..		89413	51.00				
200	30	..		89414	75.00				
400	50	..		89415	156.00				
600	..	..		89416	260.00				
800	..	..		89417	584.00				
1200	..	..		89418	716.00				

4-Pole, 230 Volts A.C.; 250 Volts D.C.

30	3	..		88451	\$28.00				
60	10	..		88452	34.00				
100	20	..		88453	56.00				
200	30	..		88454	100.00				
400	50	..		88455	190.00				
600	..	..		88456	327.00				
800	..	..		88457	614.00				
1200	..	..		88458	750.00				

\*Interlock not keyed.

†Cast aluminum enclosures standard but cast iron supplied at same price. Enclosures are equipped with two threaded conduit hubs of proper size. Two additional holes will be drilled and tapped where pads are provided and two pipe plugs furnished at no extra cost.

‡Front operated and has elevated removable base. Interlock is not keyed. §60-ampere switch with 30-ampere fuse spacing and clips.

¶Double lugs. Standard single lugs furnished on special order. The 800 and 1200-ampere switches are arranged for two fuses per pole.

## Type A Square D Heavy Duty Industrial Safety Switches

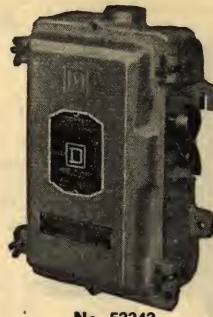
Single Throw—Not Fusible  
30 to 600-Ampere Switches:

Quick Make—Quick Break—Keyed  
Interlocked Cover Control

800 to 1200-Ampere Switches:

Quick Break Only—Cover Not  
Interlocked

Schedule A



No. 53342

The 60-600-ampere switches have Solder-Solderless Lugs.

The 84,000 and 54,000 Series have visible blades. The 51,000 and 53,000 Series are compact type.

Standard finish is black enamel.

2-Pole, 230 Volts, A.C.; 250 Volts D.C.

Amps.	A.C.	D.C.	HP. RATING	Sheet Steel Enclosure		Cast Aluminum Weatherproof Enclosure	
				No.	Each	*No.	Each
30	3	5		84251	\$15.00	51251	\$15.00
60	7½	10		84252	20.00	51252	20.00
100	15	15		84253	32.00	51253	32.00
200	25	30		84254	45.00	51254	45.00
400	50	50		84255	85.00		
600	..	..		84256	167.00		
800	..	..		84257	264.00		
1200	..	..		84258	359.00		

3-Pole, 230 Volts A.C.; 250 Volts D.C.

30	5	..		84351	\$18.00	51351	\$18.00	53351	..
60	10	..		84342	26.00	51342	26.00	53342	\$70.00
100	20	..		84343	40.00	51343	40.00	53343	..
200	40	..		84344	52.00	51344	52.00	53344	240.00
400	50	..		84345	135.00				
600	..	..		84346	217.00				
800	..	..		84347	352.00				
1200	..	..		84348	473.00				

4-Pole, 230 Volts A.C.; 250 Volts D.C.

30	5	..		81451	\$26.00				
30-60	15	..		84442	34.00				
100	25	..		84443	61.00				
200	50	..		84444	95.00				
400	..	..		84445	176.00				
600	..	..		84446	306.00				
800	..	..		84447	454.00				
1200	..	..		84448	622.00				

2-Pole, 575 Volts A.C.; 600 Volts D.C.; With Arc Suppressors

30	..	7½		84261	\$18.00	51261	\$18.00	53261	\$60.00
60	..	15		84262	23.00	51262	23.00	53262	64.00
100	..	25		84263	38.00	51263	38.00	53263	165.00
200	..	50		84264	49.00	51264	49.00	53264	228.00
400	..	..		84265	122.00				
600	..	..		84266	176.00				
800	..	..		84247	264.00				
1200	..	..		84248	359.00				

3-Pole, 575 Volts A.C.; With Arc Suppressors

30	10	..		84341	\$21.00	51341	\$21.00	53341	\$66.00
60	25	..		84342	26.00	51342	26.00	53342	70.00
100	40	..		84343	40.00	51343	40.00	53343	..
200	50	..		84344	52.00	51344	52.00	53344	240.00
400	..	..		84345	135.00				
600	..	..		84346	217.00				
800	..	..		84347	352.00				
1200	..	..		84348	473.00				

4-Pole, 575 Volts A.C.; With Arc Suppressors

30-60	25	..		84442	\$34.00				
100	40	..		84443	61.00				
200	50	..		84444	95.00				
400	..	..		84445	176.00				
600	..	..		84446	306.00				
800	..	..		84447	454.00				
1200	..	..		84448	622.00				

\*Interlock not keyed.

†Cast aluminum enclosures standard but cast iron supplied at same price. Enclosures are equipped with two threaded conduit hubs of proper size. Two additional holes will be drilled and tapped where pads are provided and two pipe plugs furnished at no extra cost.

‡Front operated and has elevated removable base. Interlock not keyed. ¶Double lugs. Standard single lugs furnished on order. The 800 and 1200-ampere switches are arranged for two fuses per pole.

§575 volts a.c.; 250 volts d.c. only.

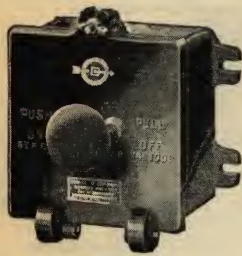
¶Dust-tight enclosures, approved for Class II, Group G hazardous locations, available at same price, add suffix D when ordering.



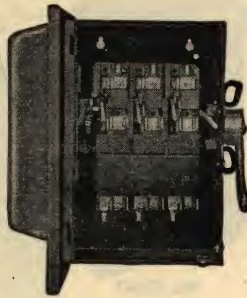
## Type C Square D Enclosed Industrial Safety Switches

Single Throw—Quick Make—Quick Break

Schedule A



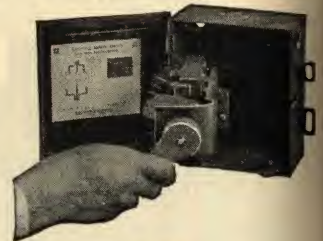
No. 7251



No. 46352



No. 46352R



No. 47311

Indoor types; 30-60-ampere finished in aluminum, 100-ampere and over finished in black enamel. Raintight switches finished in aluminum. The 60-600-ampere switches

have solder-solderless lugs. The 3-wire switching neutral price is the same as for 3-pole switch, add SWN to 3-pole No.

## 2-Pole, 230 Volts A.C.; 250 Volts D.C.

Fusible

Raintight

One Hub in Top

Amps.	HP. RATING		Sheet Steel Enclosure		Without Hub		One Hub in Top		Hub Size In.	Not Fusible		Sheet Steel Enclosure		
	A.C.	D.C.	No.	Each	No.	Each	No.	Each		Amps.	HP. RATING	D.C.	No.	Each
30	2	5	*45251	\$9.00	.....	.....	.....	.....	.....	30	3	5	*43251	\$8.00
30	2	5	*46251	14.00	.....	.....	.....	.....	.....	60	7½	10	*41252	14.00
30	..	..	‡ 7251	.....	45251R	\$16.00	45251RD	\$17.50	1	100	15	15	41253	24.00
60	5	10	*46252	16.00	46252R	30.00	46252RE	31.50	1¼	200	25	30	41254	32.00
100	10	15	46253	25.00	46253R	40.00	46253RH	42.50	2	400	50	50	41255	80.00
200	15	30	46254	38.00	46254R	56.00	46254RW	60.00	2½	600	....	..	‡41256	150.00
400	30	50	46255	96.00	.....	.....	.....	.....	.....	...	....	..	.....	.....
600	....	..	‡46256	190.00	.....	.....	.....	.....	.....	...	....	..	.....	.....

## 3-Wire, Solid Neutral, 2 Blades, 2 Fuses, 230 Volts A.C.; 250 Volts D.C.

30	3	..	*47311	\$10.00	47311R	\$17.00	47311RD	\$18.50	1	..	..	..	..	..
60	7½	..	*47312	17.00	47312R	31.00	47312RE	32.50	1¼	..	..	..	..	..
100	15	..	47313	26.00	47313R	42.00	47313RH	44.50	2	..	..	..	..	..
200	30	..	47314	48.00	47314R	58.00	47314RW	62.00	2½	..	..	..	..	..
400	50	..	47315	105.00	47315R	138.00	.....	.....	.....	..	..	..	..	..
600	..	..	‡47316	204.00	47316R	258.00	.....	.....	.....	..	..	..	..	..

## 3-Pole, 230 Volts A.C.; 250 Volts D.C.

30	3	..	*45351	\$11.00	.....	.....	.....	.....	...	30	5	..	*43351	\$10.00
30	3	..	*46351	18.00	45351R	\$20.00	45351RD	\$21.50	1	60	10	..	*41352	18.00
60	7½	..	*46352	20.00	46352R	32.00	46352RE	33.50	1¼	100	20	..	41353	27.00
100	15	..	46353	31.00	46353R	46.00	46353RH	48.50	2	200	40	..	41354	44.00
200	30	..	46354	53.00	46354R	62.00	46354RW	66.00	2½	400	50	..	41355	96.00
400	50	..	46355	111.00	46355R	141.00	.....	.....	.....	600	..	..	‡41356	196.00
600	..	..	‡46356	219.00	46356R	294.00	.....	.....	.....	.....	..	..	.....	.....

## 4-Wire, Solid Neutral, 3 Blades, 3 Fuses, 230 Volts A.C.; 250 Volts D.C.

30	3	..	*47411	\$14.00	47411R	\$25.00	47411RD	\$26.50	1	..	..	..	..	..
60	7½	..	*47412	23.00	47412R	38.00	47412RE	39.50	1¼	..	..	..	..	..
100	15	..	47413	36.00	47413R	56.00	47413RH	58.50	2	..	..	..	..	..
200	30	..	47414	63.00	47414R	79.00	47414RW	83.00	2½	..	..	..	..	..
400	50	..	47415	135.00	47415R	230.00	.....	.....	.....	..	..	..	..	..
600	..	..	‡47416	242.00	47416R	403.00	.....	.....	.....	..	..	..	..	..

## 4-Pole, 230 Volts A.C.; 250 Volts D.C.

30	3	..	*45451	.....	.....	.....	.....	.....	...	30-60	15	..	41452	\$24.00
30	3	..	‡46451	\$24.00	.....	.....	.....	.....	...	100	25	..	41453	45.00
60	10	..	*46452	29.00	.....	.....	.....	.....	...	200	50	..	41454	80.00
100	20	..	46453	47.00	.....	.....	.....	.....	...	400	..	..	41455	137.00
200	30	..	46454	85.00	.....	.....	.....	.....	...	600	..	..	‡41456	240.00
400	50	..	46455	158.00	.....	.....	.....	.....	...	.....	..	..	.....	.....
600	..	..	‡46456	290.00	.....	.....	.....	.....	...	.....	..	..	.....	.....

## 3-Pole, 575 Volts A.C.; With Arc Suppressors

30	7½	..	*45341	\$19.00	46341R	\$33.00	46341RD	\$34.50	1	30	10	..	43341	\$14.00
60	20	..	*46342	23.00	46342R	38.00	46342RE	39.50	1¼	30-60	25	..	*41342	.....
100	30	..	46343	42.00	46343R	59.00	46343RH	61.50	2	100	40	..	41343	35.00
200	50	..	46344	63.00	46344R	81.00	46344RW	85.00	2½	200	50	..	41344	48.00

## 4-Pole, 575 Volts A.C.; With Arc Suppressors

30	7½	..	‡46441	\$31.00	.....	.....	.....	.....	...	30-60	25	..	41442	\$31.00
60	20	..	46442	35.00	.....	.....	.....	.....	...	100	40	..	41443	57.00
100	30	..	46443	63.00	.....	.....	.....	.....	...	200	50	..	41444	82.00
200	50	..	46444	102.00	.....	.....	.....	.....	...	.....	..	..	.....	.....

\*Has swing-out interior for easier wiring.

‡60-ampere switch with 30-ampere fuse spacing and clips.

‡Double lugs. Standard single lugs furnished on order.

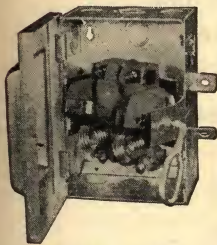
§Cast iron enclosure, including end plates.



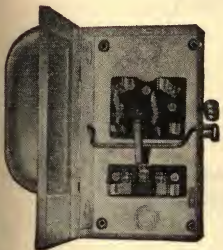
## Square D General Purpose Single Throw Safety Switches

30-Ampere Switches: Not Quick Break or Quick Make—60-600 Ampere Switches: Quick Break Only

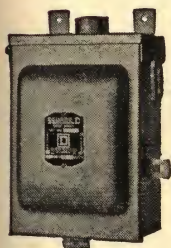
*Schedule A*  
All 30-60-ampere switches have aluminum finish. The 100-ampere and above have black enamel finish; raintight, aluminum finish. Blue label switches are rotor disc type, all others are blade type. The 3-wire switching neutral price is the same as for 3-pole switch, add SWN to 3-pole No.



No. 99211 With Swing-Out Interior



No. 97313



No. 97311RC Raintight



No. 90211 Blue Label

### Fusible

2-Wire, Solid Neutral, 1 Blade, 1 Fuse, 115 Volts A.C.; 125 Volts D.C.

Amps.	Fuse	Flat Base		Swing-out Interior		Blue Label		Without Hub		Raintight		
		No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	Hub Size, In.
30	Plug	97211C	\$2.70	97211	\$3.50	90211	\$2.70	97211R	\$6.50	97211RC	\$8.00	3/4
30	Plug			*97211WH	4.70	*90211M	2.70			97211RD	8.00	1
30	Cart	97251C	3.00	97251	3.60			97251R	7.00	97251RC	8.50	3/4
30	Cart									97251RD	8.50	1
2-Pole, 230 Volts A.C.; 250 Volts D.C.												
30	Plug	*99211C	\$3.20	*99211	\$3.80	*93211	\$3.20	*99211R	\$7.00	99211RC	\$8.50	3/4
30	Plug			*99211WH	5.20	*93211C	5.20			99211RD	8.50	1
30	Plug					*93011	8.00					
30	Plug					*93011M	10.00					
30	Cart	98251C	4.00	98251	4.50	93251	4.00	98251R	7.50	98251RC	9.00	3/4
30	Cart									98251RD	9.00	1
60				96252	9.50	34302	10.00	96252R	9.50	96252RE	16.50	1 1/4
100		96253	19.00					96253R	28.00	96253RH	30.50	2
200		96254	35.00					96254R	45.00	96254RW	49.00	2 1/2
400		96255	96.00									
600		96256	190.00									

3-Wire, Solid Neutral, 2 Blades, 2 Fuses, 125/250 Volts A.C. or D.C.; 230 Volts A.C.												
30	Plug	*97311C	\$3.50	97311	\$4.00	*90311	\$3.50	*97311R	\$7.50	97311RC	\$9.00	3/4
30	Plug			*97311WH	5.50					97311RD	9.00	1
30	Cart	97351X		97351	5.00	90351	5.00	97351R	8.50	97351RC	10.00	3/4
30	Cart									97351RD	10.00	1
60		97312D		97312	10.00	34302	10.00	97312R	16.00	97312RE	17.50	1 1/4
100		97313	20.00					97313R	29.00	97313RH	31.50	2
200		97314	44.00					97314R	54.00	97314RW	58.00	2 1/2
400		97315	105.00									
600		97316	204.00									

3-Pole, 230 Volts A.C.												
30	Plug			99311	\$6.00			99311R	\$12.00	99311RC	\$13.50	3/4
30	Plug									99311RD	13.50	1
30	Cart			99351	7.50			99351R	13.00	99351RC	14.50	3/4
30	Cart									99351RD	14.50	1
60				96352	12.00			96352R	17.00	96352RE	19.50	1 1/4
100		96353	22.00					96353R	33.00	96353RH	35.50	2
200		96354	48.00					96354R	58.00	96354RW	62.00	2 1/2
400		96355	111.00									
600		96356	219.00									

4-Wire, Solid Neutral, 3 Blades, 3 Fuses, 230 Volts A.C.												
30	Cart			97451	\$10.00			97451R	\$17.00	97451RD	\$18.50	1
60		97412	\$20.00									
100		97413	33.00									
200		97414	59.00									
400		97415	135.00									
600		97416	242.00									

4-Pole, 230 Volts A.C.												
30	Plug	96411	\$10.00									
30	Cart	96451	11.00									
60		96452	21.00									
100		96453	47.00									
200		96454	85.00									
400		96455	158.00									
600		96456	290.00									

### Not Fusible

2-Pole, 230 Volts A.C.; 250 Volts D.C.

30				91251	\$3.00							
60				91252	9.00							
100		91253	\$18.00									
200		91254	26.00									
400		91255	80.00									
600		91256	150.00									

### 3-Pole, 230 Volts, A.C.

30				91351	\$5.50							
60				91352	11.00							
100		91353	\$20.00									
200		91354	35.00									
400		91355	86.00									
600		91356	173.00									

### 4-Pole, 230 Volts, A.C.

30		91451	\$10.00									
60		91452	19.00									
100		91453	45.00									
200		91454	80.00									
400		91455	137.00									
600		91456	240.00									

\*115/230 volts a.c.; 125/250 volts d.c. only.  
†115 volts a.c. only.  
‡Dual water heater switch; two No. 92311's in one box.  
§Same as No. 90211 except in larger box.  
¶Has dead-front shield over interior.  
||Double lugs. Standard single lugs furnished on order.



## Square D Service Equipment

Sequence: Meter—Switch—Fuse

115 and 115/230 Volts A.C.

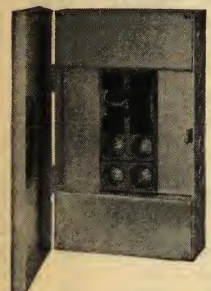
Schedule A

Standard finish is aluminum. A 30-ampere cartridge type Square D fuse-break will be supplied in place of 60-ampere Square D fuse-break at no additional cost if specified on order.

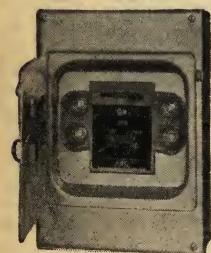
## Group C1 Pull-Out Main Switch—Fully Interlocked (or Dead Main Fuses)—Square D Fuse-Breaks



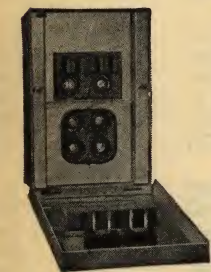
No. 33582S



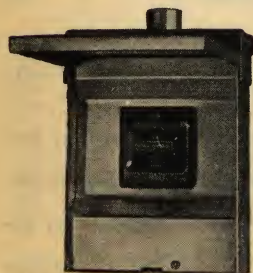
No. 39532H



No. 32582



No. 33401



No. 39902D

MAINS		BRANCH CIRCUITS		*End Walls	Grounded		Neutral		Insulated		Gourndable Neutral			
		30A. 2W. S/N	60A. 3W. S/N		Surface Mounting No.	Each	Flush Mounting No.	Each	Surface Mounting No.	Each	Flush Mounting No.	Each		
60	3	2	2	..	C	.....	.....	.....	.....	39112	\$10.00	37122	\$11.00	
	3	2	2	..	M	.....	.....	.....	.....	39132H	10.00	.....	.....	
	3	2	2	2	C	.....	.....	.....	.....	.....	.....	.....	.....	
	3	2	2	2	M	.....	.....	.....	.....	.....	.....	.....	.....	
	3	2	2	4	C	.....	.....	.....	.....	39512	12.00	37522	13.00	
	3	2	2	4	M	.....	.....	.....	.....	39532H	12.00	.....	.....	
	3	2	2	6	C	.....	.....	.....	.....	39712	17.00	37722	18.00	
	3	2	2	6	M	.....	.....	.....	.....	39732H	17.00	.....	.....	
	3	2	2	8	C	.....	.....	.....	.....	39912	22.00	37922	23.00	
	3	2	2	8	M	.....	.....	.....	.....	39932H	22.00	.....	.....	
	3	2	2	4	1	C	33582S	\$12.00	33582F	\$13.00	33582ZS	9.50	33582ZF	10.50
	3	2	2	4	1	M	33582H	12.00	.....	.....	.....	.....	.....	.....
	3	2	2	4	1	C	†33582PS	13.00	†33582PF	14.00	.....	.....	.....	.....
	3	2	2	4	1	M	†33582PH	13.00	.....	.....	.....	.....	.....	.....
100	3	2	2	6	1	C	†33782PS	25.00	†33782PF	21.00	.....	.....	.....	.....
	3	2	2	6	1	C	33782S	19.00	33782F	20.00	.....	.....	.....	.....
	3	2	2	8	1	C	†33982PS	25.00	†33982PF	28.00	.....	.....	.....	.....
	3	2	2	8	1	C	33982S	24.00	33982F	27.00	.....	.....	.....	.....
	3	2	2	4	1	C	**33583PS	14.00	**33583PF	15.00	.....	.....	.....	.....
	3	2	2	4	1	M	**33583PH	14.00	.....	.....	.....	.....	.....	.....
	3	2	2	4	1	C	.....	.....	.....	.....	.....	.....	.....	.....
	3	2	2	4	1	C	.....	.....	.....	.....	.....	.....	.....	.....
	3	2	2	4	1	C	.....	.....	.....	.....	.....	.....	.....	.....
	3	2	2	4	1	C	.....	.....	.....	.....	.....	.....	.....	.....

## Group B5 Toggle or Rotary Switch Main—Fuseless

30	3	2	..	2	..	C	..	..	..	†97311WH	\$5.50	..	..
	3	2	..	4	..	C	32482	\$11.00	32472	\$12.00	..	..	..
	3	2	..	6	..	C	32682	12.00	32672	13.00	..	..	..
60	3	2	..	4	1	C	32582	12.00	32572	13.00	..	..	..
100	3	2	..	4	1	C	32583	14.00	32573	15.00	..	..	..

## Group D1 Letterbox Type—Cover-Operated Main Switch—Fully Interlocked (or Dead Main Fuses)

Indoor Type—For Ganging or Single Installations

For ganging type with removable sidewalls add X to number, furnished at same price.

30	2	1	1P	..	..	C	33021	\$8.50	..	..	..	..	..
	2	2	2P	..	..	C	33001	9.00	..	..	..	..	..
	3	2	2P	..	..	C	§33091M	16.00	..	..	..	..	..
	3	2	2P	..	..	C	33031	9.50	..	..	..	..	..

No. 29001 ganging connector available, 30 cents each.

## Non-Ganging Type—With Swingout Interiors for Easier Wiring—Indoor Type

30	2	1	1P	2	..	C	33221	\$11.00	..	..	..	..	..
	2	1	1P	4	..	C	33421	12.00	..	..	..	..	..
	2	2	2P	2	..	C	33201	11.00	..	..	..	..	..
	2	2	2P	4	..	C	33401	12.00	..	..	..	..	..
	3	2	2P	2	..	C	33231	11.00	..	..	..	..	..
	3	2	2P	4	..	C	33431	12.00	..	..	..	..	..

## Raintight Outdoor Type—Surface Mounting

Amps.	MAINS		Fusible Poles	BRANCH CIRCUITS		Group	Grounded		Neutral		Hub Size In.
				30 A. 2 W. S/N	60 A. 3 W. S/N		Without Hub	Each	One Hub in Top	Each	
30	2	1	1P	..	..	D1	39021	\$11.00	39021D	\$12.50	1
	3	2	2P	..	..	D1	39031	12.00	39031D	13.50	1
	3	2	2	4	1	B5	32582R	18.00	32582RE	19.50	1 1/4
	3	2	2	..	..	C1	39902	12.00	39902D	13.50	1
60	3	2	2	..	..	C1	..	..	39902E	13.50	1 1/4
	3	2	2	..	..	C1	..	..	39902YS	13.50	1 1/4
	3	2	2	4	1	C1	33582R	18.00	33582RE	19.50	1 1/4
	3	2	2	4	1	C1	†33582PR	19.00	†33582PRE	20.50	1 1/4
	3	2	2	4	1	B5	32583R	20.00	32583RG	22.50	1 1/2
	3	2	2	..	..	D1	39903	37.00	39903G	39.50	1 1/2
100	3	2	2	4	1	C1	†33583PR	20.00	**33583PRG	22.50	1 1/2

\*C is conduit endwall; M is metering endwall.

†60-ampere main and range circuits are wired in parallel. 60-ampere main switch controls lighting circuits only.

§Has provision for one meter socket at top, for off peak water heat service.

¶Group A5—Knife switch main, fuseless.

||Has 1 1/4-inch nipple in top and external mounting brackets.

\*\*Main switch 60 amperes with 100-ampere main lugs and connectors.



## Square D Service Equipment

Sequence: Meter—Switch—Fuse. Sealable Main Fuses

115 Volts and 115/230 Volts A.C.

## Schedule A

Group B3: Knife Switch Mains—Live Front

Group B4: Toggle Switch Mains—Live Front—Square D

Fuse-Break in 60-Ampere Branches Only



No. S-3104

Standard finish: all boxes and surface covers, aluminum; flush covers, gray enamel.

MAINS				Surface Mounting		
Amps.	Poles	Blades	Fused Poles	Group	No.	Each
30	2	1	1P	B3	97211CS	\$2.70
30	2	2	2P	...	.....	
30	2	2	2C	...	.....	
30	3	2	2P	B3	97311CS	3.50
60	2	2	2	...	.....	
60	3	2	2	B3	97321S	10.00
100	2	2	2	...	.....	
100	3	2	2	B3	97313CS	20.00

With Transformer Barrier and Knockout for Despard Fittings

and Knockout for Despard											
Fittings											
MAINS			BRANCH FUSES			Flush Mounting		Surface Mounting			
Amps.	Poles	Blades	Fused Amps.	30	60	Amps.	Group	No.	Each	No.	Each
30	2	1	1P	2	..	B4		TF-2102	\$12.00	TS-2102	\$11.00
30	2	1	1P	4	..	B4		TF-2104	13.00	TS-2104	12.00
30	3	2	2P	4	..	B4		TF-3104	14.00	TS-3104	13.00
30	3	2	2P	6	..	B4		TF-3106	16.00	TS-3106	15.00
30	3	2	2P	8	..	B4		TF-3108	22.00	TS-3108	21.00
60	3	2	2	6	..	B4		TF-3206	19.00	TS-3206	18.00
60	3	2	2	8	..	B4		TF-3208	26.00	TS-3208	25.00
60	3	2	2	10	..	B4		TF-3210	31.00	TS-3210	30.00
60	3	2	2	12	..	B4		TF-3212	36.00	TS-3212	35.00

Without Transformer Barrier and Knockouts for Despard Fittings

BARRIER and Knockouts for Despard Fittings										
MAINS			BRANCH FUSES		Flush Mounting		Surface Mounting			
Amps.	Poles	Blades	Fused Amps.	30 60	Amps.	Group	No.	Each	No.	Each
30	2	1	1P	2	..	B4	F-2102	\$11.00	S-2102	\$10.00
30	2	1	1P	4	..	B4	F-2104	12.00	S-2104	11.00
30	3	2	2P	4	..	B4	F-3104	13.00	S-3104	12.00
30	3	2	2P	6	..	B4	F-3106	15.00	S-3106	14.00
30	3	2	2P	8	..	B4	F-3108	21.00	S-3108	20.00
60	3	2	2	6	..	B4	F-3206	18.00	S-3206	17.00
60	3	2	2	8	..	B4	F-3208	25.00	S-3208	24.00
60	3	2	2	10	..	B4	F-3210	30.00	S-3210	28.00
60	3	2	2	12	..	B4	F-3212	35.00	S-3212	34.00

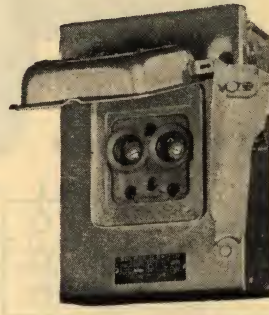
## Square D Meter Service Switches

Sequence: Switch—Fuse—Meter  
Accessible Main Fuses

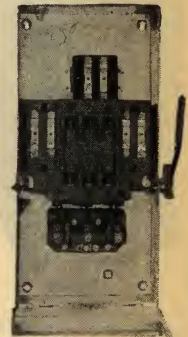
Insulated Neutral—Meter Test and Not Meter Test

115 Volts and 115/230 Volts A.C.

## Schedule A



No. 30331



No. 30413

All of these switches are bottom connected, and have meter endwalls.

Standard finish, aluminum.

MAINS				BRANCHES		Meter Test		Not Meter Test	
Amps.	Poles	Fused Poles		30	30	No.	With Endwall Each	No.	With Endwall Each
30	2	1P	..	..	..	30231	\$9.00	10231	\$8.50
30	2	2P	..	..	..	30211	9.50	10211	9.00
30	3	2P	..	..	..	30331	10.00	10331	9.50
30	3	2C	..	..	..	30371	12.00	10371	11.00
30	3	3C	..	..	..	*30391	28.00	*10391	26.00
60	3	2	..	..	..	30372	26.00	10372	23.00
60	3	2	..	..	..	*30312	40.00	*10312	37.00
60	3	3	..	..	..	*30392	44.00	*10392	38.00
60	4	3	..	..	..	*30412	57.00	*10412	49.00
100	3	2	..	..	..	30373	42.00	10373	39.00
100	3	2	..	..	..	*30313	42.00	*10313	39.00
100	3	3	..	..	..	*30393	71.00	*10393	50.00
100	4	3	..	..	..	*30413	85.00	*10413	60.00
200	3	2	..	..	..	*30314	96.00	*10314	83.00
200	3	3	..	..	..	*30394	135.00	*10394	90.00
200	4	3	..	..	..	*30414	168.00	*10414	116.00
400	3	2	..	..	..	*30315	203.00	*10315	180.00
400	3	3	..	..	..	*30395	240.00	*10395	188.00
400	4	3	..	..	..	.....	.....	*10415	203.00

\*Switches with visible blades.

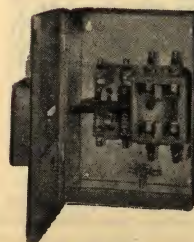
## Square D Meter Service Switches

Sequence: Switch—Meter—Fuse—Accessible  
Main Fuses

Insulated Neutral—Test Facilities

115 Volts and 115/230 Volts A.C.

## Schedule A

Switches have meter endwalls.  
Standard finish, aluminum.

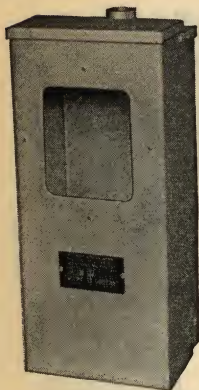
No. 31312

MAINS				BRANCH FUSES	
No.	With End-wall, Each	Amps.	Poles	Blades	Amps. Amps.
31211	\$9.00	30	2	1	..
31311	10.00	30	3	2	..
*31312	16.00	60	3	2	..
*31352	27.00	60	3	2	4 2
*31372	30.00	60	3	2	6 2
*31313	30.00	100	3	2	..

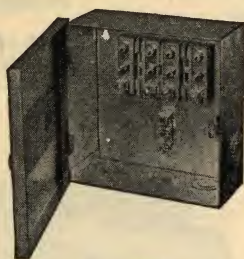
\*Rotor disc type. Grounded neutral.



### Square D Meter Boxes Standard Finish—Aluminum

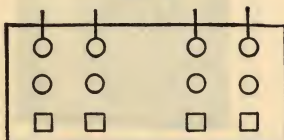


No. 12332D



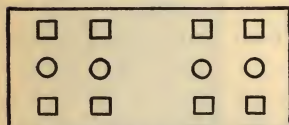
No. 12302

#### Wiring Diagrams No. 1

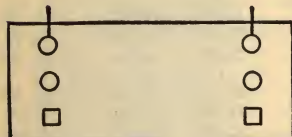


2 or 3 Wire, Grounded Neutral

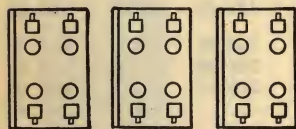
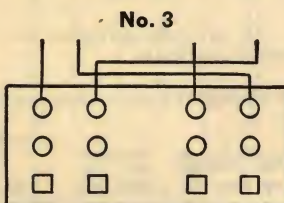
No. 2

2 or 3-Wire  
Insulated Neutral—12464  
Insulated Groundable  
Neutral—12312, 12342D

No. 4

2-Wire  
Grounded Neutral—12232D  
Insulated Groundable  
Neutral—12202

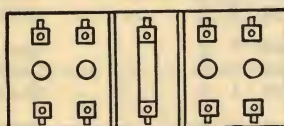
No. 7

4-Wire  
Insulated Neutral

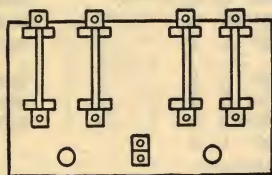
No. 3

2 or 3-Wire  
Grounded Neutral—12362D  
Insulated Groundable  
Neutral—12322

No. 5

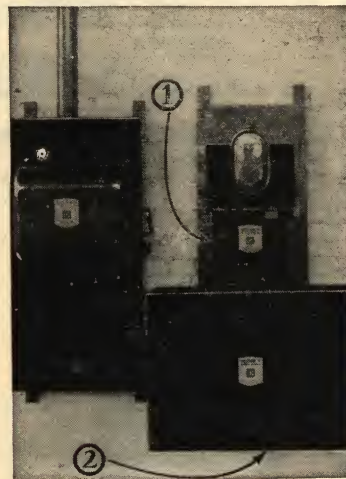
2 or 3-Wire  
Insulated Neutral

No. 9

2 or 3-Wire  
Insulated Neutral

### No. 13991 Square D Meter Test Block Cabinets

(Cabinet Marked "1" in Illustration Below)



Box is hinged at top and has tapped holes in back to mount "States" and "Eastern Specialty" (Type E-4) meter test blocks. These test blocks are used in combination with current transformers or with current and potential transformers for testing watt-hour meters.

Cabinet has 60 and 100-ampere standardized shutter openings at top. Furnished with blank shutters in place.

Height, 11 $\frac{1}{8}$  inches. Width, 12 $\frac{7}{8}$  inches. Depth, 4 $\frac{5}{8}$  inches.

Standard finish, aluminum.

No. 13991.....each \$7.00

### Square D Current Transformer Cabinets

(Cabinet Marked "2" in Illustration Above)

Standard finish, aluminum.

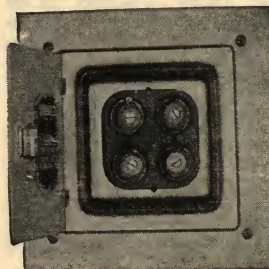
No. 13922 accommodates one or two transformers and has one-piece removable cover hinged at long side. Drilled for current transformer. Knockouts provided at side and top for line, load and meter wires.

No. SK2040 is similar to No. 13992, except has sealing stud with wing nut in place of spring latch.

No. SK2146 has removable cover and accommodates three transformers.

No. SK2256 accommodates one transformer.

No.	Each	Height Inches	Width Inches	Depth Inches
13992	\$25.00	24 $\frac{5}{8}$	32 $\frac{5}{8}$	10 $\frac{1}{8}$
SK2040	25.00	24 $\frac{5}{8}$	32 $\frac{5}{8}$	10 $\frac{1}{8}$
SK2146	54.00	36 $\frac{5}{8}$	32 $\frac{5}{8}$	10 $\frac{1}{8}$
SK2256	25.00	18 $\frac{5}{8}$	18 $\frac{5}{8}$	9 $\frac{1}{8}$



### Square D Fuse Cabinets

#### Schedule A

Rated at 30 amperes, for 125/250-volt 2 or 3-wire a.c. or d.c. Fuse shells will accommodate either standard or non-tamperable plug fuses. Neutrals are insulated from box.

Aluminum finish.

No. 37421 is illustrated.

\*For outside dimensions of flush front, add about 1 $\frac{1}{4}$  in.

Surface No.	39211	39411	39611	39811	39011	39111
Flush No.	37221	37421	37621	37821	37021	37121
Each	\$4.00	5.00	8.00	10.00	15.00	20.00
No. Branches	2	4	6	8	10	12
*Height..inches	6 $\frac{5}{8}$	6 $\frac{5}{8}$	11 $\frac{1}{8}$	14 $\frac{1}{8}$	15 $\frac{1}{4}$	16 $\frac{7}{8}$
*Width..inches	6 $\frac{5}{8}$	6 $\frac{5}{8}$	7 $\frac{3}{8}$	7 $\frac{3}{8}$	7 $\frac{3}{8}$	7 $\frac{3}{8}$
Depth..inches	2 $\frac{3}{4}$	2 $\frac{3}{4}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$

Amp.	Volts	Wire No.	Leads	Wiring Dia-gram Meter	Test Block No. without Leads	Indoor No.	Each	Outdoor No.	Each	Hub Size In.
*30	125	2	4	Yes	SK2890	12202	\$8.00	12232D	\$9.00	1
†30	250/600	2-3	9	No	.....	12461	10.00	.....	.....	.....
*60	125/250	2-3	3	Yes	SK2891	12322	10.00	12362D	12.00	1
*60	125/250	2-3	1	Yes	SK2892	12302	10.00	12332D	12.00	1
*60	125/250	2-3	2	No	SK2893	12312	10.00	12342D	12.00	1
†60	250/600	2-3	5	No	SK2349	12462	17.00	.....	.....	.....
†60	250/600	4	7	No	SK2684	12662	19.00	.....	.....	.....
†100	250/600	2-3	5	No	SK2305	12463	20.00	.....	.....	.....
†100	250/600	4	7	No	SK2685	12663	30.00	.....	.....	.....
†200	250/600	2-3	2	No	SK2306	12464	27.00	.....	.....	.....

\*Back-off nut type of test block. †Removable link type of test block. ‡Outdoor meter box only—no test block—No. 12002D—each, \$7.00. §One-inch hub furnished as standard; 1 $\frac{1}{4}$ -inch hub will be furnished at no extra cost, if specified.



## Square D Industrial Circuit Breakers

Manually Operable—Quick Make—Quick Break

250 and 600 Volts A.C.; 125/250 and 250 Volts D.C.

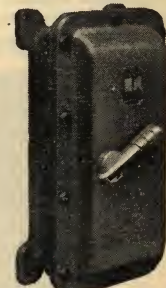
Schedule D1



No. 77350



No. 77670Y



No. 77716X

### 2-Pole, 250 Volts A.C.; 125/250 Volts D.C., Non-Interchangeable Trip

#### Type L, Breaker Unit, 50-Ampere Frame

Amps.	*Dust-Resisting Sheet Steel Enclosure			Weatherproof and Dust-Tight			Cast Iron Enclosures Class II—Group G			Class I—Group D		
	No.	Each		No.	Each	†Drilling Inches	No.	Each	†Drilling Inches	No.	Each	†Drilling Inches
15	76215	\$19.00		76215D	\$35.00	3/4	†	.....	...	76215X	\$41.00	3/4
20	76220	19.00		76220D	35.00	3/4	†	.....	...	76220X	41.00	3/4
25	76225	19.00		76225D	35.00	1	†	.....	...	76225X	41.00	1
35	76235	19.00		76235D	35.00	1 1/4	†	.....	...	76235X	41.00	1 1/4
50	76250	19.00		76250D	35.00	1 1/4	†	.....	...	76250X	41.00	1 1/4

### 3-Pole, 250 Volts A.C.; 125/250 Volts D.C., Non-Interchangeable Trip

#### Type L Breaker Unit, 50-Ampere Frame

15	76315	\$26.00	76315D	\$50.00	3/4	76315Y	\$54.00	3/4	76315X	\$62.00	3/4
20	76320	26.00	76320D	50.00	3/4	76320Y	54.00	3/4	76320X	62.00	3/4
25	76325	26.00	76325D	50.00	1	76325Y	54.00	1	76325X	62.00	1
35	76335	26.00	76335D	50.00	1 1/4	76335Y	54.00	1 1/4	76335X	62.00	1 1/4
50	76350	26.00	76350D	50.00	1 1/4	76350Y	54.00	1 1/4	76350X	62.00	1 1/4

### 2-Pole, 250 Volts A.C.; 125/250 Volts D.C., Non-Interchangeable Trip

#### Type ML2, Breaker Unit, 100-Ampere Frame

70	77270	\$37.00	77270D	\$78.00	1 1/2	77270Y	\$98.00	1 1/2	77270X	\$117.00	1 1/2
90	77290	37.00	77290D	78.00	1 1/2	77290Y	98.00	1 1/2	77290X	117.00	2
100	77216	37.00	77216D	78.00	1 1/2	77216Y	98.00	1 1/2	77216X	.....	2

### 3-Pole, 250 Volts A.C.; 125/250 Volts D.C., Non-Interchangeable Trip

#### Type ML2, Breaker Unit, 100-Ampere Frame

70	77370	\$47.00	77370D	\$88.00	1 1/2	77370Y	\$107.00	1 1/2	77370X	\$126.00	1 1/2
90	77390	47.00	77390D	88.00	1 1/2	77390Y	107.00	1 1/2	77390X	126.00	2
100	77316	47.00	77316D	88.00	1 1/2	77316Y	107.00	1 1/2	77316X	126.00	2

### 2-Pole, 600 Volts A.C.; 250 Volts D.C., Non-Interchangeable Trip

#### Type ML2, Breaker Unit, 100-Ampere Frame

15	77615	\$35.00	77615D	\$65.00	1 1/4	77615Y	\$71.00	1 1/4	77615X	\$84.00	3/4
20	77620	35.00	77620D	65.00	1 1/4	77620Y	71.00	1 1/4	77620X	84.00	3/4
25	77625	35.00	77625D	65.00	1 1/4	77625Y	71.00	1 1/4	77625X	84.00	1
35	77635	35.00	77635D	65.00	1 1/4	77635Y	71.00	1 1/4	77635X	84.00	1 1/4
50	77650	35.00	77650D	65.00	1 1/4	77650Y	71.00	1 1/4	77650X	84.00	1 1/4
70	77670	48.00	77670D	90.00	1 1/2	77670Y	109.00	1 1/2	77670X	128.00	1 1/2
90	77690	48.00	77690D	90.00	1 1/2	77690Y	109.00	1 1/2	77690X	128.00	1 1/2
100	77616	48.00	77616D	90.00	1 1/2	77616Y	109.00	1 1/2	77616X	128.00	1 1/2

### 3-Pole, 600 Volts A.C.; 250 Volts D.C., Non-Interchangeable Trip

#### Type ML2, Breaker Unit, 100-Ampere Frame

15	77715	\$44.00	77715D	\$73.00	1 1/4	77715Y	\$78.00	1 1/4	77715X	\$93.00	3/4
20	77720	44.00	77720D	73.00	1 1/4	77720Y	78.00	1 1/4	77720X	93.00	3/4
25	77725	44.00	77725D	73.00	1 1/4	77725Y	78.00	1 1/4	77725X	93.00	1
35	77735	44.00	77735D	73.00	1 1/4	77735Y	78.00	1 1/4	77735X	93.00	1 1/4
50	77750	44.00	77750D	73.00	1 1/4	77750Y	78.00	1 1/4	77750X	93.00	1 1/4
70	77770	58.00	77770D	99.00	1 1/2	77770Y	119.00	1 1/2	77770X	138.00	1 1/2
90	77790	58.00	77790D	99.00	1 1/2	77790Y	119.00	1 1/2	77790X	138.00	1 1/2
100	77716	58.00	77716D	99.00	1 1/2	77716Y	119.00	1 1/2	77716X	138.00	1 1/2

\*With side-operating handle.

†These enclosures furnished with standard conduit openings of sizes as shown—one in top, two in bottom, except 2-pole, 250 volts a.c. with one in top and one in bottom.

‡For 250-volt d.c. devices add D.C. to number.

‡Use Class I, Group D.



## Square D Industrial Circuit Breakers

Manually Operated—Quick Make—Quick Break  
Non-Interchangeable Trip Units

Type ML3 Breaker Unit, 225-Ampere Frame  
250 and 600 Volts A.C.; 125-250 and 250 Volts D.C.

Schedule D1



No. 78318

Has a solderless connector which offers ease of inserting heavy cable by swinging open the hinged top of the lug. It is only necessary to cut the cable to proper length, remove  $1\frac{1}{4}$  inches of insulation and lay the cable in the lug, swing the hinged top into position and tighten a set screw.

Trip ratings are 125 to 225 amperes.

Available in sheet steel dust-resisting enclosures with side operated handle for 3 and 4-wire solid neutral applications in addition to 2 and 3-pole devices. Also furnished in panelboards and switchboards.

### Dust-Resisting Sheet Steel Enclosure

Amps.	2-Pole, 250V. A.C. 125-250V. D.C.		3-Pole, 250V. A.C. 125-250V. D.C.		2-Pole, 600V. A.C. 250V. D.C.		3-Pole, 600V. A.C. 250V. D.C.	
	No.	Each	No.	Each	No.	Each	No.	Each
125	78217	\$112.	78317	\$134.	78617	\$131.	78717	\$161.
150	78218	112.	78318	134.	78618	131.	78718	161.
175	78219	112.	78319	134.	78619	131.	78719	161.
200	78226	112.	78326	134.	78626	131.	78726	161.
225	78227	112.	78327	134.	78627	131.	78727	161.

### Cast Iron Enclosure

2-Pole, 250 Volts A.C.; 125-250 Volts D.C.

Weatherproof and Dust-Tight *Drilling				Class II—Group G				Class I—Group D			
Amps.	No.	Each	Inches	No.	Each	Inches	No.	Each	Inches	No.	Each
125	78217D	\$193.	2 $\frac{1}{2}$	78217Y	\$207.	2 $\frac{1}{2}$	78217X	\$230.	2 $\frac{1}{2}$	78217Z	212.
150	78218D	193.	2 $\frac{1}{2}$	78218Y	207.	2 $\frac{1}{2}$	78218X	230.	2 $\frac{1}{2}$	78218Z	212.
175	78219D	193.	2 $\frac{1}{2}$	78219Y	207.	2 $\frac{1}{2}$	78219X	230.	2 $\frac{1}{2}$	78219Z	212.
200	78226D	193.	2 $\frac{1}{2}$	78226Y	207.	2 $\frac{1}{2}$	78226X	230.	2 $\frac{1}{2}$	78226Z	212.
225	78227D	193.	2 $\frac{1}{2}$	78227Y	207.	2 $\frac{1}{2}$	78227X	230.	2 $\frac{1}{2}$	78227Z	212.

3-Pole, 250 Volts A.C.; 125-250 Volts D.C.

125	78317D	\$134.	2 $\frac{1}{2}$	78317Y	\$229.	2 $\frac{1}{2}$	78317X	\$252.	2 $\frac{1}{2}$
150	78318D	134.	2 $\frac{1}{2}$	78318Y	229.	2 $\frac{1}{2}$	78318X	252.	2 $\frac{1}{2}$
175	78319D	134.	2 $\frac{1}{2}$	78319Y	229.	2 $\frac{1}{2}$	78319X	252.	2 $\frac{1}{2}$
200	78326D	134.	2 $\frac{1}{2}$	78326Y	229.	2 $\frac{1}{2}$	78326X	252.	2 $\frac{1}{2}$
225	78327D	134.	2 $\frac{1}{2}$	78327Y	229.	2 $\frac{1}{2}$	78327X	252.	2 $\frac{1}{2}$

2-Pole, 600 Volts A.C.; 250 Volts D.C.

125	78617D	\$213.	2 $\frac{1}{2}$	78617Y	\$227.	2 $\frac{1}{2}$	78617X	\$250.	2 $\frac{1}{2}$
150	78618D	213.	2 $\frac{1}{2}$	78618Y	227.	2 $\frac{1}{2}$	78618X	250.	2 $\frac{1}{2}$
175	78619D	213.	2 $\frac{1}{2}$	78619Y	227.	2 $\frac{1}{2}$	78619X	250.	2 $\frac{1}{2}$
200	78626D	213.	2 $\frac{1}{2}$	78626Y	227.	2 $\frac{1}{2}$	78626X	250.	2 $\frac{1}{2}$
225	78627D	213.	2 $\frac{1}{2}$	78627Y	227.	2 $\frac{1}{2}$	78627X	250.	2 $\frac{1}{2}$

3-Pole, 600 Volts A.C.; 250 Volts D.C.

125	78717D	\$242.	2 $\frac{1}{2}$	78717Y	\$256.	2 $\frac{1}{2}$	78717X	\$279.	2 $\frac{1}{2}$
150	78718D	242.	2 $\frac{1}{2}$	78718Y	256.	2 $\frac{1}{2}$	78718X	279.	2 $\frac{1}{2}$
175	78719D	242.	2 $\frac{1}{2}$	78719Y	256.	2 $\frac{1}{2}$	78719X	279.	2 $\frac{1}{2}$
200	78726D	242.	2 $\frac{1}{2}$	78726Y	256.	2 $\frac{1}{2}$	78726X	279.	2 $\frac{1}{2}$
225	78727D	242.	2 $\frac{1}{2}$	78727Y	256.	2 $\frac{1}{2}$	78727X	279.	2 $\frac{1}{2}$

\*Furnished with standard conduit openings of sizes as shown—one in top, two in bottom.

## Square D Circuit Interrupters

Non-Automatic  
Type ML, 50 Ampere Frame  
Type ML2, 100 Ampere Frame  
Type ML3, 225 Ampere Frame

Schedule D1

Non-automatic circuit interrupters consist of essentially the same device as automatic circuit breakers with the exception of the tripping mechanisms. They are used on applications previously requiring non-fusible safety switches.

The non-automatic circuit interrupters are enclosed in the same types and sizes of sheet steel enclosures as are the automatic circuit breakers. Circuit interrupter listings are shown below.

The interrupting capacity of the non-automatic breaker is much higher than that of a comparable Type A unfused safety switch. Comparable standard automatic circuit breakers of 100 amperes or less, rated 250 volts or less, interrupt short circuit values of 5000 amperes. Breakers above 100 amperes, rated 250 volts, as well as all 600 volt a.c. breakers, are required by Underwriters to interrupt 10,000 amperes. Horsepower rated safety switches are only required to interrupt stalled rotor current of the motor they protect, 6 times full load current of motor. Due to the compactness of circuit interrupters, they find ready applications where space is limited.

### Type ML

No.	76200	76300
Each.	\$19.00	26.00
No. of Poles.	2	3
Volts.	250	250

### Type ML2

No.	77200	77300	77600	77700
Each.	\$31.00	38.00	42.00	50.00
No. of Poles.	2	3	2	3
Volts.	250	250	600	600

### Type ML3

No.	78200	78300	78600	78700
Each.	\$91.00	108.00	104.00	127.00
No. of Poles.	2	3	2	3
Volts.	250	250	600	600

## Square D General Purpose Circuit Breakers

Surface Type

Type ML Breakers

125, 125-250 Volts A.C./D.C. and 230 Volts A.C.  
Schedule D1



Furnished with one handle.  
Finished in black.

Amps.	Single-Pole		2-Pole		3-Pole	
	No.	Each	No.	Each	No.	Each
15	76115S	\$9.00	76715S	\$16.00	76515S	\$24.00
20	76120S	9.00	76720S	16.00	76520S	24.00
25	76125S	9.00	76725S	16.00	76525S	24.00
35	76135S	9.00	76735S	16.00	76535S	24.00
50	76150S	9.00	76750S	16.00	76550S	24.00



## Heinemann Magnetic Circuit Breakers

120-240 A.C.



An outdoor type breaker which serves as main disconnect and over-current protection for the electrified farm. May be installed on the yard pole or on the farm building.

Meets both R.E.A. and Underwriters' requirements.

Magnetic trip with time delay gives high speed trip on short circuits, and delayed trip on harmless overloads. After the circuit breaker opens on overload or short circuit, it may be closed at once provided current has returned to normal. No resetting necessary, no confusing trip position—handle moves one way to "on" and the other way to "off." There is negligible wattage loss since nothing heats. Provision is made for locking the wiring compartment with meter seal or padlock. Solderless connectors are provided for all connections to circuit breakers and to neutral.

Housing made of 16 gage galvanized steel with baked on aluminum finish. Made by deep drawing and not as a folded box; this results in rounded corners with no sharp projections, as well as providing waterproof construction.

Overall height, 9 $\frac{1}{2}$  inches; height of housing, 8 $\frac{1}{2}$  inches; width of housing, 4 $\frac{1}{8}$  inches; depth of housing, 3 $\frac{1}{8}$  inches; hub size 1 $\frac{1}{4}$  inches.

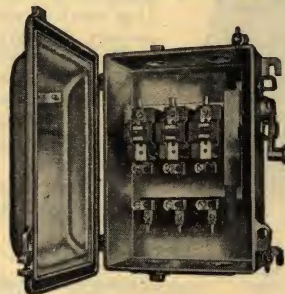
No.	Description	Each
H1801-35	Service Equipment with one 35-Ampere Breaker.....	\$13.60
H1802-35	Service Equipment with two 35-Ampere Breakers.....	17.65
H1802-50	Service Equipment with two 50-Ampere Breakers.....	17.65
H1800	Service Equipment, Enclosure Only.....	8.35
0412-35	Circuit Breaker Only, 35 Amperes.....	4.05
0412-50	Circuit Breaker Only, 50 Amperes.....	4.05

## Type A Style RBA Trumbull Water Tight and Dust Tight Safety Switches

Single Throw Weatherproof Boxes

Quick Make and Break Interlocking Cover  
Cast Iron N.E.M.A. Types 4 and 5

Schedule C—0-100 Amperes  
Schedule ★C—200 Amperes and Over



All weatherproof boxes furnished with two holes drilled and tapped in each end. One hole in each end closed with pipe plug. Pipe size tapped holes; 30 amperes,  $\frac{3}{4}$ -inch; 60 amperes, 1 $\frac{1}{4}$ -inch; 100 amperes, 1 $\frac{1}{2}$ -inch; 200 amperes 2 $\frac{1}{2}$ -inch; and 400 amperes, 3-inch.

Solderless lugs standard.

Machine grey finish.

### Fusible 30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING
68221C	\$38.00	2	230 A.C., 2 Hp.; 250 D.C., 5 Hp.
68261C	51.00	2	600 D.C., 7 $\frac{1}{2}$ Hp.
68321C	43.00	3	230 A.C., 3 Hp.
68361C	56.00	3	575 A.C., 7 $\frac{1}{2}$ Hp.

### 60 Amperes

68222C	\$50.00	2	230 A.C., 5 Hp.; 250 D.C., 10 Hp.
68262C	62.00	2	600 D.C., 15 Hp.
68322C	57.00	3	230 A.C., 7 $\frac{1}{2}$ Hp.
68362C	69.00	3	575 A.C., 20 Hp.

### 100 Amperes

68223C	\$130.00	2	230 A.C., 10 Hp.; 250 D.C., 15 Hp.
68263C	140.00	2	600 D.C., 25 Hp.
68323C	140.00	3	230 A.C., 15 Hp.
68363C	150.00	3	575 A.C., 30 Hp.

### 200 Amperes

68224C	\$200.00	2	230 A.C., 15 Hp.; 250 D.C., 30 Hp.
68264C	210.00	2	600 D.C., 50 Hp.
68324C	210.00	3	230 A.C., 30 Hp.
68364C	220.00	3	575 A.C., 50 Hp.

### 400 Amperes

68225C	\$405.00	2	230 A.C., 25 Hp.; 250 D.C., 50 Hp.
68265C	420.00	2	600 A.C. or D.C.
68325C	420.00	3	230 A.C., 50 Hp.
68365C	435.00	3	575 A.C.

### No Fuse

### 30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING
34361C	\$42.00	3	230 A.C., 5 Hp.; 575 A.C., 10 Hp.; 250 D.C., 5 Hp.; 600 D.C., 7 $\frac{1}{2}$ Hp.

### 60 Amperes

34362C	\$54.00	3	230 A.C., 10 Hp.; 575 A.C., 25 Hp.; 250 D.C., 10 Hp.; 600 D.C., 15 Hp.
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### 100 Amperes

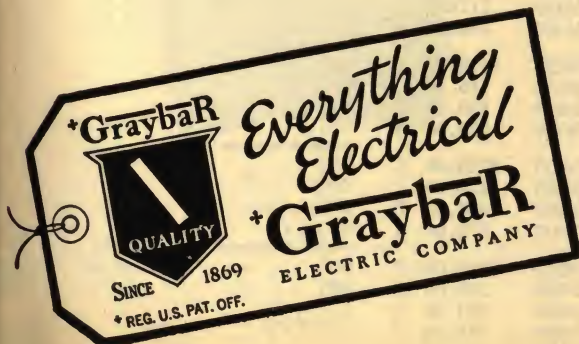
34363C	\$135.00	3	230 A.C., 20 Hp.; 575 A.C., 40 Hp.; 250 D.C., 15 Hp.; 600 D.C., 25 Hp.
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### 200 Amperes

34364C	\$200.00	3	230 A.C., 40 Hp.; 575 A.C., 50 Hp.; 250 D.C., 30 Hp.; 600 D.C., 50 Hp.
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### 400 Amperes

34365C	\$400.00	3	230 A.C., 50 Hp.; 575 A.C.; 250 D.C., 50 Hp.; 600 D.C.
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## Type A Style A Trumbull Heavy Duty Switches

Single Throw

Quick Make and Break—Interlocking Cover  
General Purpose N.E.M.A. Type 1 Steel Enclosure

Schedule C—0-100 Amperes

Schedule ★C—200 Amperes and Over



Fusible



No Fuse

SN (Solid Neutral) Switches have a neutral strap between two poles. For example: No. 72221, a 2-pole switch, by the addition of this neutral strap becomes No. 72321SN, a 3-pole solid neutral switch. Exception: 3 and 4-pole solid neutral switches 800-ampere and above have regular 3 and 4-pole bases.

For switching neutral switches use the corresponding 3-pole switch and insert dummy fuse.

Solderless lugs standard.

Switches available for 1800 and 2400 amperes. Prices upon request.

Machine grey finish.

\*Twin lugs per pole.

## Fusible

## 30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAXIMUM HP. RATING
72221	\$10.50	2	230 A.C., 2 Hp.; 250 D.C., 5 Hp.
72261	20.50	2	600 D.C., 7½ Hp.
72321	13.50	3	230 A.C., 3 Hp.
72361	25.00	3	575 A.C., 7½ Hp.
72321SN	12.00	3SN	230 3Ø, 3 Hp.; 125-250 D.C., 5 Hp.
72421	20.50	4	230 A.C., 3 Hp.
72461	30.50	4	575 A.C., 7½ Hp.
72421SN	20.50	4SN	230 A.C., 3 Hp.

## 60 Amperes

72222	\$17.00	2	230 A.C., 5 Hp.; 250 D.C., 10 Hp.
72262	21.50	2	600 D.C., 15 Hp.
72322	22.50	3	230 A.C., 7½ Hp.
72362	26.00	3	575 A.C., 20 Hp.
72322SN	19.00	3SN	230 3Ø, 7½ Hp.; 125-250 D.C., 10 Hp.
72422	27.00	4	230 A.C., 10 Hp.
72462	32.50	4	575 A.C., 20 Hp.
72422SN	26.00	4SN	230 A.C., 7½ Hp.

## 100 Amperes

72223	\$26.00	2	230 A.C., 10 Hp.; 250 D.C., 15 Hp.
72263	34.00	2	600 D.C., 25 Hp.
72323	34.00	3	230 A.C., 15 Hp.
72363	39.50	3	575 A.C., 30 Hp.
72323SN	30.50	3SN	230 3Ø, 15 Hp.; 125-250 D.C., 15 Hp.
72423	45.00	4	230 A.C., 20 Hp.
72463	52.00	4	575 A.C., 30 Hp.
72423SN	40.50	4SN	230 A.C., 15 Hp.

## 200 Amperes

72224	\$45.00	2	230 A.C., 15 Hp.; 250 D.C., 30 Hp.
72264	53.00	2	600 D.C., 50 Hp.
72324	50.50	3	230 A.C., 30 Hp.
72364	65.50	3	575 A.C., 50 Hp.
72324SN	49.50	3SN	230 3Ø, 30 Hp.; 125-250 D.C.; 30 Hp.
72424	67.50	4	230 A.C., 30 Hp.
72464	79.00	4	575 A.C., 50 Hp.
72424SN	62.00	4SN	230 A.C., 30 Hp.

## No Fuse

## 30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAXIMUM HP. RATING
36221	\$9.00	2	230 A.C., 3 Hp.; 250 D.C., 5 Hp.
36261	12.50	2	600 D.C., 7½ Hp.
36321	11.00	3	230 A.C., 5 Hp.
36361	14.50	3	575 A.C., 10 Hp.
36461	20.50	4	230 A.C., 5 Hp.; 575 A.C., 10 Hp.
36222	\$12.50	2	230 A.C., 7½ Hp.; 250 D.C., 10 Hp.
36262	17.00	2	600 D.C., 15 Hp.
36362	20.50	3	230 A.C., 10 Hp.; 575 A.C., 25 Hp.
36462	27.00	4	230 A.C., 15 Hp.; 575 A.C., 25 Hp.

## 100 Amperes

36223	\$25.00	2	230 A.C., 15 Hp.; 250 D.C., 15 Hp.
36263	26.00	2	600 D.C., 25 Hp.
36363	30.50	3	230 A.C., 20 Hp.; 575 A.C., 40 Hp.
36463	39.50	4	230 A.C., 25 Hp.; 575 A.C., 40 Hp.

## 200 Amperes

36224	\$31.50	2	230 A.C., 25 Hp.; 250 D.C., 30 Hp.
36264	35.00	2	600 D.C., 50 Hp.
36364	43.00	3	230 A.C., 40 Hp.; 575 A.C., 50 Hp.
36464	59.00	4	230 A.C., 50 Hp.; 575 A.C., 50 Hp.

## Fusible

## 400 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAXIMUM HP. RATING
72225	\$101.50	2	250 D.C., 50 Hp.
72265	124.00	2	600
72325	112.50	3	230 A.C., 50 Hp.
72365	135.00	3	575 A.C.
72325SN	112.50	3SN	230 3Ø, 50 Hp.; 125-250 D.C., 50 Hp.
72425	146.50	4	230 A.C., 50 Hp.
72465	174.50	4	575 A.C.
72425SN	129.50	4SN	230 A.C., 50 Hp.

## 600 Amperes

72226	\$146.50	2	250
72266	197.00	2	600
72326	175.00	3	230 A.C.
72366	225.00	3	575 A.C.
72326SN	163.50	3SN	230 A.C., 125-250
72426	231.00	4	230 A.C.
72466	270.00	4	575 A.C.
72426SN	200.50	4SN	230 A.C.

## \*800 Amperes

72227	\$248.00	2	250
72267	304.00	2	600
72327	338.00	3	230 A.C.
72367	394.00	3	575 A.C.
72327SN	270.50	3SN	230 A.C., 125-250
72427	434.00	4	230 A.C.
72467	507.00	4	575 A.C.
72427SN	383.00	4SN	230 A.C.

## \*1200 Amperes

72228	\$344.00	2	250
72268	428.00	2	600
72328	434.00	3	230 A.C.
72368	518.00	3	575 A.C.
72328SN	383.00	3SN	230 A.C., 125-250
72428	575.00	4	230 A.C.
72468	647.50	4	575 A.C.
72428SN	476.00	4SN	230 A.C.

## 400 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAXIMUM HP. RATING
36225	\$67.50	2	250 D.C., 50 Hp.
36265	101.50	2	600
36365	112.50	3	230 A.C., 50 Hp.; 575 A.C.
36465	146.50	4	230 A.C., 50 Hp., 575 A.C.

## 600 Amperes

36226	\$112.50	2	250
36266	146.50	2	600
36366	180.50	3	575 A.C.
36466	220.00	4	575 A.C.

## \*800 Amperes

36227	\$220.00	2	250
36267	220.00	2	600
36367	293.00	3	575 A.C.
36467	378.00	4	575 A.C.

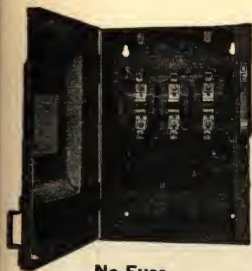
## \*1200 Amperes

36228	\$299.00	2	250
36268	299.00	2	600
36368	394.00	3	575 A.C.
36468	518.00	4	575 A.C.

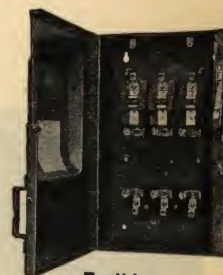


## Type A Trumbull Heavy Duty Safety Switches

Single-Throw

Quick-Make and Quick-Break—Interlocking Cover—General Purpose N.E.M.A. Type 1 Steel Enclosure  
Style RBASchedule C—0-100 Amperes  
Schedule ★C—200 Amperes and Over

No Fuse



Fusible

For switching neutral switches use the corresponding 3-pole switch and insert dummy fuse.

Solderless lugs standard.

Machine grey finish.

## No Fuse

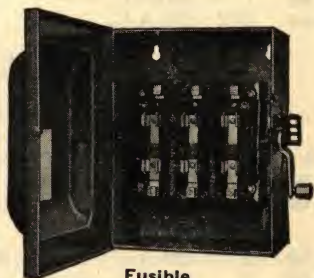
## 30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING
33221	\$9.00	2	230 A.C., 3 Hp.; 250 D.C., 5 Hp.
33261	12.50	2	600 D.C., 7½ Hp.
33361	14.50	3	230 A.C., 5 Hp.; 575 A.C., 10 Hp.
<b>60 Amperes</b>			
33222	\$12.50	2	230 A.C., 7½ Hp.; 250 D.C., 10 Hp.
33262	17.00	2	600 D.C., 15 Hp.
33362	20.50	3	230 A.C., 10 Hp.; 575 A.C., 25 Hp.
<b>100 Amperes</b>			
33223	\$25.00	2	230 A.C., 15 Hp.; 250 D.C., 15 Hp.
33263	26.00	2	600 D.C., 25 Hp.
33363	30.50	3	230 A.C., 20 Hp.; 575 A.C., 40 Hp.
<b>200 Amperes</b>			
33224	\$31.50	2	230 A.C., 25 Hp.; 250 D.C., 30 Hp.
33264	35.00	2	600 D.C., 50 Hp.
33364	43.00	3	230 A.C., 40 Hp.; 575 A.C., 50 Hp.
<b>400 Amperes</b>			
33225	\$67.50	2	250 D.C., 50 Hp.
33265	101.50	2	600 A.C. or D.C.
33365	112.50	3	230 A.C., 50 Hp.; 575 A.C.

## Fusible

## 30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING
66221	\$10.50	2	230 A.C., 2 Hp.; 250 D.C., 5 Hp.
66261	20.50	2	600 D.C., 7½ Hp.
66321	13.50	3	230 A.C., 3 Hp.
66361	25.00	3	575 A.C., 7½ Hp.
66321SN	12.00	3SN	230, 3Ø, 3 Hp.
<b>60 Amperes</b>			
66222	\$17.00	2	230 A.C., 5 Hp.; 250 D.C., 10 Hp.
66262	21.50	2	600 D.C., 15 Hp.
66322	22.50	3	230 A.C., 7½ Hp.
66362	26.00	3	575 A.C., 20 Hp.
66322SN	19.00	3SN	230, 3Ø, 7½ Hp.
<b>100 Amperes</b>			
66223	\$26.00	2	230 A.C., 10 Hp.; 250 D.C., 15 Hp.
66263	34.00	2	600 D.C., 25 Hp.
66323	34.00	3	230 A.C., 15 Hp.
66363	39.50	3	575 A.C., 30 Hp.
66323SN	30.50	3SN	230, 3Ø, 15 Hp.
<b>200 Amperes</b>			
66224	\$45.00	2	230 A.C., 15 Hp.; 250 D.C., 30 Hp.
66264	53.00	2	575 A.C., 25 Hp.; 600 D.C., 50 Hp.
66324	50.50	3	230 A.C., 30 Hp.
66364	65.50	3	575 A.C., 50 Hp.
66324SN	49.50	3SN	230, 3Ø, 30 Hp.
<b>400 Amperes</b>			
66225	\$101.50	2	250 D.C., 50 Hp.
66265	124.00	2	575 A.C.
66325	112.50	3	230 A.C., 50 Hp.
66365	135.00	3	575 A.C.
66325SN	112.50	3SN	230, 3Ø, 50 Hp.



Fusible

## Style RM

For switching neutral switches use the corresponding 3-pole switch and insert dummy fuse.

Solderless lugs standard. Machine grey finish.

## No Fuse

## 30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING
46221	\$9.00	2	230 A.C., 3 Hp.; 250 D.C., 5 Hp.
46321	11.00	3	230 A.C., 5 Hp.
<b>60 Amperes</b>			
46262	\$17.00	2	250 D.C., 10 Hp.; 230 A.C., 7½ Hp.; 600 D.C., 15 Hp.
46362	20.50	3	230 A.C., 10 Hp.; 575 A.C., 25 Hp.

## Fusible

## 30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING
92221	\$10.50	2	230 A.C., 2 Hp.; 250 D.C., 5 Hp.
92261	20.50	2	600 D.C., 7½ Hp.
92321	13.50	3	230 A.C., 3 Hp.
92361	25.00	3	575 A.C., 7½ Hp.
<b>60 Amperes</b>			
92222	\$17.00	2	230 A.C., 5 Hp.; 250 D.C., 10 Hp.
92262	21.50	2	600 D.C., 15 Hp.
92322	22.50	3	230 A.C., 7½ Hp.
92362	26.00	3	575 A.C., 20 Hp.

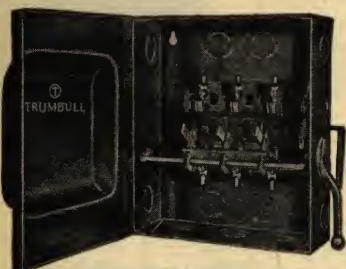


## Type C Trumbull Enclosed Safety Switches

Single Throw

Quick Make and Quick Break  
General Purpose N.E.M.A. Type 1 Steel Enclosure

Schedule A



No Fuse—60 Amp. 230 V.



Solid Neutral



Fusible—60 Amp. 230 V.

SN (Solid Neutral) Switches are furnished with insulated groundable neutral 30–100 amperes inclusive; 200 amperes and above insulated neutral only with lug for grounding if desired. Lug on box for conduit ground wire.

For switching neutral switches use corresponding 3-pole switch and insert dummy fuse.

Solderless lugs standard. Machine grey finish.

## Fusible

## 30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING
40221A	\$9.00	2	230 A.C., 2 Hp.; 250 D.C., 5 Hp.
40321A	11.00	3	230 A.C., 3 Hp.
40361	19.00	3	575 A.C., 7½ Hp.
41321A	10.00	3SN	230 A.C., 3 Ph., 3 Hp.
40421	21.00	4	230 A.C., 3 Hp.
40461	31.00	4	575 A.C., 7½ Hp.
41421A	14.00	4SN	230 A.C., 3 Hp.

## 60 Amperes

40222	\$16.00	2	230 A.C., 5 Hp.; 250 D.C., 10 Hp.
40322	20.00	3	230 A.C., 7½ Hp.
40362	23.00	3	575 A.C., 20 Hp.
41322	17.00	3SN	230 A.C., 3 Ph., 7½ Hp.
40422	29.00	4	230 A.C., 10 Hp.
40462	35.00	4	575 A.C., 20 Hp.
41422	23.00	4SN	230 A.C., 7½ Hp.

## 100 Amperes

40223	\$25.00	2	230 A.C., 10 Hp.; 250 D.C., 15 Hp.
40323	31.00	3	230 A.C., 15 Hp.
40363	42.00	3	575 A.C., 30 Hp.
41323	26.00	3SN	230 A.C., 3 Ph., 15 Hp.
40423	47.00	4	230 A.C., 20 Hp.

## 100 Amperes, cont.

No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING
40463	\$63.00	4	575 A.C., 30 Hp.
41423	36.00	4SN	230 A.C., 15 Hp.
200 Amperes			
40224	\$38.00	2	230 A.C., 15 Hp.; 250 D.C., 30 Hp.
40324	53.00	3	230 A.C., 30 Hp.
40364	63.00	3	575 A.C., 50 Hp.
41324	48.00	3SN	230 A.C., 3 Ph., 30 Hp.
40424	85.00	4	230 A.C., 30 Hp.
40464	102.00	4	575 A.C., 50 Hp.
41424	63.00	4SN	230 A.C., 30 Hp.
400 Amperes			
40225	\$96.00	2	250 D.C., 50 Hp.; 230 A.C., 25 Hp.
40325	111.00	3	230 A.C., 50 Hp.
41325	105.00	3SN	230 A.C., 3 Ph., 50 Hp.
40425	158.00	4	230 A.C., 50 Hp.
41425	135.00	4SN	230 A.C., 50 Hp.

## 600 Amperes

40226	\$190.00	2	250
40326	219.00	3	230 A.C.
41326	204.00	3SN	230 A.C.
40426	290.00	4	230 A.C.
41426	242.00	4SN	230 A.C.

## No Fuse

## 30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING
20221A	\$8.00	2	230 A.C., 3 Hp.; 250 D.C., 5 Hp.
20321A	10.00	3	230 A.C., 5 Hp.
20361	14.00	3	575 A.C., 10 Hp.
20421	18.00	4	230 A.C., 5 Hp.
20461	22.00	4	575 A.C., 10 Hp.

## 60 Amperes

20222	\$14.00	2	230 A.C., 7½ Hp.; 250 D.C., 10 Hp.
20322	18.00	3	230 A.C., 10 Hp.
20362	19.00	3	575 A.C., 25 Hp.
20422	24.00	4	230 A.C., 15 Hp.
20462	31.00	4	575 A.C., 25 Hp.

## 100 Amperes

20223	\$24.00	2	230 A.C., 15 Hp.; 250 D.C., 15 Hp.
20323	27.00	3	230 A.C., 20 Hp.
20363	35.00	3	575 A.C., 40 Hp.

## 100 Amperes, cont.

No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING
20423	\$45.00	4	230 A.C., 25 Hp.
20463	57.00	4	575 A.C., 40 Hp.
200 Amperes			
20224	\$32.00	2	230 A.C., 25 Hp.; 250 D.C., 30 Hp.
20324	44.00	3	230 A.C., 40 Hp.
20364	48.00	3	575 A.C., 50 Hp.
20424	80.00	4	230 A.C., 50 Hp.
20464	82.00	4	575 A.C., 50 Hp.
400 Amperes			
20225	\$80.00	2	250 D.C., 50 Hp.
20325	96.00	3	230 A.C., 50 Hp.
600 Amperes			
20226	\$150.00	2	250
20326	196.00	3	230 A.C.

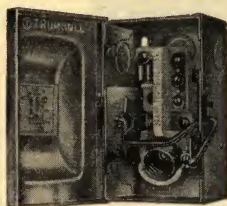


## Type D Trumbull Enclosed Switches

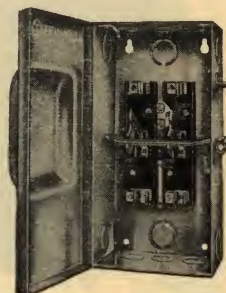
Single Throw

General Purpose N.E.M.A. Type 1 Steel Enclosure

Schedule A



No. 24111



No. 23322

Solderless lugs standard. Machine gray finish.

### Side Operated

#### No Fuse

##### 30 Amperes

No.	Each	No. of Poles	No. of Blades	No. of Fuses	Volts
12221	\$3.00	2	2	0	250
12321	5.50	3	3	0	230 A.C.

##### 60 Amperes

12222	\$9.00	2	2	0	250
12322	11.00	3	3	0	230 A.C.

##### 100 Amperes

12223	\$18.00	2	2	0	250
12323	20.00	3	3	0	230 A.C.

##### 200 Amperes

12224	\$26.00	2	2	0	250
12324	35.00	3	3	0	230 A.C.

#### Fusible—Plug Fuses

##### 30 Amperes

24211	\$3.20	2	2	2	125-250
*27211	3.20	2	2	2	125-250
†24111	2.70	2SN	1	1	125
23111	2.70	2SN	1	1	125
24311	6.00	3	3	3	†115 A.C.
*27311	6.00	3	3	3	†115 A.C.
23311	3.50	3SN	2	2	125-250
*25311	3.50	3SN	2	2	125-250

For switching neutral use the corresponding 3-pole switch and insert dummy fuse.

SN (solid neutral) switches are furnished with insulated groundable neutral 30-100 inclusive. The 200 amperes and above have insulated neutral only with lug for grounding.

### Side Operated

#### Fusible—Cartridge Fuses

##### 30 Amperes

No.	Each	No. of Poles	No. of Blades	No. of Fuses	Volts
24221	\$4.00	2	2	2	250
*27221	4.00				
24321	7.50	3	3	3	230 A.C.
*27321	7.50				
23321	5.00	3SN	2	2	125-250, 230 A.C.
*25321	5.00				
23421	10.00	4SN	3	3	230 A.C.

##### 60 Amperes

24222	\$9.50	2	2	2	250
24322	12.00				
*27322	12.00	3	3	3	230 A.C.
23322	10.00				
*25322	10.00	3SN	2	2	125-250, 230 A.C.
23422	20.00				
23422	20.00	4SN	3	3	230 A.C.

##### 100 Amperes

24223	\$19.00	2	2	2	250
24323	22.00				
*27323	22.00	3	3	3	230 A.C.
23323	20.00				
*25323	20.00	3SN	2	2	125-250, 230 A.C.
23423	33.00				
23423	33.00	4SN	3	3	230 A.C.

##### 200 Amperes

24224	\$35.00	2	2	2	250
24324	48.00				
*27324	48.00	3	3	3	230 A.C.
23324	44.00				
*25324	44.00	3SN	2	2	125-250, 230 A.C.
23424	59.00				
23424	59.00	4SN	3	3	230 A.C.

\*Top ends are furnished with twistouts to take standardized meters.

†Base mounted on saddle, entire unit easily removed

‡Can be rated 125-250 volts, if required.



# Trumbull Enclosed Circuit Breakers

Sheet Steel—Dust-Resisting N.E.M.A. Type 1A

Automatic Overload Protection

Machine Gray Finish

Quick Make and Break

Schedule C-O-100 Amp. Frame Size

Schedule ★C-225 Amp. Frame Size and Above



		Sheet Steel Dust-Resisting Enclosures N.E.M.A. Type 1A 250 V. A.C.—125/250 V. D.C.			
Frame Size Amp.	Amp.	2-Pole		3-Pole	
		No.	Each	No.	Each
*50	15	AT21015G	\$19.00	AT31015G	\$26.00
	20	AT21020G	19.00	AT31020G	26.00
	25	AT21025G	19.00	AT31025G	26.00
	35	AT21035G	19.00	AT31035G	26.00
	50	AT21050G	19.00	AT31050G	26.00
*100	70	ATB22070G	37.00	ATB32070G	47.00
	90	ATB22090G	37.00	ATB32090G	47.00
	100	ATB22100G	37.00	ATB32100G	47.00
100	50	ATA22050G	45.00	ATA32050G	56.00
	70	ATA22070G	45.00	ATA32070G	56.00
	90	ATA22090G	45.00	ATA32090G	56.00
	100	ATA22100G	45.00	ATA32100G	56.00
225	125	AT23125G	112.00	AT33125G	134.00
	150	AT23150G	112.00	AT33150G	134.00
	175	AT23175G	112.00	AT33175G	134.00
	200	AT23200G	112.00	AT33200G	134.00
	225	AT23225G	112.00	AT33225G	134.00
600	250	AT24250G	282.00	AT34250G	351.00
	275	AT24275G	282.00	AT34275G	351.00
	300	AT24300G	282.00	AT34300G	351.00
	350	AT24350G	282.00	AT34350G	351.00
	400	AT24400G	282.00	AT34400G	351.00
	500	AT24500G	323.00	AT34500G	405.00
	600	AT24600G	323.00	AT34600G	405.00

		Sheet Steel Dust Resisting Enclosures N.E.M.A. Type 1A 600 V. A.C.—250 V. D.C.			
Frame Size Amp.	Amp.	2-Pole		3-Pole	
		No.	Each	No.	Each
*100	15	ATB26015G	\$35.00	ATB36015G	\$44.00
	20	ATB26020G	35.00	ATB36020G	44.00
	25	ATB26025G	35.00	ATB36025G	44.00
	35	ATB26035G	35.00	ATB36035G	44.00
	50	ATB26050G	35.00	ATB36050G	44.00
	70	ATB26070G	48.00	ATB36070G	58.00
	90	ATB26090G	48.00	ATB36090G	58.00
	100	ATB26100G	48.00	ATB36100G	58.00
100	50	ATA26050G	53.00	ATA36050G	69.00
	70	ATA26070G	53.00	ATA36070G	69.00
	90	ATA26090G	53.00	ATA36090G	69.00
	100	ATA26100G	53.00	ATA36100G	69.00
225	125	AT27125G	131.00	AT37125G	161.00
	150	AT27150G	131.00	AT37150G	161.00
	175	AT27175G	131.00	AT37175G	161.00
	200	AT27200G	131.00	AT37200G	161.00
	225	AT27225G	131.00	AT37225G	161.00
600	250	AT28250G	300.00	AT38250G	378.00
	275	AT28275G	300.00	AT38275G	378.00
	300	AT28300G	300.00	AT38300G	378.00
	350	AT28350G	300.00	AT38350G	378.00
	400	AT28400G	300.00	AT38400G	378.00
	500	AT28500G	341.00	AT38500G	432.00
	600	AT28600G	341.00	AT38600G	432.00

\*Non-interchangeable trips.

		Sheet Steel Enclosures, Solid Neutral with Lugs for Grounded Neutral Surface Mounting—N.E.M.A. Type 1 125/250 V. A.C.—250 V. A.C.			
Frame Size Amp.	Amp.	2-Pole 3W.		3-Pole 4W.	
		No.	Each	No.	Each
*50	15	AT21015NS	\$22.00	AT31015NS	\$29.00
	20	AT21020NS	22.00	AT31020NS	29.00
	25	AT21025NS	22.00	AT31025NS	29.00
	35	AT21035NS	22.00	AT31035NS	29.00
	50	AT21050NS	22.00	AT31050NS	29.00
*100	70	ATB22070NS	42.00	ATB32070NS	51.00
	90	ATB22090NS	42.00	ATB32090NS	51.00
	100	ATB22100NS	42.00	ATB32100NS	51.00
100	50	ATA22050NS	45.00	ATA32050NS	56.00
	70	ATA22070NS	45.00	ATA32070NS	56.00
	90	ATA22090NS	45.00	ATA32090NS	56.00
	100	ATA22100NS	45.00	ATA32100NS	56.00
225	125	AT23125NS	119.00	AT33125NS	141.00
	150	AT23150NS	119.00	AT33150NS	141.00
	175	AT23175NS	119.00	AT33175NS	141.00
	200	AT23200NS	119.00	AT33200NS	141.00
	225	AT23225NS	119.00	AT33225NS	141.00
600	250	AT24250NS	290.00	AT34250NS	360.00
	275	AT24275NS	290.00	AT34275NS	360.00
	300	AT24300NS	290.00	AT34300NS	360.00
	350	AT24350NS	290.00	AT34350NS	360.00
	400	AT24400NS	290.00	AT34400NS	360.00
	500	AT24500NS	330.00	AT34500NS	412.00
	600	AT24600NS	330.00	AT34600NS	412.00

## Single Pole—Dust-Resisting Enclosures N.E.M.A. Type 1A—125 V. A.C. or D.C.

Frame Size amp.	50	50	50	50	50
Amp...	15	20	25	35	50
No....	AT11015G	AT11020G	AT11025G	AT11035G	AT11050G
Each..	\$12.00	12.00	12.00	12.00	12.00

## \*Special Finishes

For Sheet Steel Enclosures

Frame Size.....amp.	50	100	225	600
Cad. Plated.....each	\$4.00	\$8.00	\$12.00	\$19.00
Electro Galvanized.....each	4.00	8.00	12.00	19.00
Hot-Dip Galvanized.....each	.....	.....	.....	.....

## For Galvanized Cast Enclosures

Refer to factory.

## Drilling and Tapping Cast Enclosures Other than Standard

Conduit Size, 1¼-Inch or Less .....	per hole	\$1.50
Conduit Size, 1½-Inch or Larger .....	per hole	2.50



**FA Type A Knife Switches**

High Grade—Front Connection

Without Fuse Connections

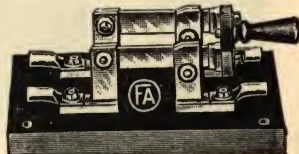
On Black Finish Slate Bases

**SINGLE-POLE**250 Volts D.C. or  
500 Volts A.C.**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3310	30	2½	\$3.30
A 3510	30	3	3.90
A 6310	60	3	4.30
A 10310	100	4½	5.50
A 20310	200	8	8.00
A 40310	400	15½	15.20
A 60310	600	23	22.50
A 80310	800	37	46.20
A100310	1000	40½	53.90
A120310	1200	45	81.80

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3310T	30	3	\$4.50
A 3510T	30	4	5.50
A 6310T	60	5	6.10
A 10310T	100	7	7.60
A 20310T	200	10	11.70
A 40310T	400	20	23.50
A 60310T	600	30	37.20
A 80310T	800	47½	67.40
A100310T	1000	52	81.80
A120310T	1200	54½	97.10

**DOUBLE POLE**250 Volts D.C. or  
500 Volts A.C.**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3320	30	3¾	\$6.00
A 3520	30	4	7.00
A 6320	60	5	7.80
A 10320	100	8¾	9.70
A 20320	200	16	14.90
A 40320	400	29	28.20
A 60320	600	37	43.10
A 80320	800	63	89.60
A100320	1000	69	105.80
A120320	1200	76½	129.00

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3320T	30	5	\$8.30
A 3520T	30	7	10.50
A 6320T	60	8	11.60
A 10320T	100	11½	14.60
A 20320T	200	17	22.30
A 40320T	400	33½	44.90
A 60320T	600	50	71.50
A 80320T	800	79	131.00
A100320T	1000	87	157.20
A120320T	1200	91	193.80

**3-POLE**250 Volts D.C. or  
500 Volts A.C.**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3330	30	4½	\$8.40
A 3530	30	7½	10.10
A 6330	60	7½	11.10
A 10330	100	12½	14.20
A 20330	200	22½	21.60
A 40330	400	43½	42.20
A 60330	600	51	63.50
A 80330	800	84	133.20
A100330	1000	94	157.10
A120330	1200	109	192.30

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3330T	30	7½	\$12.00
A 3530T	30	12	15.40
A 6330T	60	12	17.10
A 10330T	100	18	21.40
A 20330T	200	25	33.50
A 40330T	400	50	66.70
A 60330T	600	75	106.00
A 80330T	800	118	191.90
A100330T	1000	130	235.00
A120330T	1200	136	288.30

**4-POLE**

250 Volts D.C. or 500 Volts A.C.

**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3340	30	6	\$11.00
A 3540	30	13	13.60
A 6340	60	13	15.10
A 10340	100	20¼	18.60
A 20340	200	33	29.70
A 40340	400	56	57.00
A 60340	600	78	85.50
A 80340	800	124	176.90
A100340	1000	137	208.20
A120340	1200	157	256.20

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3340T	30	10	\$15.80
A 3540T	30	16	20.60
A 6340T	60	16	22.80
A 10340T	100	23	28.70
A 20340T	200	34	44.60
A 40340T	400	67	89.40
A 60340T	600	100	143.50
A 80340T	800	158	261.10
A100340T	1000	174	312.50
A120340T	1200	182	383.80

\*For 250 volts, d.c. only.

**FA Type A Knife Switches**

High Grade—Front Connection

With Cartridge Fuse Connections at Hinge End

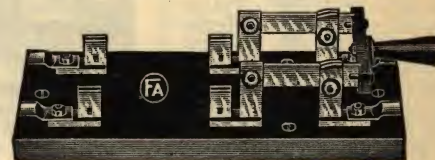
On Black Finish Slate Bases

**SINGLE-POLE**250 Volts D.C.  
or A.C.**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3311	30	3	\$3.80
A 6311	60	6	5.20
A 10311	100	8½	7.60
A 20311	200	18	11.00
A 40311	400	25	19.90
A 60311	600	34½	30.60
A 80311	800	56	65.40
A100311	1000	62½	83.80
A120311	1200	70	98.60

**Double-Throw**

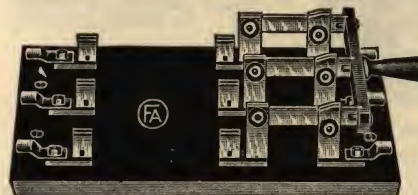
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3311T	30	5¼	\$5.60
A 6311T	60	8	8.30
A 10311T	100	13½	12.80
A 20311T	200	22½	19.40
A 40311T	400	43	33.00
A 60311T	600	59	54.20
A 80311T	800	66	107.40
A100311T	1000	70	136.90
A120311T	1200	73	159.40

**DOUBLE-POLE**250 Volts D.C.  
or A.C.**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3322	30	5	\$7.00
A 6322	60	8¼	9.40
A 10322	100	14	14.10
A 20322	200	26	20.80
A 40322	400	44½	38.90
A 60322	600	67	58.60
A 80322	800	99	128.90
A100322	1000	110	164.00
A120322	1200	122	193.70

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3322T	30	8¾	\$11.10
A 6322T	60	13½	16.60
A 10322T	100	22½	24.90
A 20322T	200	34	36.60
A 40322T	400	72	63.00
A 60322T	600	99	106.40
A 80322T	800	110	209.40
A100322T	1000	117	266.30
A120322T	1200	122	311.80

**3-POLE**250 Volts D.C.  
or A.C.**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3333	30	7½	\$9.80
A 6333	60	12¾	13.90
A 10333	100	20	20.60
A 20333	200	35	30.40
A 40333	400	69½	57.10
A 60333	600	87	86.20
A 80333	800	145	192.70
A100333	1000	160	243.00
A120333	1200	177	287.80

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3333T	30	13	\$16.60
A 6333T	60	20	25.10
A 10333T	100	33	36.90
A 20333T	200	51	53.80
A 40333T	400	108	94.40
A 60333T	600	148	156.80
A 80333T	800	165	311.60
A100333T	1000	175	395.40
A120333T	1200	183	471.00

**4-POLE**

250 Volts D.C. or A.C.

**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3344	30	10	\$13.00
A 6344	60	18	18.60
A 10344	100	34	28.00
A 20344	200	60	41.70
A 40344	400	109	77.90
A 60344	600	144	117.40
A 80344	800	212	256.00
A100344	1000	235	323.70
A120344	1200	265	383.00

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3344T	30	17½	\$21.80
A 6344T	60	27	33.60
A 10344T	100	45	48.40
A 20344T	200	68	72.90
A 40344T	400	144	125.40
A 60344T	600	198	206.40
A 80344T	800	220	413.60
A100344T	1000	234	531.20
A120344T	1200	244	625.60

NOTE.—Double-throw switches will be furnished with fuse connections at both ends.



## FA Type F Knife Switches



Formed Clip  
Single-Pole—Unfusible  
Front Connection—Plain  
Finish

250 Volts D.C.  
or  
500 Volts A.C.

## Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3310	30	1½	\$1.80
F 3510	30	2½	2.40
F 6310	60	2½	2.60
F10310	100	4	3.40
F20310	200	7	5.40

## Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3310T	30	3	\$2.20
F 3510T	30	4½	3.10
F 6310T	60	4½	3.40
F10310T	100	6¼	4.40
F20310T	200	12½	7.80

## FA Type F Knife Switches



Formed Clip  
Single-Pole—Fusible at Bottom  
Front Connection Plain Finish

250 Volts D.C.  
or A.C.

## Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3311	30	2¾	\$2.20
F 6311	60	4½	3.40
F10311	100	7¾	4.20
F20311	200	11¾	7.00

## Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3311T	30	5¼	\$3.00
F 6311T	60	7¾	4.80
F10311T	100	12½	6.90
F20311T	200	20	12.40

## FA Type F Knife Switches

Formed Clip  
Double-Pole—Unfusible  
Front Connection—Plain  
Finish

250 Volts D.C.  
or  
500 Volts A.C.



## Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3320	30	2½	\$2.50
F 3520	30	4¼	3.80
F 6320	60	4¼	4.20
F10320	100	8½	5.20
F20320	200	15½	9.50

## Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3320T	30	4¾	\$3.50
F 3520T	30	7¾	5.40
F 6320T	60	7¾	6.00
F10320T	100	13	8.00
F20320T	200	25	14.20

## FA Type F Knife Switches

Formed Clip  
Double-Pole—Fusible at Bottom

Front Connection  
Plain Finish

250 Volts D.C.  
or A.C.



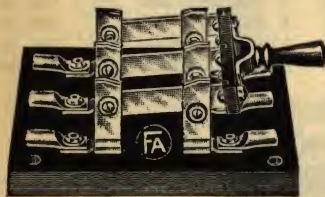
## Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3322	30	4½	\$3.40
F 6322	60	7½	5.40
F10322	100	13½	7.20
F20322	200	25	12.50

## Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3322T	30	8¾	\$5.50
F 6322T	60	12½	9.30
F10322T	100	26½	13.00
F20322T	200	37½	22.50

## FA Type F Knife Switches



Formed Clip  
3-Pole—Unfusible  
Front Connection—Plain  
Finish

250 Volts D.C.  
or  
500 Volts A.C.

## Single-Throw

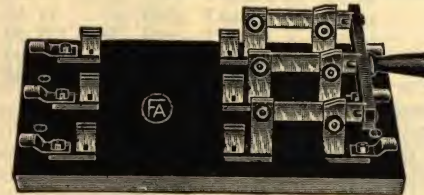
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3330	30	3¾	\$3.80
F 3530	30	6¼	5.40
F 6330	60	6¼	6.00
F10330	100	11½	7.70
F20330	200	22½	14.00

## Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3330T	30	7	\$5.00
F 3530T	30	11½	8.00
F 6330T	60	11½	8.90
F10330T	100	17½	12.20
F20330T	200	32	21.90

## FA Type F Knife Switches

Formed Clip  
3-Pole—Fusible at Bottom



Front Connection  
Plain Finish

250 Volts D.C.  
or A.C.

## Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3333	30	6½	\$4.60
F 6333	60	11	8.10
F10333	100	19½	10.60
F20333	200	35	19.20

## Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3333T	30	13	\$8.40
F 6333T	60	18½	14.30
F10333T	100	37½	19.50
F20333T	200	59½	33.40

## FA Type F Knife Switches

Formed Clip  
4-Pole—Unfusible  
Front Connection—Plain  
Finish

250 Volts D.C.  
or  
500 Volts A.C.



## Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3340	30	6½	\$4.60
F 3540	30	12	7.00
F 6340	60	12	7.80
F10340	100	19½	10.50
F20340	200	32½	18.30

## Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3340T	30	11½	\$6.60
F 3540T	30	20	10.60
F 6340T	60	20	11.80
F10340T	100	29	16.20
F20340T	200	45½	29.00

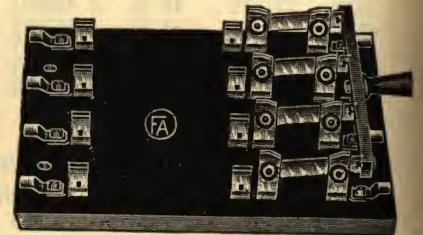
## FA Type F Knife Switches

Formed Clip

4-Pole  
Fusible at  
Bottom

Front Connection  
Plain Finish

250 Volts D.C.  
or A.C.



## Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3344	30	9	\$5.90
F 6344	60	17	10.50
F10344	100	32½	14.70
F20344	200	57	25.70

## Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3344T	30	18	\$11.00
F 6344T	60	30	19.20
F10344T	100	67½	25.40
F20344T	200	97	45.40

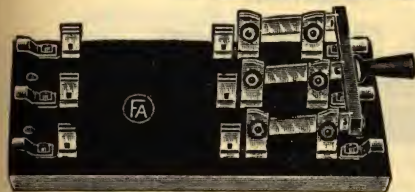
NOTE.—Double-throw switches will be furnished with fuse connections at both ends.

\*For 250 volts d.c. only.



**FA Type F Knife Switches**

**Formed Clip**  
**With Cartridge Fuse Connections at Hinge End**  
 Front Connection—Plain Finish  
 On Dead Black Finish Bases

**3-POLE**

500 Volts A.C.  
 with 600-Volt  
 Fuse Connection

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3533	30	11½	\$8.30	F 3533T	30	20	\$13.80
F 6533	60	15	9.90	F 6533T	60	20½	17.40
F10533	100	23	13.00	F10533T	100	38	20.80
F20533	200	35½	21.40	F20533T	200	61	36.10

**4-POLE**

500 Volts A.C.  
 with 600-Volt  
 Fuse Connection

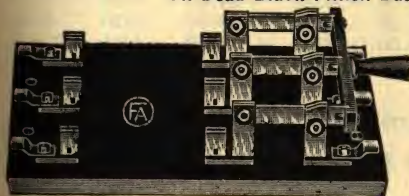


Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3544	30	20	\$11.60	F 3544T	30	34½	\$20.90
F 6544	60	29½	13.70	F 6544T	60	52	24.60
F10544	100	44	17.00	F10544T	100	94½	27.60
F20544	200	70	28.70	F20544T	200	117	47.40

Single and double-pole made to order at special prices.  
 Double-throw switches will be furnished with fuse connections at both ends.

**FA Type A Knife Switches**

**High Grade Milled In Clip**  
**With Cartridge Fuse Connections at Hinge End**  
 Front Connection—Satin Finish  
 On Dead Black Finish Bases

**3-POLE**

500 Volts A.C.  
 with 600-Volt  
 Fuse Connection

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3533	30	13¾	\$14.10	A 3533T	30	31	\$20.60
A 6533	60	15½	14.30	A 6533T	60	41	25.90
A 10533	100	25	22.20	A 10533T	100	43	37.80
A 20533	200	36	31.90	A 20533T	200	71	56.20
A 40533	400	72½	57.50	A 40533T	400	135	97.40
A 60533	600	94	89.00	A 60533T	600	184	159.20
A 80533	800	157	197.00	A 80533T	800	235	318.90
A100533	1000	174	247.40	A100533T	1000	255	409.60
A120533	1200	188	293.60	A120533T	1200	275	478.60

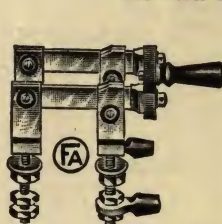
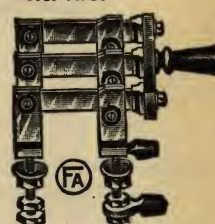
**4-POLE**

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3544	30	17½	\$19.40	A 3544T	30	42	\$33.60
A 6544	60	27½	19.70	A 6544T	60	55	34.80
A 10544	100	39	29.50	A 10544T	100	87	49.60
A 20544	200	61	43.00	A 20544T	200	107	74.50
A 40544	400	105	79.00	A 40544T	400	184	125.10
A 60544	600	132	119.30	A 60544T	600	214	212.20
A 80544	800	203	262.60	A 80544T	800	304	431.70
A100544	1000	225	335.00	A100544T	1000	348	546.00
A120544	1200	247	394.40	A120544T	1200	332	637.90

Single and double-pole made to order at special prices.  
 Double-throw switches will be furnished with fuse connections at both ends.

**FA Type B Knife Switches**

**High Grade Milled In Clip**  
**Without Fuse Connections**  
 Back Connection—Satin Finish—Unmounted  
 250 Volts D.C. or 500 Volts A.C.

**SINGLE-POLE****DOUBLE-THROW**

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3310	30	1	\$3.00	*B 3310T	30	1¼	\$4.30
B 3510	30	1¼	3.40	B 3510T	30	1½	4.70
B 6310	60	1¼	3.80	B 6310T	60	1½	5.30
B 10310	100	2½	5.00	B 10310T	100	3	6.80
B 20310	200	4½	7.80	B 20310T	200	5½	11.00
B 40310	400	9½	14.70	B 40310T	400	11½	20.40
B 60310	600	15	22.40	B 60310T	600	19	31.20
B 80310	800	18	47.10	B 80310T	800	23	69.70
B100310	1000	20	58.70	B100310T	1000	26	88.40
B120310	1200	26½	70.20	B120310T	1200	41	104.60
†B150310	1500	31	88.40	†B150310T	1500	61	133.90
†B200310	2000	47	111.50	†B200310T	2000	80½	170.20

**DOUBLE-POLE**

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3320	30	1½	\$6.20	*B 3320T	30	1¾	\$7.80
B 3520	30	2	6.60	B 3520T	30	2½	9.30
B 6320	60	2	7.40	B 6320T	60	2½	10.30
B 10320	100	4	9.50	B 10320T	100	5	13.30
B 20320	200	7½	15.40	B 20320T	200	9	21.40
B 40320	400	16	28.70	B 40320T	400	19	40.10
B 60320	600	25	43.70	B 60320T	600	32	61.30
B 80320	800	30	92.70	B 80320T	800	38	137.90
B100320	1000	33	116.70	B100320T	1000	43	174.60
B120320	1200	44	139.10	B120320T	1200	68	209.00
†B150320	1500	52	174.80	†B150320T	1500	102	265.80
†B200320	2000	78	221.00	†B200320T	2000	134	338.60

**3-POLE**

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3330	30	2¼	\$8.90	*B 3330T	30	2½	\$12.20
B 3530	30	3	9.80	B 3530T	30	3¾	13.90
B 6330	60	3	10.90	B 6330T	60	3¾	15.40
B 10330	100	6	13.80	B 10330T	100	7½	19.50
B 20330	200	11	22.60	B 20330T	200	13½	31.70
B 40330	400	24	42.40	B 40330T	400	28½	59.40
B 60330	600	37	64.00	B 60330T	600	48	90.50
B 80330	800	45	138.20	B 80330T	800	57	206.00
B100330	1000	50	173.50	B100330T	1000	65	260.20
B120330	1200	66	206.60	B120330T	1200	102	311.00
†B150330	1500	79	260.40	†B150330T	1500	153	397.00
†B200330	2000	116	329.50	†B200330T	2000	200	505.90

**4-POLE**

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3340	30	3	\$11.80	*B 3340T	30	4½	\$16.40
B 3540	30	4	13.20	B 3540T	30	5	18.60
B 6340	60	4	14.60	B 6340T	60	5	20.70
B 10340	100	8	18.50	B 10340T	100	10	26.00
B 20340	200	15	30.20	B 20340T	200	18	42.50
B 40340	400	32	57.10	B 40340T	400	38	79.80
B 60340	600	50	86.20	B 60340T	600	64	121.30
B 80340	800	60	184.00	B 80340T	800	76	255.90
B100340	1000	66	230.60	B100340T	1000	86	346.60
B120340	1200	88	275.00	B120340T	1200	136	415.00
†B150340	1500	104	345.90	†B150340T	1500	204	528.20
†B200340	2000	156	438.00	†B200340T	2000	268	673.30

\*For 250 volts d.c. only.

†Give size wire used so proper size lugs can be sent.

For switches mounted on slate or wood templates, add 50% up to 200 amperes, and 25% for everything over.

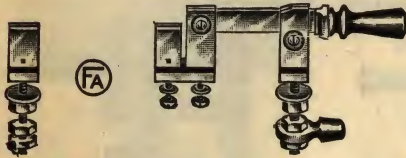
For polished finish, add 25%.

Unless otherwise specified, all switches will be furnished for 1½-inch panel mounting.



**FA Type B Knife Switches**

High Grade Milled In Clip  
With Cartridge Fuse Connections at Hinge End  
Back Connection—Satin Finish—Unmounted

**SINGLE POLE**

250 Volts D.C.  
or A.C.

**Single-Throw**

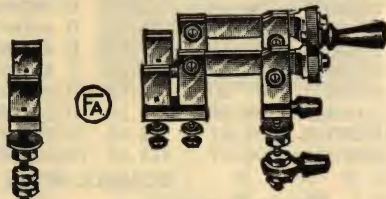
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3311	30	1	\$3.40
B 6311	60	1½	4.20
B 10311	100	3	6.70
B 20311	200	5½	10.10
B 40311	400	11½	18.90
B 60311	600	18	28.80
B 80311	800	27½	62.70
B100311	1000	30½	78.20
B120311	1200	44½	91.70

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3311T	30	1¼	\$4.90
B 6311T	60	1¾	6.20
B 10311T	100	3¾	10.30
B 20311T	200	8	15.70
B 40311T	400	15	28.70
B 60311T	600	23	44.90
B 80311T	800	33	106.30
B100311T	1000	36	133.40
B120311T	1200	65	159.90

**DOUBLE POLE**

250 Volts D.C.  
or A.C.

**Single-Throw**

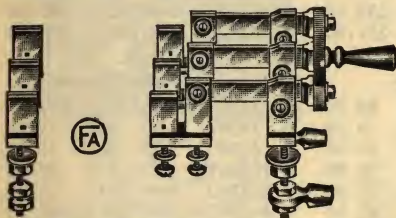
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3322	30	1¾	\$6.70
B 6322	60	2½	8.50
B 10322	100	5¼	13.20
B 20322	200	9	19.80
B 40322	400	19	37.00
B 60322	600	30	56.50
B 80322	800	46	123.10
B100322	1000	51	153.80
B120322	1200	74	181.20

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3322T	30	2	\$9.70
B 6322T	60	3	12.80
B 10322T	100	6¼	20.30
B 20322T	200	13	31.00
B 40322T	400	25	56.70
B 60322T	600	39	88.60
B 80322T	800	55	209.50
B100322T	1000	61	263.90
B120322T	1200	109	317.50

**3-POLE**

250 Volts D.C.  
or A.C.

**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3333	30	2¾	\$9.80
B 6333	60	3½	12.40
B 10333	100	8	19.40
B 20333	200	13½	29.10
B 40333	400	28½	54.80
B 60333	600	45	83.30
B 80333	800	69	183.80
B100333	1000	76	229.00
B120333	1200	111	270.20

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3333T	30	3	\$14.20
B 6333T	60	4½	18.40
B 10333T	100	9½	30.00
B 20333T	200	19½	45.90
B 40333T	400	37	84.00
B 60333T	600	59	135.40
B 80333T	800	82	313.40
B100333T	1000	91	393.80
B120333T	1200	163	474.70

**4-POLE**

250 Volts D.C. or A.C.

**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3344	30	2½	\$13.00
B 6344	60	5	16.80
B 10344	100	10½	25.80
B 20344	200	18	38.70
B 40344	400	38	73.70
B 60344	600	60	111.80
B 80344	800	92	243.90
B100344	1000	102	304.60
B120344	1200	148	359.30

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3344T	30	4	\$19.00
B 6344T	60	6	24.80
B 10344T	100	12½	40.00
B 20344T	200	26	61.10
B 40344T	400	50	121.00
B 60344T	600	78	183.90
B 80344T	800	110	416.40
B100344T	1000	122	516.30
B120344T	1200	218	632.00

For switches on slate or wood template, add 25%. For polished finish, add 25%. Unless otherwise specified, all switches will be furnished for 1½-inch panel mounting.

Double-throw switches will be furnished with fuse connections at both ends.

**Type A Trumbull Open Knife Switches**

Single Throw—Front Connected

No Fuse

250 Volts D.C.,—250 and 500 Volts A.C.  
Brush Finish

**2-Pole**

Cap. Amp.	1-Pole No.	Each	2-Pole No.	Each	3-Pole No.	Each
*30	3721	\$1.70	3801	\$2.40	3881	\$3.70
30	3721½	2.30	3801½	3.30	3881½	5.00
60	3722	2.40	3802	3.60	3882	5.50
100	3724	4.60	3804	7.00	3884	11.00
200	3726	7.00	3806	10.00	3886	15.00
400	3729	16.00	3809	24.00	3889	36.00
600	3731	23.00	3811	34.00	3891	51.00
800	3732	39.00	3812	58.00	3892	88.00
1200	3734	53.00	3814	80.00	3894	119.00
1600	3735½	101.00	3815½	151.00	3895½	226.00
2000	3736	112.00	3816	167.00	3896	251.00

\*For 250 volts only.

**Type A Trumbull Open Knife Switches**

Schedule B-1

Single Throw—Front Connected—Fusible

250 Volts D.C. and A.C.  
High Posts—Brush Finish

**2-Pole**

Cap. Amp.	1-Pole No.	Each	2-Pole No.	Each	3-Pole No.	Each
30	4361	\$2.40	4381	\$3.60	4401	\$5.50
60	4362	3.60	4382	5.50	4402	8.50
100	4364	7.00	4384	10.00	4404	14.00
200	4366	10.00	4386	15.00	4406	23.00
400	4368	23.00	4388	34.00	4408	51.00
600	4370	32.00	4390	48.00	4410	72.00
800	4371	50.00	4391	77.00	4411	116.00
1200	4373	69.00	4393	102.00	4413	154.00

**Type A Trumbull Open Knife Switches**

Schedule B-1

Single Throw—Back Connected

Brush Finish

No Fuse

250 Volts, A.C. or D.C.; 500 Volts A.C.—Low Posts

**No Fuse, 2-Pole**

Cap. Amp.	1-Pole No.	Each	2-Pole No.	Each	3-Pole No.	Each
*30	3761	\$1.80	3841	\$3.20	3921	\$4.90
30	3761½	2.60	3841½	4.70	3921½	7.50
60	3762	2.70	3842	5.00	3922	7.50
100	3764	4.60	3844	8.50	3924	13.00
200	3766	7.00	3846	13.00	3926	19.00
400	3769	15.00	3849	27.00	3929	41.00
600	3771	23.00	3851	41.00	3931	62.00
800	3772	40.00	3852	72.00	3932	108.00
1200	3774	54.00	3854	98.00	3934	147.00

**Fusible**

250 Volts, A.C. or D.C.—Low Posts

Cap. Amp.	No.	Each	No.	Each	No.	Each
30	4081	\$2.10	4161	\$3.80	4241	\$6.00
60	4082	3.30	4162	6.00	4242	9.00
100	4084	6.50	4164	11.00	4244	17.00
200	4086	9.00	4166	16.00	4246	24.00
400	4088	19.00	4168	35.00	4248	52.00
600	4090	29.00	4170	52.00	4250	79.00

\*Up to 350 volts only.



## Type C Trumbull Open Knife Switches

Schedule B-1

Single Throw—Front Connected

Plain Finish

No Fuse



2-Pole, No Fuse

2-Pole, Fusible

250 Volts, A.C. or D.C.; 500 Volts, A.C.—Low Posts

Cap. Amp.	No.	1-Pole Each	No.	2-Pole Each	No.	3-Pole Each
*30	3001	\$ .70	3041	\$1.10	3081	\$1.70
30	3002	1.10	3042	1.70	3082	2.50
60	3003	1.30	3043	2.00	3083	2.90
100	3005	2.60	3045	3.90	3085	6.00
200	3006	4.60	3046	7.00	3086	10.00

Fusible

250 Volts, D.C. and A.C.—High Posts

No.	Each	No.	Each	No.	Each	
30	1120	\$1.10	1130	\$1.70	1140	\$2.50
60	1121	1.90	1131	2.80	1141	4.30
100	1123	3.80	1133	6.00	1143	9.00
200	1124	7.00	1134	10.00	1144	15.00

\*Up to 250 volts only.

## Trumbull Telephone or Battery Knife Switches

Schedule B

Front Connections—Mounted

30 Amperes—125 Volts

Porcelain Base

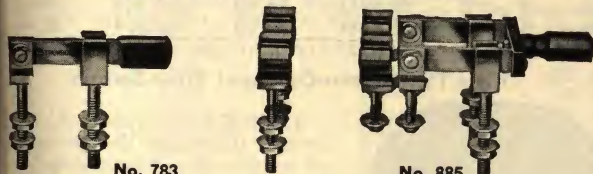
No.	Each	Style	Size, In.—Length, Width	Std. Pkg.	Std. Pkg. Wt. Lb.
707	\$ .50	S. P. S. T.	2 1/2 x 1 1/4	10	2 1/2
708	.65	S. P. D. T.	3 5/8 x 1 5/16	5	1 1/2
709	.75	D. P. S. T.	2 1/2 x 2	10	3 1/2
710	.95	D. P. D. T.	3 5/8 x 2	5	2 1/2
711	1.20	3 P. S. T.	2 1/2 x 3 1/4	5	3
712	1.50	3 P. D. T.	3 5/8 x 3 1/4	5	5

Fiber Base

No.	Each	Style	Size, In.—Length, Width	Std. Pkg.	Std. Pkg. Wt. Lb.
7	\$ .70	S. P. S. T.	2 1/2 x 1 1/8	20	3
8	.85	S. P. D. T.	3 3/4 x 1 1/8	10	2
9	1.00	D. P. S. T.	2 1/2 x 2	10	2 1/2
10	1.30	D. P. D. T.	3 3/4 x 2	10	4
40	1.50	3 P. S. T.	2 1/2 x 3 1/4	10	5
41	2.10	3 P. D. T.	3 3/4 x 3 1/4	10	6
42	2.30	4 P. S. T.	2 1/2 x 4 3/8	10	6
43	3.30	4 P. D. T.	3 3/4 x 4 3/8	10	10

## Trumbull Telephone or Battery Knife Switches

Back Connections—Unmounted



No. 783

No. 885

Length of studs, 1 1/2 in., threaded 3/8 inch from the ends with 10x24 threads. Plain finish. Also available with polished finish.

No Fuse

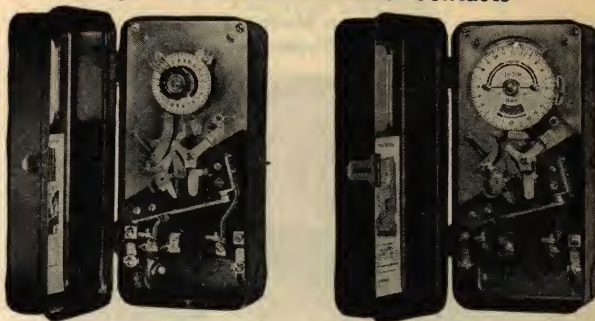
No.	Each	Style	Std. Pkg.	Std. Pkg. Wt. Lb.
783	\$ .65	S. P. S. T.	50	10
784	.80	S. P. D. T.	50	13
785	1.00	D. P. S. T.	50	18
786	1.30	D. P. D. T.	25	10
787	1.40	3 P. S. T.	25	10
788	2.00	3 P. D. T.	10	5
789	2.10	4 P. S. T.	10	5 1/2
790	2.70	4 P. D. T.	10	8

Fusible

No.	Each	Style	Std. Pkg.	Std. Pkg. Wt. Lb.
883	\$ .85	S. P. S. T.	50	13
885	1.30	D. P. S. T.	25	15
887	1.90	3 P. S. T.	25	20
889	2.60	4 P. S. T.	10	12

## Types KA and KAZ Sangamo Time Switches

Synchronous Motor—Silver Contacts



Type KA

Type KAZ

Six levers are provided for a maximum of three daily on and off operations. Accurate timing is obtained by turning the minute hand reset staff on 24-hour dial. Time-switch can be manually operated without affecting subsequent operations. Available in a wide variety of combinations providing two-circuit duplex and outdoor switches; also with Sunday and holiday omitting device, as well as advanced time cutoff. Type KAZ is furnished with astronomic dial.

Dimensions: 9 1/4 x 4 1/2 x 3 3/4 inches; four 3/4-inch pryouts in back, bottom, and both sides.

Shipping weight, 6 1/2 pounds.

Type	Each	120V. A.C.—Amps.	Each	240V. A.C.—Amps.	Poles	Throw
KA-11	\$25.00	35	\$25.00	35	Single	Single
KA-21	27.50	35	27.50	35	Double	Single
KA-31	31.00	6	31.00	6	Triple	Single
KA-12	27.50	35	27.50	35	Single	Double
KA-22	30.00	6	30.00	6	Double	Double
KA-32	33.00	6	33.00	6	Triple	Double

Specify voltage and frequency.

Form KAG, for reverse time limits between off and on, furnished at no extra charge.

Double Knobs, for Both Off and On.....add \$4.00

Form KAY, Two-Circuit.....add 6.00

Form KAH, Omitting Device.....add 2.00

Form KAHE, Advance Time Cutoff with Omitting Device.....add 7.00

Outdoor Case Without Window.....add 15.00

## Type VSW Sangamo Time-Switches

Synchronous Motor—With Carryover



Synchronous timing is combined with reserve spring clock operation during current interruptions up to 10 hours. This entirely automatic carryover eliminates the necessity of re-setting the dial after current interruptions, and insures accurate timing under all conditions. The omitting device is included.

Dimensions: 9 1/4 x 4 1/2 x 3 3/4 inches; 3/4-inch pryouts in back, bottom, and both sides.

Shipping weight, 6 1/2 pounds.

Type	Each	120V. A.C.—Amps.	Each	240V. A.C.—Amps.	Poles	Throw
VSW-11	\$42.00	35	\$42.00	35	Single	Single
VSW-21	44.50	35	44.50	35	Double	Single
VSW-31	48.00	6	48.00	6	Triple	Single
VSW-12	44.50	35	44.50	35	Single	Double
VSW-22	47.00	6	47.00	6	Double	Double
VSW-32	50.00	6	50.00	6	Triple	Double

Specify voltage and frequency.

Form VSWE, Advance Time Cutoff.....add \$5.00  
Also available in the same combinations as Type KA, including astronomic dial.

## Sangamo Astronomic Dials

For automatic control of outdoor advertising, flood-lights, air beacons, lighthouses, etc.

Turns lights on at sunset and off at sunrise. Also permit off operation at any time between 9:30 p.m. and 2:15 a.m. Special schedules are available.

For 30, 35, 40, 42 1/2 and 45 Latitudes.....each \$11.00

For 20, 27 1/2, 32 1/2, 37 1/2, 50, and 52 Latitudes.....each 13.50

When ordering, latitude must be specified.



## Series 300 Paragon Self-Lubricating Time Switches

### Telechron Motored

30 Amperes, 115 or 230 Volts, 60 Cycles, A.C.



Interior

Exterior

Accurate and durable for controlling signs, commercial lights, attic fans, stokers, oil burners, blowers, pumps, valves, motors, etc.

Telechron motored, has only two exposed gears, all other gears operate in a sealed, oil filled chamber.

Features sturdy clock train, snap action switch, and simple hand trip. Figure 2000 per cent more dial power than required.

Furnished in an attractive case.

Shipping weight, 5 pounds.

No.	Each	Amps. per Pole	Watts per Pole	Switch and Motor Rating	No. Poles	No. Throws
301	.....	30	3000	115 V 60 Cy. A.C.	1	1
302	.....	15	3000	230 V 60 Cy. A.C.	1	1
303	.....	30	3000	115 V 60 Cy. A.C.	2	1
304	.....	15	3000	230 V 60 Cy. A.C.	2	1
305	.....	30	3000	115 V 60 Cy. A.C.	1	2
306	.....	15	3000	230 V 60 Cy. A.C.	1	2
307	.....	30	3000	24 V 60 Cy. A.C.	1	2

## No. PS-30 Paragon Poultry House Lighting Time Control Switches

110 Volts, 60 Cycles—A.C.

Schedule No. 1

Developed especially for poultry house lighting. Sturdy construction.



Time switch is modern, efficient, precision-built control instrument. Complete with heavy case and cover, and designed for wall mounting. Has knock-outs at back, sides, and bottom for ease of installation.

The procedure when morning and evening lights are used is to turn the lights on Bright in the morning and Off after sunrise. Then they are turned on again about one-half hour before sundown, and after a couple of hours the bright lights are turned off and the dim lights turned on. The dim lights are left on for 15 or 20 minutes and then turned off. This method

gets the birds up at the same hour and puts them to roost at the same hour each day. It has been found with this arrangement that all of the birds will go onto the roost within a very few minutes after the bright lights are turned off and the dim, or roosting lights are turned on.

Watts per pole: bright circuit, 3000; dim circuit, 1000.

Shipping weight, 4 pounds.

No. PS-30, Morning and Evening Lighting.....each **\$13.50**

No. PSN-30, Evening Lighting Only.....each **13.50**

No. 301, Morning Lighting Only.....each **11.75**

For 220 volts or 25 cycles add \$1.00. No extra charge for 50 cycles.

## G-E Automatic Time Switches and Timing Devices

### Telechron Motor Driven

G-E automatic time switches are operated by the well-known telechron synchronous motor, and do not require winding, regulating, or other attention.

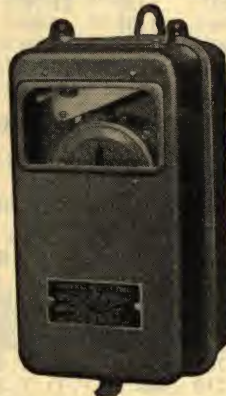
While the types listed include a wide range of ratings and meet many requirements, switches of other ratings and types can be furnished.

The following table may be of assistance in selecting the proper type of switch for the desired operation.

For Uses Requiring	Use Type
Operation Related to Hour of Day (Outdoor and Indoor Installation).....	T-27
Repeating Operation Cycle, Not Related to Hour of Day (Indoor Installation).....	TSA-14
Process Timing and Control, Readily Adjusted Switch (Indoor Installation).....	TSA-10
Counting Units of Time (Machine Operating Time)	KT

### Type T-27 General-Purpose Timer

60 Cycles—230 Volts, A.C.—Contacts 35 Amperes



The Type T-27 time switch employs the well-known Telechron synchronous motor, and is equipped with removable and adjustable riders to provide for convenience of adjustment. Can be furnished with the skip-a-day omitting device at \$3.00 extra.

Switches are equipped with Type B-8, 2-watt motor. Can be furnished equipped with 6-watt motors for operation in temperature ranges of -20°F. to +110°F, at no increase in price. Dimensions, 7½x5½x4¼ inches.

Approximate shipping weight, 8 pounds.

Motor Volts	Switch Pole Throw	Plain Dial No.	Each	Astronomic Dial No.	Each
115	1 1	83X948	\$23.00	88X467	\$33.00
230	1 1	83X949	23.00	88X468	33.00
115	1 2	83X950	26.00	88X469	36.00
230	1 2	83X951	26.00	88X470	36.00
115	2 1	83X952	26.00	88X471	36.00
230	2 1	83X953	26.00	88X472	36.00
115	2 2	88X443	29.00	88X473	39.00
230	2 2	88X444	29.00	88X474	39.00

Same prices for 50 and 25-cycle ratings.

### Type TSC-6 Coin-Operated Time Switch



The TSC-6 coin-operated time switch dispenses the services of appliances. Automatically, this time switch collects and banks a coin, and in return, permits the use of an appliance for a predetermined number of minutes.

Approximate dimensions, 4¼x6x4 inches.

Approximate shipping weight, 7 pounds.

Volts	Cycles	Contact Hp.	Coin	Time Interval Minutes	No.	Each
115	60	¼	Dime	30	75X850	\$17.25
115	50	¼	Dime	30	75X849	17.25
115	25	¼	Dime	30	75X848	17.25



## G-E Automatic Time Switches and Timing Devices

### Telechron Motor Driven

#### Type TSA-14 for Control of Repeating Schedules

60 Cycles—Contact Rated 10 Amperes, A.C.



Type TSA-14 is designed to control repeating cycles of operation of electric circuits without respect to the time of day. The "on" time may be varied between 1 and 99 per cent of the total time cycle.

Die-cast base is equipped with a pipe nipple that is suitable for mounting in a knockout of any convenient junction box or switch box.

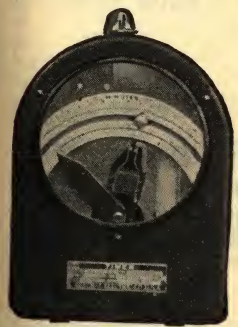
Timing is obtained by a Telechron synchronous motor, therefore no winding or regulating is required.

Dimensions, 5-inch diameter by 3 1/8-inch depth.

Approximate shipping weight, 4 pounds.

Total Cycle: 10 or 15 Seconds			Total Cycle: 5, 7, 10, or 15 Minutes		
Conduit Mounting Nipple	Volts	Each	Conduit Mounting Nipple	Volts	Each
Top	115	\$22.50	Top	115	\$18.00
Bottom	115	22.50	Bottom	115	18.00
Top	230	22.50	Top	230	18.00
Bottom	230	22.50	Bottom	230	18.00
Total Cycle: 20, 30, or 40 Seconds; 1 or 3 Minutes			Total Cycle: 30, 45, or 60 Minutes		
Top	115	\$20.00	Top	115	\$16.50
Bottom	115	20.00	Bottom	115	16.50
Top	230	20.00	Top	230	16.50
Bottom	230	20.00	Bottom	230	16.50

When ordering specify total ("on" plus "off") time cycle.  
Same prices for 50 or 25-cycle ratings.



#### Type TSA-10 for Process Timing

60 Cycles

Type TSA-10 process timer is suitable for the control of electrically operated machines, devices, etc., and is readily adjusted over a wide range of operating cycles. Can be supplied with normally open or normally closed contacts. Resetting is automatic when the clutch coil is de-energized.

Because of its flexibility of adjustment and connection, and since its operations can be controlled electrically, this timer is

adaptable to many control applications.

Relays for use with the Type TSA-10 timer, enabling completely automatic control, can also be furnished.

Dimensions, 9x6x4 inches.

Approximate shipping weight, 8 pounds.

Double-Time Scale—1/5, 1/3, 2/3, 1, 2, 3, 4, 5, 6, 10, 15, 20, 30, 40, 60, 120, 180, 240, 300, 360 Seconds;  
1/5, 1/3, 2/3, 1, 2, 3, 4, 5, 6, 10, 15, 20, 30, 40 Minutes; 1/5 or 1/6 Hours

Volts	Contacts	Time-Set Knob	Each
115	With	Internal	\$43.25
230	With	Internal	43.75
115	Without	Internal	43.00
230	Without	Internal	43.50
115	With	External	46.00
230	With	External	46.50
115	Without	External	45.75
230	Without	External	46.25
Single-Time Scale—5, 10, 15, 20, 30, 40 Seconds; 1, 2, 3, 5, 6, 10, 15, 20, 30, 40 Minutes; 1, 2, 3, 4, or 6 Hours			
115	With	Internal	\$37.50
230	With	Internal	38.00
115	Without	Internal	37.25
230	Without	Internal	37.75
115	With	External	40.25
230	With	External	40.75
115	Without	External	40.00
230	Without	External	40.50

When ordering specify scale rating and normally open or normally closed main contacts.

Same prices for 50 or 25-cycle ratings.

## G-E Automatic Time Switches and Timing Devices

### Telechron Motor Driven

#### Type KT Automatic Time Meters

60 Cycles



Round for Flush Mounting



Square for Flush Mounting



Conduit



Portable

Whenever knowledge of elapsed time is of value, the Type KT time meter is a profitable investment. Machine-operating time, often very difficult and expensive to measure, is easily and inexpensively measured with this device.

This time meter consists of a cyclometer, driven by a Telechron synchronous motor. Connected to an electric circuit, it will measure and indicate the number of hours, tenths of hours, or minutes that the circuit is in use.

Approximate shipping weight, 6 pounds.

#### Round

Approximate dimensions, 3 1/2 inches in diameter.

Volts	REGISTERS			Each
	Hours No.	1/10 Hours No.	Minutes No.	
11	94X917	94X921	94X925	\$20.50
115	94X918	94X922	94X926	19.50
230	94X919	94X923	94X927	20.00
460	94X920	94X924	94X928	22.00

#### Square

Approximate dimensions, 3x3 1/8 inches.

Volts	Hours No.	1/10 Hours No.	Minutes No.	Each
11	94X929	94X933	94X937	\$20.50
115	94X930	94X934	94X938	19.50
230	94X931	94X935	94X939	20.00
460	94X932	94X936	94X940	22.00

#### Conduit

Approximate dimensions: 4 1/4 inches in diameter; 3 inches deep.

Volts	Hours No.	1/10 Hours No.	Minutes No.	Each
11	94X893	94X897	94X901	\$20.50
115	94X894	94X898	94X902	19.50
230	94X895	94X899	94X903	20.00
460	94X896	94X900	94X904	22.00

#### Portable

Approximate dimensions: 6 1/8 inches high; 3 inches deep.

Volts	Hours No.	1/10 Hours No.	Minutes No.	Each
11	94X905	94X909	94X913	\$22.00
115	94X906	94X910	94X914	20.50
230	94X907	94X911	94X915	22.00
460	94X908	94X912	94X916	23.00

Same prices for 50 or 25-cycle ratings.



## Mercoïd Mercury Switches



Type 9-51R



Type 9-61R



Type 9-81

Mercoïd Hermetically Sealed Mercury Switch is used for making and breaking an electrical circuit. Not subject to open arcing, pitting or sticking of contacts. Cannot be affected by dust, dirt or corrosion. Long lived dependable service. Positive operation is assured under various operating conditions.

Many types available to meet different requirements.

Types 9-51R or 9-51S, 10 Amp. 115 V., 5 Amp. 230 V.....	each	\$2.60
Types 9-61R or 9-61S, 4 Amp. 115 V., 2 Amp. 230 V....	ea.	1.50
Type 9-81, 9/10 Amp. 24 V.....	each	3.80
Type PP-93-11 Magnet for Type 9-81 Switch.....	each	1.00

## Mercoïd Sensatherms

9/10 Ampere, 24 Volts or Less



Extremely sensitive and accurate in performance. Follows room temperature changes so quickly that uniform control is assured.

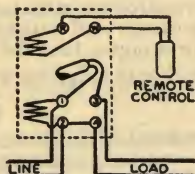
Operates on temperature variation of  $\frac{1}{2}^{\circ}$  above or below point set (total differential  $1^{\circ}\text{F}.$ ) No internal heater coils or other means of artificial acceleration are used.

Champagne tone finish.

Type H, for Heating Applications 55-85°F.....	each	\$8.00
Type R, for Air Conditioning and Cooling, 55-85°F. and 65-95°F.....	each	8.00

## Mercoïd Transformer-Relays

For A.C. Current



For use with stokers, oil burners, air conditioning and industrial applications.

Transformer is self-contained in the relay, as the primary coil induces 24 volts in the secondary coil by transformer action. Quiet and dependable mercury contact instrument with low voltage thermostat or pilot circuit. No metal contacting faces to hum or chatter.

Single pole circuit, normally open (load circuit common with supply circuit). Electrical capacity, 10 amperes, 115 volts; 5 amperes, 230 volts. Motor rating, 1 hp. repulsion-induction;  $\frac{1}{2}$  hp. split-phase. Remote control circuit, 24-volt, self induced.

Type....	V2-3A	V2-3B	V2-3D	V2-3F	V2-3G	V2-3J
Each....	\$12.00	13.00	13.00	12.50	13.00	13.00
Volts....	115	115	115	230	230	230
Cycles...	60	50	25	60	50	25

## For Heater Loads

Types V2-26A and V2-26F especially designed to handle heavy non-inductive heater loads. Non-inductive a.c. heater load rating: Type V2-26A, 20 amperes, 115 volts, maximum 2000 watt; Type V2-26F, 20 amperes, 230 volts, maximum 4000 watt.

Type.....	V2-26A	V2-26F
Each.....	\$13.00	13.00
Volts.....	115	230
Cycles.....	60	60

Other types also available in many different circuit arrangements and capacities.

## Type K10-1 Mercoïd Lever Valves



Designed for controlling light and heavy oils, water, air, steam, gas and ammonia.

The lever-action develops six times the power of usual solenoid, making possible operation at very high pressures for corresponding port sizes.

Quiet in operation, two-wire, of packless construction and closes upon current failure.

Normally closed type; opens when energized.

Pipe size,  $\frac{3}{8}$  and  $\frac{1}{2}$  inch;  $\frac{3}{8}$ -inch is standard.

Standard port sizes,  $\frac{1}{8}$ ,  $\frac{1}{4}$ , and  $\frac{1}{2}$  inch.

Type K10-1, $\frac{3}{8}$ -Inch Pipe Size.....	each	\$13.40
Type K10-1, $\frac{1}{2}$ -Inch Pipe Size.....	each	14.40

Other solenoid and hydrometer valves upon application.

## Type DA-31 Mercoïd Pressure Controls



Has independent outside adjustments for setting both cut-in and cut-out pressures. Indicators show exact pressures for which instrument is set to operate.

Furnished with adjustment locking device and iron pig-tail siphon.

Electrical capacity, 10 amperes, 115 volts; 5 amperes, 230 volts and on order 3 amperes, 440 volts, a.c. or d.c. Motor rating 1-hp. repulsion-induction,  $\frac{1}{2}$ -hp. split phase or d.c.

Range No.	Each	Adjustable Operating Range Pounds	DIFFERENTIALS, POUNDS		Maximum Pressure Pounds
			Min.	Max.	
1	\$12.00	0 to 14	1	14	30
2	15.00	0 to 30-In. Vac.	2-In. Vac.	30-In. Vac.	...
3	12.50	10-In. Vac. to 12	1	Entire Range	30
4	13.50	0 to 35	$1\frac{3}{4}$	35	50
5	13.50	0 to 60	$2\frac{1}{2}$	60	80
6	13.50	0 to 100	$3\frac{3}{4}$	100	125
7	15.00	0 to 150	6	150	200
8	15.50	0 to 200	6	200	240
9	16.00	0 to 300	12	300	400

Mounting bracket with 12 feet copper tubing, \$4.20 extra.

## Type DA-21 Mercoïd Pressure Controls

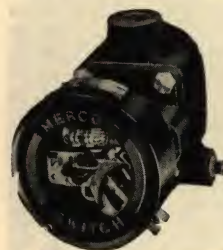
Similar to Type DA-31 except that it has a heavier gage bourdon tube with a check valve to dampen out pulsations.

Adjustments, electrical capacity same as Type DA-31.

Range No.	Each	Adjustable Operating Range Pounds	Bourdon Tubing	DIFFERENTIALS, POUNDS		Maximum Pressure Pounds
				Min.	Max.	
1	\$12.50	0 to 14	Brass	1	14	30
4	14.00	0 to 35	Brass	$2\frac{1}{2}$	35	80
5	14.00	0 to 60	Brass	3	60	125
5S	20.00	0 to 60	Steel	6	60	150
6	15.00	0 to 100	Brass	6	100	200

Types DA-31 and DA-21 can be furnished in explosion-proof housing. Closer differential controls on application.

## Type DA-121 Mercoïd Combination Pressure and Low Water Controls



For low pressure steam.

Dial has two adjustable pointers which show pressures at which instrument is set to operate. Range is set by turning outside adjustments.

Electrical capacity, 10 amperes 115 volts, 5 amperes 230 volts; and on special order 3 amperes 440 volts, a.c. or d.c. Motor rating, 1-hp. repulsion-induction,  $\frac{1}{2}$ -hp. split phase, or d.c.

Range No.	Each	Adjustable Operating Range, Lb.	DIFFERENTIALS POUNDS		Max. Press. Lb.
			Min.	Max.	
1	\$28.00	0 to 14-Lb.	1	14	30
3	29.00	10-In. Vac. to 12-Lb.	1	Entire Range	30

Other types liquid level controls on application.



## Type DA-36 Mercoild Immersion Hot Water Controls



Used as hot water storage tank or boiler water temperature control; also as a limit control.

Has double outside adjustments, accurately calibrated visible dial and close operating differential.

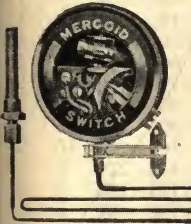
Differential 2° minimum, 100° maximum. Rating, 10 amperes 115 volts, 5 amperes 230 volts. Motor rating, 1-hp., R.I. ½-hp. s.p. or d.c. Bulb, 3 inches long with ½-inch I.P.T. connection.

Type DA-36 has straight stem.

If back angle stem is desired, specify Type DA-37.

Range No.		Adjustable Operating Range	MIN. DIFFERENTIALS		Max. Temp. Must Not Exceed
	Each		High	Low	
5	\$15.00	100-200°	2°	9°	220°
6	15.00	135-235°	3°	10°	260°

## Type DA-35 Mercoild Temperature Controls



For control of liquids or gases not injurious to copper or brass, such as air, oil, water, paraffin, glue or distillate vapors.

Has double outside adjustment, accurately calibrated visible dial. Furnished standard with 6 feet flexible tubing.

Electric capacity, 10 amperes 115 volts, 5 amperes 230 volts. Motor rating, 1-hp., R.I. ½-hp. s.p. or d.c.

Range No.	Each	Adjustable Operating Range	MIN. DIFFERENTIALS	Low
			High	
3	\$22.00	25-100°	1°	5°
4	22.00	50-150°	2°	12°
5	19.00	100-200°	2°	9°

Other ranges available.

## Type 115-W Mercoild Immersatherms



A summer-winter hot water supply control.

Has many industrial applications for controlling temperatures of liquids or gases not injurious to copper.

Low voltage, 9/10 amperes, 24 volts.

Type 115-W, Range 50-250°F.....	each	\$9.00
Type 115-W, Range 170-430°F.....	each	15.00

## Mercoild Clamp-On Type Risertherms



A temperature limiting control designed to be clamped on risers of hot water heating systems or the surfaces of hot water tanks.

Electrical capacity either a.c. or d.c., 10 amperes, 115 volts, 5 amperes, 230 volts, and on special order at extra charge of \$3.60, 3 amperes, 440 volts. Motor is 1-hp. repulsion-induction, ½-hp. split phase, or d.c.

### No. 34

For use in connection with thermostat for dual control of unit heaters. Standard range 140 to 230°F., differential 6 to 25°F.

No. 34, 10-Ampere, Single Pole.....	each	\$10.00
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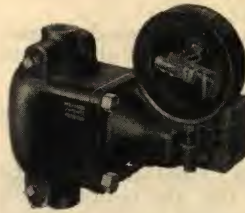
### No. 35

A limit control for hot water systems. Standard range 110 to 200°F., differential 6 to 25°F.

No. 35, 10-Ampere, Single Pole.....	each	\$10.00
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## Type 75 Mercoild Boiler Feed Water Pump Controls

300 Pounds Pressure Rating



Especially designed for regulation of motor-driven feed water pumps on boilers where pressures do not exceed 300 pounds. Operates feed water pump on approximately ¾-inch variation in water level.

Boilers used for generation of steam for industrial applications require constant replacement of water to make up for evaporation

losses. As such boilers generally operate on high pressures, motor-driven feed water pumps are required. Close regulation of the water level is desirable to prevent lowering of steam pressure due to admission of too great a quantity of water.

Equipped with hermetically sealed mercury contact switch.

No. 2120. Feed water pump control only. Single pole, 10 amperes.

No. 2122. Feed water pump control with alarm circuit. As water level drops 10 amperes pump circuit closes first. If water level continues to drop 4 amperes alarm circuit closes.

No. 2123. Feed water pump control and low water cut-out. As water level drops 10 amperes pump circuit closes first. If water level continues to drop 10 amperes, circuit controlling heating equipment opens.

Pipe connections, 1-inch I.P.S.

Electrical capacity: 10 amperes 115 volts, 5 amperes 230 volts, a.c. or d.c. Alarm circuit, 4 amperes 115 volts, 2 amperes 230 volts.

Motor rating: 1-hp. repulsion-induction, ½-hp. split phase or d.c.

Approximate shipping weight, 35 pounds.

No. ....	2120	2122	2123
Each .....	\$40.00	43.00	44.00

Available for 3 amp. 440 volts at \$3.60 additional.

If desired for maximum pressures of 150 pounds, deduct \$5.00 from price.

## Mercoild Pyrattherms



Type JM1 is a safety and ignition control for oil burners employing intermittent spark or gas ignition. Full protection against flame or ignition failure. Positive ignition control closes ignition circuit before every starting operation of burner.

Type JM for constant ignition burners.

Electric capacity, 10 amperes, 115 volts, 5 amperes 230 volts, a.c. only, 60 cycles.

Type JM1.....	each	\$26.00
Type JM.....	each	24.00

## Mercoild Controls

### Lever Arm Type

To open and close circuits

No. 46 Snap Action..ea. \$8.50

No. 47 Direct Action ea. 7.00

No. 48 3-Position..ea. 10.00

### Float Type

To maintain fluid levels in tanks or control sump pumps or cellar drainers.

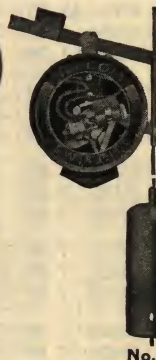
No. 40 Counter-Balance.....ea. \$20.00

No. 41 Plunger...ea. 20.00

If rod or floats are not desired, deduct \$5.50.



No. 41



No. 40

## No. 855 Mercoild Thermostats

For high voltage applications, to handle motor load directly without use of relay.

Standard ranges: 56-80°, 38-70°, 65-90° and 25-60°.

Shipping weight, 2 pounds.

No. 855, without Thermometer..each \$12.00

No. 855T, with Thermometer...each 13.00

Special ranges available at additional cost.





Buss One-Time Fuses

Non-Renewable—250 to 600 Volts

Buss One-Time Fuses are guaranteed, with good contact, to operate perfectly at any overload without charring or burning the fuse case.

Buss One-Time Cartridge Fuses are listed as standard by the Underwriters' Laboratories.

Except for instrument protection. Fusetrons should be used instead of fuses, as they give true and complete protection while their remarkable time-lag prevents useless blows from starting currents, etc.

Ferrule Contact—1 to 60 Amperes



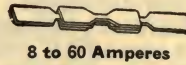
250 Volts				600 Volts			
Type and Amperes	Each	Lgth. in.	No. in Ctn.	Type and Amperes	Each	Lgth. in.	No. in Ctn.
NON1	\$.15	2	10	NOS1	\$.50	5	10
NON3	.15	2	10	NOS3	.50	5	10
NON6	.15	2	10	NOS6	.50	5	10
NON10	.15	2	10	NOS10	.50	5	10
NON15	.15	2	10	NOS15	.50	5	10
NON20	.15	2	10	NOS20	.50	5	10
NON25	.15	2	10	NOS25	.50	5	10
NON30	.15	2	10	NOS30	.50	5	10
NON35	.30	3	10	NOS35	.80	5½	10
NON40	.30	3	10	NOS40	.80	5½	10
NON45	.30	3	10	NOS45	.80	5½	10
NON50	.30	3	10	NOS50	.80	5½	10
NON60	.30	3	10	NOS60	.80	5½	10

Knife Blade Contact—70 to 600 Amperes



250 Volts				600 Volts			
Type and Amperes	Each	Lgth. in.	No. in Ctn.	Type and Amperes	Each	Lgth. in.	No. in Ctn.
NON70	\$.90	5⅞	5	NOS70	\$1.80	7⅞	5
NON80	.90	5⅞	5	NOS80	1.80	7⅞	5
NON90	.90	5⅞	5	NOS90	1.80	7⅞	5
NON100	.90	5⅞	5	NOS100	1.80	7⅞	5
NON110	2.00	7⅞	1	NOS110	3.50	9⅞	1
NON125	2.00	7⅞	1	NOS125	3.50	9⅞	1
NON150	2.00	7⅞	1	NOS150	3.50	9⅞	1
NON175	2.00	7⅞	1	NOS175	3.50	9⅞	1
NON200	2.00	7⅞	1	NOS200	3.50	9⅞	1
NON225	3.60	8⅞	1	NOS225	7.00	11⅞	1
NON250	3.60	8⅞	1	NOS250	7.00	11⅞	1
NON300	3.60	8⅞	1	NOS300	7.00	11⅞	1
NON350	3.60	8⅞	1	NOS350	7.00	11⅞	1
NON400	3.60	8⅞	1	NOS400	7.00	11⅞	1
NON450	5.50	10⅞	1	NOS450	10.00	13⅞	1
NON500	5.50	10⅞	1	NOS500	10.00	13⅞	1
NON600	5.50	10⅞	1	NOS600	10.00	13⅞	1

Buss Super-Lag Renewable Fuses and Renewal Links



Code (Paragraph 4346) in many cases permits smaller sized fused safety switches, fuse panels or fuse blocks if Buss Super-Lag fuse is used. One-piece link has long time lag that reduces number of blows on starting currents or other harmless overloads.

Complete Fuses				Renewal Links			
Type and Amperes	Each	Length Overall Inches	Ctn. Qty.	Type and Amperes	Each	Ctn. Qty.	Weight Pounds per 100
REN3	\$.40	2	10	LKN3	\$.02	20	.25
REN6	.40	2	10	LKN6	.02	20	.25
REN10	.40	2	10	LKN10	.02	20	.25
REN15	.40	2	10	LKN15	.02	20	.25
REN20	.40	2	10	LKN20	.02	20	.25
REN25	.40	2	10	LKN25	.02	20	.25
REN30	.40	2	10	LKN30	.02	20	.25
REN35	.80	3	10	LKN35	.04	20	.25
REN40	.80	3	10	LKN40	.04	20	.25
REN45	.80	3	10	LKN45	.04	20	.25
REN50	.80	3	10	LKN50	.04	20	.25
REN60	.80	3	10	LKN60	.04	20	.25
REN70	1.80	5⅞	5	LKN70	.09	10	.25
REN80	1.80	5⅞	5	LKN80	.09	10	.25
REN90	1.80	5⅞	5	LKN90	.09	10	.25
REN100	1.80	5⅞	5	LKN100	.09	10	.25
REN110	4.00	7⅞	1	LKN110	.20	5	.25
REN125	4.00	7⅞	1	LKN125	.20	5	.25
REN150	4.00	7⅞	1	LKN150	.20	5	.25
REN175	4.00	7⅞	1	LKN175	.20	5	.25
REN200	4.00	7⅞	1	LKN200	.20	5	.25
REN225	7.20	8⅞	1	LKN225	.36	5	.25
REN250	7.20	8⅞	1	LKN250	.36	5	.25
REN300	7.20	8⅞	1	LKN300	.36	5	.25
REN350	7.20	8⅞	1	LKN350	.36	5	.25
REN400	7.20	8⅞	1	LKN400	.36	5	.25
REN450	11.00	10⅞	1	LKN450	.55	2	.25
REN500	11.00	10⅞	1	LKN500	.55	2	.25
REN600	11.00	10⅞	1	LKN600	.55	2	.25

Complete Fuses				Renewal Links			
Type and Amperes	Each	Length Overall Inches	Ctn. Qty.	Type and Amperes	Each	Ctn. Qty.	Weight Pounds per 100
RES3	\$1.00	5	10	LKS3	\$.05	20	.25
RES6	1.00	5	10	LKS6	.05	20	.25
RES10	1.00	5	10	LKS10	.05	20	.25
RES15	1.00	5	10	LKS15	.05	20	.25
RES20	1.00	5	10	LKS20	.05	20	.25
RES25	1.00	5	10	LKS25	.05	20	.25
RES30	1.00	5	10	LKS30	.05	20	.25
RES35	1.60	5½	10	LKS35	.08	20	.25
RES40	1.60	5½	10	LKS40	.08	20	.25
RES45	1.60	5½	10	LKS45	.08	20	.25
RES50	1.60	5½	10	LKS50	.08	20	.25
RES60	1.60	5½	10	LKS60	.08	20	.25
RES70	3.60	7⅞	5	LKS70	.18	10	.25
RES80	3.60	7⅞	5	LKS80	.18	10	.25
RES90	3.60	7⅞	5	LKS90	.18	10	.25
RES100	3.60	7⅞	5	LKS100	.18	10	.25
RES110	7.00	9⅞	1	LKS110	.35	5	.25
RES125	7.00	9⅞	1	LKS125	.35	5	.25
RES150	7.00	9⅞	1	LKS150	.35	5	.25
RES175	7.00	9⅞	1	LKS175	.35	5	.25
RES200	7.00	9⅞	1	LKS200	.35	5	.25
RES225	14.00	11⅞	1	LKS225	.70	5	.25
RES250	14.00	11⅞	1	LKS250	.70	5	.25
RES300	14.00	11⅞	1	LKS300	.70	5	.25
RES350	14.00	11⅞	1	LKS350	.70	5	.25
RES400	14.00	11⅞	1	LKS400	.70	5	.25
RES450	20.00	13⅞	1	LKS450	1.00	2	.25
RES500	20.00	13⅞	1	LKS500	1.00	2	.25
RES600	20.00	13⅞	1	LKS600	1.00	2	.25

Sizes from 1 to 600 not listed, in any quantity, take larger quantity price on next larger amperage, plus a set-up charge of \$2.50 on each size or type on each shipment. Fuses and links of the same size and type in the same shipment take only one set-up charge for such size.



## Jefferson Super-Lag Renewable Enclosed Fuses

Care should be taken to insure clean contact surfaces between the copper blades, renewals and washers. The nut should always be drawn up tight.

### Ferrule Type



Cap. Amp.	Carton	250 Volts			600 Volts		
		Cat. No.	Per 100	Wt., Lbs. Per 100	Cat. No.	Per 100	Wt., Lbs. Per 100
3	10	391-003	\$40.00	5 $\frac{3}{4}$	393-003	\$100.00	19
6	10	391-006	40.00	5 $\frac{3}{4}$	393-006	100.00	19
10	10	391-010	40.00	5 $\frac{3}{4}$	393-010	100.00	19
15	10	391-015	40.00	5 $\frac{3}{4}$	393-015	100.00	19
20	10	391-020	40.00	5 $\frac{3}{4}$	393-020	100.00	19
25	10	391-025	40.00	5 $\frac{3}{4}$	393-025	100.00	19
30	10	391-030	40.00	5 $\frac{3}{4}$	393-030	100.00	19
35	10	391-035	80.00	14 $\frac{3}{4}$	393-035	160.00	37
40	10	391-040	80.00	14 $\frac{3}{4}$	393-040	160.00	37
45	10	391-045	80.00	14 $\frac{3}{4}$	393-045	160.00	37
50	10	391-050	80.00	14 $\frac{3}{4}$	393-050	160.00	37
60	10	391-060	80.00	14 $\frac{3}{4}$	393-060	160.00	37

### Dimensions

Cap. Amp.	250 Volts			600 Volts		
	Lgth. Over All In.	Diam. Tube In.	Diam. Ferrule In.	Lgth. Over All In.	Diam. Tube In.	Diam. Ferrule In.
3-30	2	1 $\frac{1}{2}$	9 $\frac{1}{16}$	5	3 $\frac{1}{4}$	13 $\frac{1}{16}$
35-60	3	3 $\frac{1}{4}$	18 $\frac{1}{16}$	5 $\frac{1}{2}$	1	1 $\frac{1}{16}$

### Knife Blade Type



Cap. Amp.	Carton	250 Volts			600 Volts		
		Cat. No.	Per 100	Wt., Lbs. Per 100	Cat. No.	Per 100	Wt., Lbs. Per 100
70	5	391-070	\$180.00	46	393-070	\$360.00	83
80	5	391-080	180.00	46	393-080	360.00	83
90	5	391-090	180.00	46	393-090	360.00	83
100	5	391-100	180.00	46	393-100	360.00	83
110	1	391-110	400.00	109	393-110	700.00	183
125	1	391-125	400.00	109	393-125	700.00	183
150	1	391-150	400.00	109	393-150	700.00	183
175	1	391-175	400.00	109	393-175	700.00	183
200	1	391-200	400.00	109	393-200	700.00	183
225	1	391-225	720.00	266	393-225	1400.00	373
250	1	391-250	720.00	266	393-250	1400.00	373
300	1	391-300	720.00	266	393-300	1400.00	373
350	1	391-350	720.00	266	393-350	1400.00	373
400	1	391-400	720.00	266	393-400	1400.00	373
450	1	391-450	1100.00	389	393-450	2000.00	573
500	1	391-500	1100.00	389	393-500	2000.00	573
600	1	391-600	1100.00	389	393-600	2000.00	573

### Dimensions

Cap. Amp.	250 Volts				600 Volts			
	Lgth. Over All In.	Diam. Tube In.	Width Blade In.	Thick. Blade In.	Lgth. Over All In.	Diam. Tube In.	Width Blade In.	Thick. Blade In.
70-100	5 $\frac{7}{8}$	1	3 $\frac{1}{4}$	1 $\frac{1}{8}$	7 $\frac{7}{8}$	1 $\frac{1}{4}$	3 $\frac{1}{4}$	1 $\frac{1}{8}$
110-200	7 $\frac{1}{8}$	1 $\frac{1}{2}$	1 $\frac{1}{8}$	3 $\frac{1}{16}$	9 $\frac{5}{8}$	1 $\frac{3}{4}$	1 $\frac{1}{8}$	3 $\frac{1}{16}$
225-400	8 $\frac{5}{8}$	2	1 $\frac{5}{8}$	1 $\frac{1}{4}$	11 $\frac{5}{8}$	2 $\frac{1}{2}$	1 $\frac{1}{8}$	1 $\frac{1}{4}$
450-600	10 $\frac{3}{8}$	2 $\frac{1}{2}$	2	1 $\frac{1}{4}$	13 $\frac{3}{8}$	3	2	1 $\frac{1}{4}$

## Jefferson Union Renewable Enclosed Fuses

250 and 600 Volts

Listed As Standard by Underwriters' Laboratories

### Ferrule Type

3 to 60 Amperes



The ferrule type fuse is quick and easy to renew. No loose washers, both ends open for inspection and cleaning, and the link bent at one end which automatically adjusts it to the proper length.

Only three simple parts.

Amperes	Carton	250 Volts			600 Volts		
		Cat. No.	Per 100	Wt. Lbs. per 100	Cat. No.	Per 100	Wt. Lbs. per 100
3	10	380-003	\$40.00	5 $\frac{1}{2}$	382-003	\$100.00	18 $\frac{1}{2}$
6	10	380-006	40.00	5 $\frac{1}{2}$	382-006	100.00	18 $\frac{1}{2}$
10	10	380-010	40.00	5 $\frac{1}{2}$	382-010	100.00	18 $\frac{1}{2}$
15	10	380-015	40.00	5 $\frac{1}{2}$	382-015	100.00	18 $\frac{1}{2}$
20	10	380-020	40.00	5 $\frac{1}{2}$	382-020	100.00	18 $\frac{1}{2}$
25	10	380-025	40.00	5 $\frac{1}{2}$	382-025	100.00	18 $\frac{1}{2}$
30	10	380-030	40.00	5 $\frac{1}{2}$	382-030	100.00	18 $\frac{1}{2}$
35	10	380-035	80.00	14 $\frac{1}{4}$	382-035	160.00	35
40	10	380-040	80.00	14 $\frac{1}{4}$	382-040	160.00	35
45	10	380-045	80.00	14 $\frac{1}{4}$	382-045	160.00	35
50	10	380-050	80.00	14 $\frac{1}{4}$	382-050	160.00	35
60	10	380-060	80.00	14 $\frac{1}{4}$	382-060	160.00	35

### Dimensions

Amperes	250 Volts			600 Volts		
	Size Overall Inches	Diam. Ferrule Inches	Size Tube Inches	Size Overall Inches	Diam. Ferrule Inches	Size Tube Inches
1-30	2	9 $\frac{1}{16}$	1 $\frac{1}{2}$	5	13 $\frac{1}{16}$	3 $\frac{1}{4}$
35-60	3	13 $\frac{1}{16}$	3 $\frac{1}{4}$	5 $\frac{1}{2}$	1 $\frac{1}{16}$	1

### Knife Blade Type

70 to 600 Amperes



Jefferson Union Renewable Fuses are assembled in casings of extreme durability, from which all trace of volatilized link metal can be quickly removed and in which all threads are protected from molten metal. The renewability of such a fuse will continue after any number of blows.

In addition to these important advantages Jefferson Union Renewable Fuses can be renewed with exceptional speed. They are made in all standard ratings.

Amperes	Carton	250 Volts			600 Volts		
		Cat. No.	Per 100	Wt. Lbs. per 100	Cat. No.	Per 100	Wt. Lbs. per 100
70	5	380-070	\$180.00	45	382-070	\$360.00	67 $\frac{1}{2}$
80	5	380-080	180.00	45	382-080	360.00	67 $\frac{1}{2}$
90	5	380-090	180.00	45	382-090	360.00	67 $\frac{1}{2}$
100	5	380-100	180.00	45	382-100	360.00	67 $\frac{1}{2}$
110	1	380-110	400.00	110	382-110	700.00	135
125	1	380-125	400.00	110	382-125	700.00	135
150	1	380-150	400.00	110	382-150	700.00	135
175	1	380-175	400.00	110	382-175	700.00	135
200	1	380-200	400.00	110	382-200	700.00	135
225	1	380-225	720.00	212 $\frac{1}{2}$	382-225	1400.00	350
250	1	380-250	720.00	212 $\frac{1}{2}$	382-250	1400.00	350
300	1	380-300	720.00	212 $\frac{1}{2}$	382-300	1400.00	350
350	1	380-350	720.00	212 $\frac{1}{2}$	382-350	1400.00	350
400	1	380-400	720.00	212 $\frac{1}{2}$	382-400	1400.00	350
450	1	380-450	1100.00	337 $\frac{1}{2}$	382-450	2000.00	545
500	1	380-500	1100.00	337 $\frac{1}{2}$	382-500	2000.00	545
600	1	380-600	1100.00	337 $\frac{1}{2}$	382-600	2000.00	545

### Dimensions

Amperes	250 Volts			600 Volts		
	Length Overall Inches	Width Blade Inches	Thickness Blade Inches	Length Overall Inches	Width Blade Inches	Thickness Blade Inches
70-100	5 $\frac{7}{8}$	3 $\frac{1}{4}$	1 $\frac{1}{8}$	7 $\frac{7}{8}$	3 $\frac{1}{4}$	1 $\frac{1}{8}$
110-200	7 $\frac{1}{8}$	1 $\frac{1}{8}$	3 $\frac{1}{16}$	9 $\frac{5}{8}$	1 $\frac{1}{8}$	3 $\frac{1}{16}$
225-400	8 $\frac{5}{8}$	1 $\frac{5}{8}$	1 $\frac{1}{4}$	11 $\frac{5}{8}$	1 $\frac{5}{8}$	1 $\frac{1}{4}$
450-600	10 $\frac{3}{8}$	2	1 $\frac{1}{4}$	13 $\frac{3}{8}$	2	1 $\frac{1}{4}$



## Jefferson Super-Lag Renewable Links



Ferrule Type

Knife Blade Type

## Ferrule Type

Cap. Amp.	Car- ton	250 Volts			600 Volts		
		No.	Per 100	Wt., Lb. per 100	No.	Per 100	Wt., Lb. per 100
3	100	392-003	\$2.00	1/4	394-003	\$5.00	1
6	100	392-006	2.00	1/4	394-006	5.00	1
10	100	392-010	2.00	1/4	394-010	5.00	1
15	100	392-015	2.00	1/4	394-015	5.00	1
20	100	392-020	2.00	1/4	394-020	5.00	1
25	100	392-025	2.00	1/4	394-025	5.00	1
30	100	392-030	2.00	1/4	394-030	5.00	1
35	100	392-035	4.00	1	394-035	8.00	3
40	100	392-040	4.00	1	394-040	8.00	3
45	100	392-045	4.00	1	394-045	8.00	3
50	100	392-050	4.00	1	394-050	8.00	3
60	100	392-060	4.00	1	394-060	8.00	3

## Knife Blade Type

70	50	392-070	\$9.00	2	394-070	\$18.00	5.3
80	50	392-080	9.00	2	394-080	18.00	5.3
90	50	392-090	9.00	2	394-090	18.00	5.3
100	50	392-100	9.00	2	394-100	18.00	5.3
110	25	392-110	20.00	5	394-110	35.00	14.6
125	25	392-125	20.00	5	394-125	35.00	14.6
150	25	392-150	20.00	5	394-150	35.00	14.6
175	25	392-175	20.00	5	394-175	35.00	14.6
200	25	392-200	20.00	5	394-200	35.00	14.6
225	25	392-225	36.00	11	394-225	70.00	29
250	25	392-250	36.00	11	394-250	70.00	29
300	25	392-300	36.00	11	394-300	70.00	29
350	25	392-350	36.00	11	394-350	70.00	29
400	25	392-400	36.00	11	394-400	70.00	29
450	10	392-450	55.00	16	394-450	100.00	37
500	10	392-500	55.00	16	394-500	100.00	37
600	10	392-600	55.00	16	394-600	100.00	37

## Jefferson Union Renewable Fuse Links

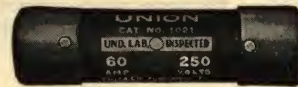
## Ferrule Type



Am- peres	Car- ton	250 Volts			600 Volts		
		Cat. No.	Per 100	Wt., Lbs. per 100	Cat. No.	Per 100	Wt., Lbs. per 100
3	100	381-003	\$2.00	1/4	383-003	\$5.00	5/8
6	100	381-006	2.00	1/4	383-006	5.00	5/8
10	100	381-010	2.00	1/4	383-010	5.00	5/8
15	100	381-015	2.00	1/4	383-015	5.00	5/8
20	100	381-020	2.00	1/4	383-020	5.00	5/8
25	100	381-025	2.00	1/4	383-025	5.00	5/8
30	100	381-030	2.00	1/4	383-030	5.00	5/8
35	100	381-035	4.00	1/2	383-035	8.00	2 3/8
40	100	381-040	4.00	1/2	383-040	8.00	2 3/8
45	100	381-045	4.00	1/2	383-045	8.00	2 3/8
50	100	381-050	4.00	1/2	383-050	8.00	2 3/8
60	100	381-060	4.00	1/2	383-060	8.00	2 3/8

## Knife Blade Type

70	50	381-070	9.00	1 3/8	383-070	18.00	2 5/8
80	50	381-080	9.00	1 3/8	383-080	18.00	2 5/8
90	50	381-090	9.00	1 3/8	383-090	18.00	2 5/8
100	50	381-100	9.00	1 3/8	383-100	18.00	2 5/8
110	25	381-110	20.00	2 3/8	383-110	35.00	7 3/8
125	25	381-125	20.00	2 3/8	383-125	35.00	7 3/8
150	25	381-150	20.00	2 3/8	383-150	35.00	7 3/8
175	25	381-175	20.00	2 3/8	383-175	35.00	7 3/8
200	25	381-200	20.00	2 3/8	383-200	35.00	7 3/8
225	25	381-225	36.00	7	383-225	70.00	18
250	25	381-250	36.00	7	383-250	70.00	18
300	25	381-300	36.00	7	383-300	70.00	18
350	25	381-350	36.00	7	383-350	70.00	18
400	25	381-400	36.00	7	383-400	70.00	18
450	10	381-450	55.00	10	383-450	100.00	26
500	10	381-500	55.00	10	383-500	100.00	26
600	10	381-600	55.00	10	383-600	100.00	26

Union Indicating Non-Renewable  
Enclosed Fuses  
Ferrule Contact Style

Amp.	Car- ton	250 Volts			600 Volts		
		No.	Each	Wt. Lbs. 10 Full Cartons	No.	Each	Wt. Lbs. 10 Full Cartons
3	10	386-003	\$ .15	4	387-003	\$ .50	14 3/4
6	10	386-006	.15	4	387-006	.50	14 3/4
10	10	386-010	.15	4	387-010	.50	14 3/4
15	10	386-015	.15	4	387-015	.50	14 3/4
20	10	386-020	.15	4	387-020	.50	14 3/4
25	10	386-025	.15	4	387-025	.50	14 3/4
30	10	386-030	.15	4	387-030	.50	14 3/4
35	10	386-035	.30	10 1/2	387-035	.80	24 3/4
40	10	386-040	.30	10 1/2	387-040	.80	24 3/4
45	10	386-045	.30	10 1/2	387-045	.80	24 3/4
50	10	386-050	.30	10 1/2	387-050	.80	24 3/4
60	10	386-060	.30	10 1/2	387-060	.80	24 3/4

## Dimensions

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
1-30	2	1/8	5	3/4
35-60	3	3/4	5 1/2	1

## Knife-Blade Contact Style



Amp.	Car- ton	250 Volts			600 Volts		
		No.	Each	Wt. Lbs. 10 Full Cartons	No.	Each	Wt. Lbs. 10 Full Cartons
70	5	386-070	\$ .90	15	387-070	\$1.80	27
80	5	386-080	.90	15	387-080	1.80	27
90	5	386-090	.90	15	387-090	1.80	27
100	5	386-100	.90	15	387-100	1.80	27
110	1	386-110	2.00	7 3/4	387-110	3.50	12 1/2
125	1	386-125	2.00	7 3/4	387-125	3.50	12 1/2
150	1	386-150	2.00	7 3/4	387-150	3.50	12 1/2
175	1	386-175	2.00	7 3/4	387-175	3.50	12 1/2
200	1	386-200	2.00	7 3/4	387-200	3.50	12 1/2
225	1	386-225	3.60	17 1/4	387-225	7.00	29
250	1	386-250	3.60	17 1/4	387-250	7.00	29
300	1	386-300	3.60	17 1/4	387-300	7.00	29
350	1	386-350	3.60	17 1/4	387-350	7.00	29
400	1	386-400	3.60	17 1/4	387-400	7.00	29
450	1	386-450	5.50	28	387-450	10.00	43
500	1	386-500	5.50	28	387-500	10.00	43
600	1	386-600	5.50	28	387-600	10.00	43
* 700	1	386-700	12.00	50 1/2	387-700	15.00	77 1/2
* 800	1	386-800	12.00	50 1/2	387-800	15.00	77 1/2
* 900	1	386-900	15.00	72 1/2	387-900	18.00	92 1/2
* 1000	1	386-999	15.00	72 1/2	387-999	18.00	92 1/2

## Dimensions

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
61-100	5 7/8	1	7 7/8	1 1/4
101-200	7 1/8	1 1/2	9 5/8	1 3/4
201-400	8 5/8	2	11 5/8	2 1/2
401-600	10 3/8	2 1/2	13 3/8	3
601-800	11 1/2	3	14 1/2	3 1/2
801-1000	12 5/8	3 1/2	15 5/8	4

\*The National Electrical Code does not cover any type of 250-volt enclosed fuse above 600 amperes. Fuses of higher capacity are not listed as Standard by the Underwriters' Laboratories but are built to the same strict standards as those so listed.



### Gem Non-Indicating Enclosed Fuses None Renewable Ferrule Style



Amp.	Car- ton	250 Volts			600 Volts		
		No.	Each	Wt., Lb. per 100	No.	Each	Wt., Lb. per 100
1	10	384-001	\$.15	4	385-001	\$.50	14 <sup>3</sup> / <sub>4</sub>
3	10	384-003	.15	4	385-003	.50	14 <sup>3</sup> / <sub>4</sub>
6	10	384-006	.15	4	385-006	.50	14 <sup>3</sup> / <sub>4</sub>
10	10	384-010	.15	4	385-010	.50	14 <sup>3</sup> / <sub>4</sub>
15	10	384-015	.15	4	385-015	.50	14 <sup>3</sup> / <sub>4</sub>
20	10	384-020	.15	4	385-020	.50	14 <sup>3</sup> / <sub>4</sub>
25	10	384-025	.15	4	385-025	.50	14 <sup>3</sup> / <sub>4</sub>
30	10	384-030	.15	4	385-030	.50	14 <sup>3</sup> / <sub>4</sub>
35	10	384-035	.30	10 <sup>1</sup> / <sub>2</sub>	385-035	.80	24 <sup>3</sup> / <sub>4</sub>
40	10	384-040	.30	10 <sup>1</sup> / <sub>2</sub>	385-040	.80	24 <sup>3</sup> / <sub>4</sub>
45	10	384-045	.30	10 <sup>1</sup> / <sub>2</sub>	385-045	.80	24 <sup>3</sup> / <sub>4</sub>
50	10	384-050	.30	10 <sup>1</sup> / <sub>2</sub>	385-050	.80	24 <sup>3</sup> / <sub>4</sub>
60	10	384-060	.30	10 <sup>1</sup> / <sub>2</sub>	385-060	.80	24 <sup>3</sup> / <sub>4</sub>

#### Dimensions

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
1-30	2	1 <sup>1</sup> / <sub>2</sub>	5	3 <sup>1</sup> / <sub>4</sub>
35-60	3	3 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	1

### Knife-Blade Style



Amp.	Car- ton	250 Volts			600 Volts		
		No.	Each	Wt., Lb. per 100	No.	Each	Wt., Lb. per 100
70	5	384-070	\$.90	30	385-070	\$1.80	54
80	5	384-080	.90	30	385-080	1.80	54
90	5	384-090	.90	30	385-090	1.80	54
100	5	384-100	.90	30	385-100	1.80	54
110	1	384-110	2.00	78	385-110	3.50	125
125	1	384-125	2.00	78	385-125	3.50	125
150	1	384-150	2.00	78	385-150	3.50	125
175	1	384-175	2.00	78	385-175	3.50	125
200	1	384-200	2.00	78	385-200	3.50	125
225	1	384-225	3.60	175	385-225	7.00	290
250	1	384-250	3.60	175	385-250	7.00	290
300	1	384-300	3.60	175	385-300	7.00	290
350	1	384-350	3.60	175	385-350	7.00	290
400	1	384-400	3.60	175	385-400	7.00	290
450	1	384-450	5.50	280	385-450	10.00	430
500	1	384-500	5.50	280	385-500	10.00	430
600	1	384-600	5.50	280	385-600	10.00	430
* 700	1	384-700	12.00	505	385-700	15.00	775
* 800	1	384-800	12.00	505	385-800	15.00	775
* 900	1	384-900	15.00	725	385-900	18.00	925
*1000	1	384-999	15.00	725	385-999	18.00	925

#### Dimensions

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
61-100	5 <sup>7</sup> / <sub>8</sub>	1	7 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>
101-200	7 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	9 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>
201-400	8 <sup>5</sup> / <sub>8</sub>	2	11 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>
401-600	10 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	13 <sup>3</sup> / <sub>8</sub>	3
601-800	11 <sup>1</sup> / <sub>2</sub>	3	14 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>
801-1000	12 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	15 <sup>5</sup> / <sub>8</sub>	4

\*The National Electrical Code does not cover any type of 250-volt enclosed fuse above 600 amperes. Fuses of higher capacity are not listed as Standard by the Underwriters' Laboratories but are built to the same strict standards as those so listed.

### Economy Delay Renewable Cartridge Fuses 250 and 600 Volts

Listed by Underwriters' Laboratories, Inc.

Always operate at rated capacities.  
May be used successfully under all conditions of service without filling material of any description.

The delay renewal link is quickly and easily replaced and the restoration of a blown fuse to its original efficiency takes only a few moments.

### Complete Fuses—Ferrule Type—3 to 60 Amperes



Amp.	No.	250 Volts		No.	600 Volts		No. in Ctn.
		Each	Wt. Lb. per Ctn.		Each	Wt. Lb. per Ctn.	
3	F-325	\$.40	5 <sup>5</sup> / <sub>8</sub>	F-305	\$1.00	15 <sup>5</sup> / <sub>8</sub>	10
6	F-625	.40	5 <sup>5</sup> / <sub>8</sub>	F-605	1.00	15 <sup>5</sup> / <sub>8</sub>	10
10	F-1025	.40	5 <sup>5</sup> / <sub>8</sub>	F-1005	1.00	15 <sup>5</sup> / <sub>8</sub>	10
15	F-1525	.40	5 <sup>5</sup> / <sub>8</sub>	F-1505	1.00	15 <sup>5</sup> / <sub>8</sub>	10
20	F-2025	.40	5 <sup>5</sup> / <sub>8</sub>	F-2005	1.00	15 <sup>5</sup> / <sub>8</sub>	10
25	F-2525	.40	5 <sup>5</sup> / <sub>8</sub>	F-2505	1.00	15 <sup>5</sup> / <sub>8</sub>	10
30	F-3025	.40	5 <sup>5</sup> / <sub>8</sub>	F-3005	1.00	15 <sup>5</sup> / <sub>8</sub>	10
35	F-3525	.80	13 <sup>3</sup> / <sub>8</sub>	F-3505	1.60	33 <sup>3</sup> / <sub>8</sub>	10
40	F-4025	.80	13 <sup>3</sup> / <sub>8</sub>	F-4005	1.60	33 <sup>3</sup> / <sub>8</sub>	10
45	F-4525	.80	13 <sup>3</sup> / <sub>8</sub>	F-4505	1.60	33 <sup>3</sup> / <sub>8</sub>	10
50	F-5025	.80	13 <sup>3</sup> / <sub>8</sub>	F-5005	1.60	33 <sup>3</sup> / <sub>8</sub>	10
60	F-6025	.80	13 <sup>3</sup> / <sub>8</sub>	F-6005	1.60	33 <sup>3</sup> / <sub>8</sub>	10

#### Dimensions

Amperes	250 Volts		600 Volts	
	Length Inches	Diameter Inches	Length Inches	Diameter Inches
1-30	2	9 <sup>1</sup> / <sub>16</sub>	5	13 <sup>1</sup> / <sub>16</sub>
35-60	3	13 <sup>1</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>16</sub>

### Complete Fuses—Knife Blade Type—61 to 600 Amperes



Amp.	No.	250 Volts		No.	600 Volts		No. in Ctn.
		Each	Wt. Lb. per Ctn.		Each	Wt. Lb. per Ctn.	
70	F-7025	\$1.80	2	F-7005	\$3.60	33 <sup>3</sup> / <sub>8</sub>	5
80	F-8025	1.80	2	F-8005	3.60	33 <sup>3</sup> / <sub>8</sub>	5
90	F-9025	1.80	2	F-9005	3.60	33 <sup>3</sup> / <sub>8</sub>	5
100	F-10025	1.80	2	F-10005	3.60	33 <sup>3</sup> / <sub>8</sub>	5
110	F-11025	4.00	1 <sup>1</sup> / <sub>16</sub>	F-11005	7.00	13 <sup>1</sup> / <sub>4</sub>	1
125	F-12525	4.00	1 <sup>1</sup> / <sub>16</sub>	F-12505	7.00	13 <sup>1</sup> / <sub>4</sub>	1
150	F-15025	4.00	1 <sup>1</sup> / <sub>16</sub>	F-15005	7.00	13 <sup>1</sup> / <sub>4</sub>	1
175	F-17525	4.00	1 <sup>1</sup> / <sub>16</sub>	F-17505	7.00	13 <sup>1</sup> / <sub>4</sub>	1
200	F-20025	4.00	1 <sup>1</sup> / <sub>16</sub>	F-20005	7.00	13 <sup>1</sup> / <sub>4</sub>	1
225	F-22525	7.20	23 <sup>3</sup> / <sub>16</sub>	F-22505	14.00	31 <sup>1</sup> / <sub>2</sub>	1
250	F-25025	7.20	23 <sup>3</sup> / <sub>16</sub>	F-25005	14.00	31 <sup>1</sup> / <sub>2</sub>	1
300	F-30025	7.20	23 <sup>3</sup> / <sub>16</sub>	F-30005	14.00	31 <sup>1</sup> / <sub>2</sub>	1
350	F-35025	7.20	23 <sup>3</sup> / <sub>16</sub>	F-35005	14.00	31 <sup>1</sup> / <sub>2</sub>	1
400	F-40025	7.20	23 <sup>3</sup> / <sub>16</sub>	F-40005	14.00	31 <sup>1</sup> / <sub>2</sub>	1
450	F-45025	11.00	31 <sup>1</sup> / <sub>2</sub>	F-45005	20.00	51 <sup>1</sup> / <sub>2</sub>	1
500	F-50025	11.00	31 <sup>1</sup> / <sub>2</sub>	F-50005	20.00	51 <sup>1</sup> / <sub>2</sub>	1
600	F-60025	11.00	31 <sup>1</sup> / <sub>2</sub>	F-60005	20.00	51 <sup>1</sup> / <sub>2</sub>	1

#### Dimensions

Amperes	250 Volts		600 Volts	
	Length Inches	Blade Width Inches	Length Inches	Blade Width Inches
61-100	5 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>
110-200	7 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	9 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>
225-400	8 <sup>5</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	11 <sup>5</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>
450-600	10 <sup>3</sup> / <sub>8</sub>	2	13 <sup>3</sup> / <sub>8</sub>	2



## Economy Delay Renewal Links



250 Volts					600 Volts				
Cat. No.	Each	Amp-eres	Car- ton	Wt. Lb.	Cat. No.	Each	Amp-eres	Car- ton	Wt. Lb.
R-203	\$.02	3	100	3/16	R-603	\$.05	3	100	1 1/16
R-206	.02	6	100	3/16	R-606	.05	6	100	1 1/16
R-210	.02	10	100	3/16	R-610	.05	10	100	1 1/16
R-215	.02	15	100	3/16	R-615	.05	15	100	1 1/16
R-220	.02	20	100	3/16	R-620	.05	20	100	1 1/16
R-225	.02	25	100	3/16	R-625	.05	25	100	1 1/16
R-230	.02	30	100	3/16	R-630	.05	30	100	1 1/16
R-235	.04	35	100	5/8	R-635	.08	35	100	2 3/16
R-240	.04	40	100	5/8	R-640	.08	40	100	2 3/16
R-245	.04	45	100	5/8	R-645	.08	45	100	2 3/16
R-250	.04	50	100	5/8	R-650	.08	50	100	2 3/16
R-260	.04	60	100	5/8	R-660	.08	60	100	2 3/16



250 Volts					600 Volts				
Cat. No.	Each	Amp-eres	Car- ton	Wt. Lb.	Cat. No.	Each	Amp-eres	Car- ton	Wt. Lb.
R-270	\$.09	70	50	7 1/8	R-670	\$.18	70	50	1 1/2
R-280	.09	80	50	7 1/8	R-680	.18	80	50	1 1/2
R-290	.09	90	50	7 1/8	R-690	.18	90	50	1 1/2
R-2100	.09	100	50	7 1/8	R-6100	.18	100	50	1 1/2
R-2110	.20	110	25	1	R-6110	.35	110	25	2 3/4
R-2125	.20	125	25	1	R-6125	.35	125	25	2 3/4
R-2150	.20	150	25	1	R-6150	.35	150	25	2 3/4
R-2175	.20	175	25	1	R-6175	.35	175	25	2 3/4
R-2200	.20	200	25	1	R-6200	.35	200	25	2 3/4
R-2225	.36	225	12	1	R-6225	.70	225	12	2 5/8
R-2250	.36	250	12	1	R-6250	.70	250	12	2 5/8
R-2300	.36	300	12	1	R-6300	.70	300	12	2 5/8
R-2350	.36	350	12	1	R-6350	.70	350	12	2 5/8
R-2400	.36	400	12	1	R-6400	.70	400	12	2 5/8
R-2450	.55	450	10	1 1/4	R-6450	1.00	450	10	4 7/8
R-2500	.55	500	10	1 1/4	R-6500	1.00	500	10	4 7/8
R-2600	.55	600	10	1 1/4	R-6600	1.00	600	10	4 7/8

## Ideal Safe-T-Grip Fuse Pullers



Eliminates danger of pulling and replacing cartridge fuses by hand and bending of fuse clips through improper removal. Also adjusts loose cutout clips, handles laboratory test tubes, live electrical parts, etc. Laminated fiber construction. Possesses high di-electric qualities. Withstands exceptional atmospheric conditions of heat and humidity.

## No. 34-001 Midget Size

For handling small fuses, grid leaks, etc., 1/4 to 1/2 inch in diameter. Has 3 laminations, 5 inches long.  
No. 34-001, Weight, 1 Ounce.....each \$ .35

## No. 34-002 Pocket Size

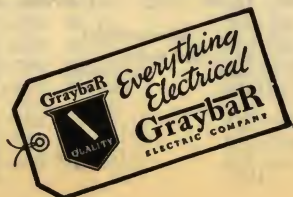
A popular size for general use. For fuses 0 to 200 amperes 250 volts and 1 to 100 amperes, 600 volts. Has 5 laminations 7 1/2 inches long.  
No. 34-002, Weight, 3 Ounces.....each \$1.00

## No. 34-003 Giant Size

For fuses 100 to 600 amperes, 250 volts and 60 to 400 amperes, 600 volts. Has 7 laminations, 12 inches long.  
No. 34-003, Weight, 8 Ounces.....each \$3.00

## No. 34-004 Jumbo Size

A large powerful tool for handling fuses 200 to 800 amperes, 250 volts and 200 to 600 amperes, 600 volts. Has 9 laminations, 20 inches long.  
No. 34-004, Weight, 24 Ounces.....each \$9.00

Eco Non-Indicating Non-Renewable Enclosed Fuses  
250 and 600 Volts

Listed by Underwriters' Laboratories, Inc.

Made of heavy tubing. Caps are all brass, permanently rolled on the tube, not merely crimped. Caps on ferrule type fuses are pierced without distorting out-of-round, and the piercing not only permanently prevents relative movement, but it also provides full clip contact and a means for venting.

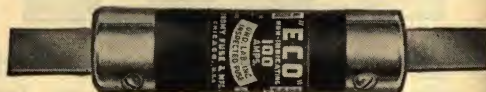
Heavy copper lead-in terminals are used and thereby provide accurate and dependable rating and performance. Unexcelled for uniformity of current-time operation.

## Ferrule Type



Cap. Amps.	250 Volts		600 Volts		No. in Carton
	No.	Each	No.	Each	
1	1101	\$.15	1601	\$.50	10
3	1103	.15	1603	.50	10
6	1106	.15	1606	.50	10
10	1110	.15	1610	.50	10
15	1115	.15	1615	.50	10
20	1120	.15	1620	.50	10
25	1125	.15	1625	.50	10
30	1130	.15	1630	.50	10
35	1135	.30	1635	.80	10
40	1140	.30	1640	.80	10
45	1145	.30	1645	.80	10
50	1150	.30	1650	.80	10
60	1160	.30	1660	.80	10

## Knife Blade Type



Cap. Amps.	250 Volts		600 Volts		No. in Carton
	No.	Each	No.	Each	
70	11070	\$.90	16070	\$1.80	5
80	11080	.90	16080	1.80	5
90	11090	.90	16090	1.80	5
100	11100	.90	16100	1.80	5
110	11110	2.00	16110	3.50	1
125	11125	2.00	16125	3.50	1
150	11150	2.00	16150	3.50	1
175	11175	2.00	16175	3.50	1
200	11200	2.00	16200	3.50	1
225	11225	3.60	16225	7.00	1
250	11250	3.60	16250	7.00	1
300	11300	3.60	16300	7.00	1
350	11350	3.60	16350	7.00	1
400	11400	3.60	16400	7.00	1
450	11450	5.50	16450	10.00	1
500	11500	5.50	16500	10.00	1
600	11600	5.50	16600	10.00	1

## No. 34-005 Ideal Combination Test-Lites and Fuse Pullers



For testing, removing, or inserting fuses from 30 to 100 amperes capacity, testing circuits of from 110 to 550 volts, handling all types of live electrical parts, adjusting loose cut-out clips, etc.

Made of reinforced bakelite. Similar in design to a pair of pliers. Test pins are mounted in handle ends and are adjusted to various spans by opening or closing the handles. Test-lite is enclosed in handle to safeguard against breakage.

Length overall, 7 inches. Weight, 6 ounces.

No. 34-005.....each	\$3.24
No. 34-006, 18-Inch Flexible Leads.....each	.65



## 15 to 30-Ampere Buss Fusetrans

For Circuit Protection on Voltages up to 125



Stops needless blowing of plug fuses. Will not blow when motors start on washing machines, refrigerators and such appliances. Has a long time-lag, because it is a fuse to which a thermal cutout has been added.

Abolishes unsafe practice of using over-size fuse to prevent needless blowing. Gives all the protection a fuse does, holds like a large fuse when safety permits, yet opens like a small fuse when safety demands.

Large clear window facilitates locating of blown Fusetrans. No installation cost; fits regular fuse receptacle. Packed 4 in a box, 100 in a shelf package.

No.	T15	T20	T25	T30
Each	\$.10	.10	.10	.10
Amperes	15	20	25	30

## 15 to 30-Ampere Buss Fustats

Type S Fuses

For Circuit Protection on Voltages up to 125



Permits addition of more appliances to present circuits. Will not blow out when motors start on washing machines, refrigerators, or other appliances. Fits all Edison base fuse holders by use of adapter which locks in place.



Fustat

Adapter

Has a thermal cutout combined with a fuse. Operates like a Fusetrans, but has a non-tamperable base. Resists over-fusing. A 20, 25, or 30-ampere size will not fit in a 15-ampere receptacle or adapter. Similar limitations apply to all other sizes.

Adapters not included with Fustats; order separately and specify size.

Packed 4 in a box; 100 in a shelf package.

Amperes	Fustats		No.	Adapters	
	No.	Each		No.	Each
15	S15	\$.10	SA15	\$.07 1/2	
20	S20	.10	SA20	.07 1/2	
25	S25	.10	SA30	.07 1/2	
30	S30	.10	SA30	.07 1/2	

## 0 to 14-Ampere Buss Fustats

For Motor Apparatus, or Circuit Protection on Voltages up to 125



A fuse to which is added a thermal cutout. Has non-tamperable base to prevent anyone destroying protection. Fits all standard Edison base fuse holders by use of adapter which locks in place.



Fustat

Adapter

Holds starting current and harmless overloads, yet protects motor against burnout from any excessive current, even light overloads if continued. Opens like a fuse on short-circuit.

Instead of fuse, install in the same block or switch, a Fustat having the same, or slightly higher, ampere rating as the motor. It will protect motor against burnout.

Adapters not included with Fustat; order separately, and specify size Fustat for which they are intended.

Packed 4 in a box; 100 in a shelf package.

Amperes	Fustats		No.	Adapter	
	No.	Each		No.	Each
1.	S 1	\$.20	SA 1	\$.07 1/2	
1.25	S 1 1/4	.20	SA 1 1/4	.07 1/2	
1.6	S 1 3/4	.20	SA 1 3/4	.07 1/2	
2.	S 2	.20	SA 2	.07 1/2	
2.5	S 2 1/2	.20	SA 2 1/2	.07 1/2	
3.2	S 3 3/4	.20	SA 3 3/4	.07 1/2	
4.	S 4	.20	SA 4	.07 1/2	
5.	S 5	.20	SA 5	.07 1/2	
6.25	S 6 1/4	.20	SA 6 1/4	.07 1/2	
8.	S 8	.20	SA 8	.07 1/2	
10.	S10	.20	SA10	.07 1/2	
12.	S12	.20	SA15	.07 1/2	
14.	S14	.20	SA15	.07 1/2	

Many other sizes from 3/10 to 9 amperes can be obtained.

Buss Fusetrans  
250 and 600 Volts

1 to 60 Amp.



70 to 600 Amp.

Fits ordinary fuse holders. A fuse and a thermal cutout. Has long time-lag and less electrical resistance.

For all types of circuits or feeders. Long time-lag prevents blowing on starting currents or other harmless overloads, yet they protect against short-circuit with speed of a fuse.

Low resistance lets switches and panelboards operate at a lower temperature. This prevents damage and wipes out needless blowing of fuses. In cases of heating from poor contact or other causes the thermal cutout in the Fusetrans will open to protect panelboard or switch against damage.

On normal installations size about 100 to 125 per cent of ampere rating of motor, installed in disconnect switch or branch circuit panel gives safe and dependable motor-running protection. Motors protected by other thermal devices get double protection. If other devices fail Fusetrans will open to protect against dangerous overload or single phasing. Because Fusetrans can be used in smaller sizes than ordinary fuses, savings on original installations can be made through use of smaller size switches and panelboards.

Carries Underwriters' Laboratories label and is approved for both motor-running and circuit protection.

250 Volts

600 Volts

Type and Amp.	Each	Lgth. In.	Wt. Lb. per 100	Type and Amp.	Each	Lgth. In.	Wt. Lb. in per Car- ton
FRN 1	\$.25	2	3 1/2	FRS 1	\$.65	5	14 10
FRN 1 1/4	.25	2	3 1/2	FRS 1 1/4	.65	5	14 10
FRN 1 3/4	.25	2	3 1/2	FRS 1 3/4	.65	5	14 10
FRN 2	.25	2	3 1/2	FRS 2	.65	5	14 10
FRN 2 1/2	.25	2	3 1/2	FRS 2 1/2	.65	5	14 10
FRN 3 1/2	.25	2	3 1/2	FRS 3 1/2	.65	5	14 10
FRN 4	.25	2	3 1/2	FRS 4	.65	5	14 10
FRN 5	.25	2	3 1/2	FRS 5	.65	5	14 10
FRN 6 1/4	.25	2	3 1/2	FRS 6 1/4	.65	5	14 10
FRN 8	.25	2	3 1/2	FRS 8	.65	5	14 10
FRN 10	.25	2	3 1/2	FRS 10	.65	5	14 10
FRN 12	.25	2	5	FRS 12	.65	5	16 10
FRN 15	.25	2	5	FRS 15	.65	5	16 10
FRN 17 1/2	.25	2	5	FRN 17 1/2	.65	5	16 10
FRN 20	.25	2	5	FRS 20	.65	5	16 10
FRN 25	.30	2	5	FRS 25	.75	5	16 10
FRN 30	.30	2	5	FRS 30	.75	5	16 10
FRN 35	.60	3	12	FRS 35	1.35	5 1/2	26 10
FRN 40	.60	3	12	FRS 40	1.35	5 1/2	26 10
FRN 45	.60	3	12	FRS 45	1.35	5 1/2	26 10
FRN 50	.60	3	12	FRS 50	1.35	5 1/2	26 10
FRN 60	.60	3	12	FRS 60	1.35	5 1/2	26 10
FRN 70	1.45	5 7/8	35	FRS 70	2.75	7 7/8	56 5
FRN 80	1.45	5 7/8	35	FRS 80	2.75	7 7/8	56 5
FRN 90	1.45	5 7/8	35	FRS 90	2.75	7 7/8	56 5
FRN100	1.45	5 7/8	35	FRS100	2.75	7 7/8	56 5
FRN110	3.10	7 1/8	88	FRS110	5.50	9 5/8	125 1
FRN125	3.10	7 1/8	88	FRS125	5.50	9 5/8	125 1
FRN150	3.10	7 1/8	88	FRS150	5.50	9 5/8	125 1
FRN175	3.10	7 1/8	88	FRS175	5.50	9 5/8	125 1
FRN200	3.10	7 1/8	88	FRS200	5.50	9 5/8	125 1
FRN225	5.70	8 5/8	182	FRS225	10.50	11 5/8	305 1
FRN250	5.70	8 5/8	182	FRS250	10.50	11 5/8	305 1
FRN300	5.70	8 5/8	182	FRS300	10.50	11 5/8	305 1
FRN350	5.70	8 5/8	182	FRS350	10.50	11 5/8	305 1
FRN400	5.70	8 5/8	182	FRS400	10.50	11 5/8	305 1
FRN450	8.50	10 3/8	304	FRS450	15.00	13 3/8	480 1
FRN500	8.50	10 3/8	304	FRS500	15.00	13 3/8	480 1
FRN600	8.50	10 3/8	304	FRS600	15.00	13 3/8	480 1

Other standard dimension Fusetrans are available from 1/10 to 9 amp. and midget dimensions from 1/10 to 10 amp.

Return 35 to 60 Ampere Blown Fusetrans and Get Replacements at One-Half Price

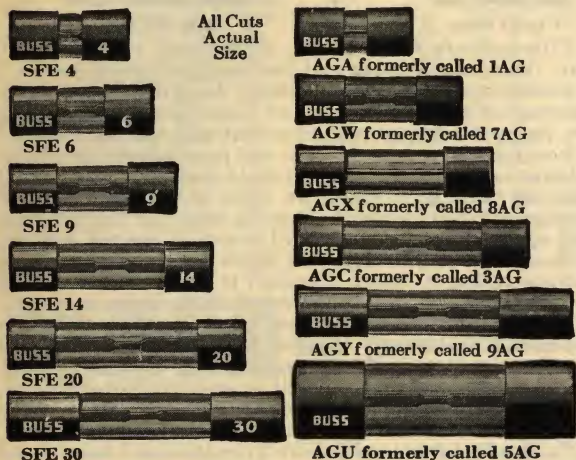
Note on the order the items of blown Fusetrans being returned. If such Fusetrans are in good condition, except for being blown, the replacement Fusetrans, up to an amount equal in list value to those returned, will be billed at one-half price.

This applies only to 35 ampere and larger size.



## Buss Glass Tube Fuses

For Auto, Radio, and Instrument Protection

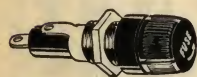


Packed 5 in a slide cover metal box.

Type	Former No.	Amperes	Dimen. In.	Wt., Lb., 100 Each
SFE 4	....	4	$\frac{1}{4} \times \frac{5}{8}$	0.70 \$.05
SFE 6	....	6	$\frac{1}{4} \times \frac{3}{4}$	0.71 .05
SFE 9	....	9	$\frac{1}{4} \times \frac{7}{8}$	0.72 .04
SFE 14	....	14	$\frac{1}{4} \times 1\frac{1}{16}$	0.77 .04
SFE 20	....	20	$\frac{1}{4} \times 1\frac{1}{4}$	0.83 .03 $\frac{1}{2}$
SFE 30	....	30	$\frac{1}{4} \times 1\frac{1}{8}$	1.05 .06
AGA	1AG	2	$\frac{1}{4} \times \frac{5}{8}$	0.70 .07
AGA	1AG	6, 7 $\frac{1}{2}$ or 10	$\frac{1}{4} \times \frac{5}{8}$	0.70 .05
AGC	3AG	1, 1 $\frac{1}{2}$ , 2 or 3	$\frac{1}{4} \times 1\frac{1}{4}$	0.83 .07
AGC	3AG	5, 6, 25 or 30	$\frac{1}{4} \times 1\frac{1}{4}$	0.83 .05
AGC	3AG	10 or 15	$\frac{1}{4} \times 1\frac{1}{4}$	0.83 .04
AGU	5AG	20 or 30	$1\frac{1}{32} \times 1\frac{1}{2}$	2.00 .11
AGW	7AG	6	$\frac{1}{4} \times \frac{7}{8}$	0.71 .05
AGX	8AG	20	$\frac{1}{4} \times 1$	0.82 .05
AGY	9AG	50	$\frac{1}{4} \times 1\frac{1}{16}$	1.10 .12

Type AGC fuses 3 amperes and smaller can be used on 250-volt circuits.

## Buss Fuse Holders



Used for mounting fuses on radios, instruments, electronic equipment, automobiles, or any equipment where ease of changing fuses is particularly desirable. Removable knob of holder changes fuse quickly and simply.

Good contact on fuse caps is assured by strong coil spring pressure.

Protects fuse from dirt and fumes.

Inserted through holes on panel. HJM, HKP, and HCM can be used on panels up to  $\frac{3}{16}$ -inch thick. They are held in place by locking nut on holder.

HPC is attached to panel by screws or rivets through flange on holder, and can be used on panels of any thickness.

Type	Each	For Currents Amperes	For Fuse or Fusetron Inches	Shipping Wt. Lb. per 100
HJM	\$.50	15	$\frac{1}{4} \times 1$	4
HKP	.50	15	$\frac{1}{4} \times 1\frac{1}{4}$	4
HCM	.75	18	$\frac{1}{4} \times 1\frac{1}{4}$ and $\frac{3}{32} \times 1\frac{1}{4}$	5
HPC	1.50	22	$1\frac{1}{32} \times 1\frac{1}{2}$	7

## Buss Special Fuses

Special fuses for every purpose can be furnished.

Submit a sample of the fuse needed if possible, otherwise submit full details as to type, voltage, amperage, etc.

Care must be exercised in ordering fuses as they are made to order and are not returnable.

## Buss Aircraft Fuses

A complete line of Buss aircraft fuses is available.

For detailed information, write for Buss Bulletin AF.

## Buss Fuse Wire and Strip



Buss fuse wire and strips will carry indefinitely current shown under heading capacity and will open the circuit when subjected to current 25 per cent in excess thereof.

This is based on a distance between contacts or terminals of 2 inches.

When used on contacts of other distances, the carrying capacity is affected as shown in table below.

Will Carry More Current			Will Carry Less Current		
Distance Between Contacts Inches	Per Cent Additional		Distance Between Contacts Inches	Per Cent Less	
$\frac{1}{2}$	100		$2\frac{1}{2}$	5	
$\frac{3}{4}$	70		3	10	
1	45		4	15	
$1\frac{1}{4}$	30		5	20	
$1\frac{1}{2}$	15		6	25	

The size of terminal and other local conditions will greatly affect these figures. They are only approximate.

## Fuse Wire

The  $\frac{1}{4}$ -ampere size is furnished on 250-foot spools; sizes  $\frac{1}{2}$  to 3 amperes, on  $\frac{1}{2}$ -pound spools; and 5 to 100-amperes, on 1-pound spools.

Furnished only in full spools.

Size Amp.	Per Spool	Carrying Capacity Amperes	Feet per Pound	Size Amp.	Per Spool	Carrying Capacity Amperes	Feet per Pound
$\frac{1}{4}$	\$2.00	.45	12920	20	\$1.50	27	39
$\frac{1}{2}$	5.00	1.25	2616	25	1.50	33	30
1	2.00	2.2	1020	30	1.50	38	25
2	1.75	4.3	420	40	1.50	49	17.6
3	1.50	6	273	50	1.50	59	14
4	2.25	7.3	213	60	1.50	75	10.5
5	2.25	8	172	70	1.50	85	9
6	2.25	9	148	80	1.50	101	7.3
8	2.25	12	109	90	1.50	125	5.8
10	2.00	14	87	100	1.50	141	5.1
15	2.00	20	57	...	....	...	....

## Fuse Strip

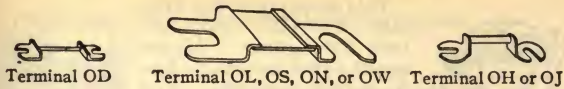
Packed in 5-pound cans. All in one piece. Each strip is marked at the inner end of the coil with the ampere rating. Width of strip, 1 inch.

Furnished only in full cans.

Size Amp.	Per Can	Thick. Inches	Carrying Capacity Amperes	Feet per Lb.	Size Amp.	Per Can	Thick. Inches	Carrying Capacity Amperes	Feet per Lb.
100	\$7.50	.028	125	7.3	300	\$7.50	.092	340	2.2
125	7.50	.035	155	5.8	350	7.50	.110	405	1.9
150	7.50	.043	180	4.7	400	7.50	.128	440	1.6
175	7.50	.051	200	4	500	7.50	.166	545	1.2
200	7.50	.059	225	3.5	600	7.50	.204	625	1
250	7.50	.075	285	2.7	...	....	...	...	...



## Buss Open Link Fuses



Buss open link fuses can be obtained with many other styles of terminals and in larger capacities. When in need of any open link fuses not listed, send sample or complete description.

Unless otherwise specified, standard terminals as listed will be furnished. The terminals listed under heading of Other Terminal, can be obtained if desired without additional cost. Slots are slightly larger than dimensions given so that bolts of such sizes will fit the slot. Terminals are all copper.

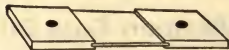
Amperes	*Each	STANDARD TERMINAL		Old No.	Other Terminal
		Type	Slot In. / Width Inches		
1 to 30	\$.04	OD	5/32 3/8	1	OH
35 to 60	.05	OH	3/16 9/16	3	OJ
65 to 100	.08	OJ	1/4 1 1/16	5	OL
110 to 200	.13	OL	3/8 3 3/4	7	OS
225 to 400	.22	OS	7/16 1 1/2	16	ON
450 to 600	.40	ON	1 1/2 1 3/8	10	OS
650 to 1000	.80	OW	5/8 2 1/16	28	ON

When ordering, be sure to specify exact amperage and length desired. By length is meant the center to center dimension of the slots in the terminals. This dimension will be designated by one of the symbols shown below, this symbol immediately following the terminal symbol.

Symbol..... A C D F H J L N R S U X Y Z  
Size.....in. 1 1 1/4 1 1/2 1 3/4 2 2 1/2 3 3 1/2 4 5 6 7 8

\*A set up charge of \$1.50 is made for each size and type fuse ordered on each shipment, in addition to prices shown.

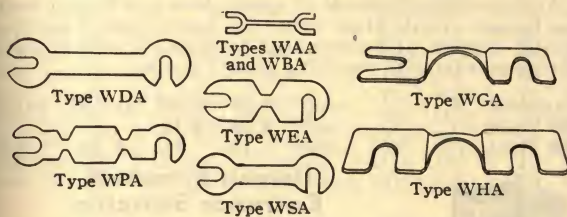
## Large Open Link Fuses



Terminals of cold rolled copper, entirely flat, one edge being slotted to receive the fuse strip.

When ordering specify: ampere range desired; width, length, and thickness of terminals; size of hole desired, center to center dimension of terminal hole. If more than one hole in each terminal is desired, a sketch of the fuse must be submitted in addition to the information above.

## Stamped Open Link Fuses



Types WGA and WHA usually made of copper. All other types are made of zinc.

A set up charge of \$1.50 is made for each size and type fuse ordered on each shipment, in addition to prices shown.

Type	Each	Set-up	Old No.	Center to Center Inches	Max. Width of Terminal Slot Inches	Portion Inches	Usual Amperages
WAA	\$.02	\$1.50	A	1 1/4	3/16	3/8	...
WBA	.02	1.50	B	1 3/8	3/16	15/32	...
WSA	.025	2.50	S	1 3/4	3/8	3/4	20 to 200
WDA	.035	1.50	D	2 1/16 - 2 5/8	1/4	7/8	30 to 200
WPA	.035	1.50	P	2 3/8	3/8	23/32	30 to 200
WGA	.12	2.50	G	2 3/8	7/16	1	35 to 750
WHA	.17	2.50	H	3	9/16	2	500 to 1500
WFA	.035	1.50	66A	1 9/16	3/4	3/4	75 or 125

## Buss Clear Window Plug Fuses



Carries Underwriters' Laboratories inspected label.

Buss fuses have an extra large, clear window and an all white background which makes it easy to see if fuse is blown. Brass cap protects fuse against any chipping of the top. Insulated with porcelain and mica.



Packed 5 in a box. Information printed on box tells what to do when a fuse blows.

Standard package, 100. Weight per 1000, 65 pounds.

No.	AMPERES											
	1	3	5	6	8	10	15	20	25	30		
W1	W3	W5	W6	W8	W10	W15	W20	W25	W30			
Each.....	\$.08	.08	.08	.08	.08	.07	.07	.07	.07	.07		

## Jefferson Plug Fuses



Jefferson Gem Plug Fuses are equipped with clear mica windows making it possible to see at a glance whether or not fuse is blown.

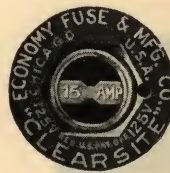
These fuses are listed as standard and bear the Underwriters' label. Packed in display cartons of 5 each and shelf packages of 100 fuses (20 cartons of 5 each).



Carton of 5 Fuses

No.	Each	Cap. Amp.	Carton Quantity	Wt. Lb. per 100
388-103	\$.07	3	100	6 1/4
388-105	.07	5	100	6 1/4
388-106	.07	6	100	6 1/4
388-108	.07	8	100	6 1/4
388-110	.05	10	100	6 1/4
388-115	.05	15	100	6 1/4
388-120	.05	20	100	6 1/4
388-125	.05	25	100	6 1/4
388-130	.05	30	100	6 1/4

## Clearsite Non-Renewable Plug Fuses



The fuse link is mounted under the fuse window thereby giving clear vision of the link. The drop-out type of link is used which lessens the internal operating pressure.

The fuse body is made of heat-resisting molded insulation, black in color.

Regular package consists of 50 plugs to a carton. Retail package consists of 5 plugs to a package, 100 plugs to a carton.

## Standard Sizes

Cap. Amp.	Each	Regular Package No.	Retail Package No.
10	\$.07	4310	5710
15	.07	4315	5715
20	.07	4320	5720
25	.07	4325	5725
30	.07	4330	5730

## Sub-Standard Sizes

Cap. Amp.	Each	Regular Package No.	Retail Package No.
3	\$.07	4303	5703
5	.07	4305	5705
6	.07	4306	5706
8	.07	4308	5708
...	...	...	...

## Economy Renewable Plug Fuses

Fuses packed 10 in a carton; weight, 1 1/4 pounds.

Links packed 100 in a carton; weight, 2 ounces.

## Fuses



Fuse



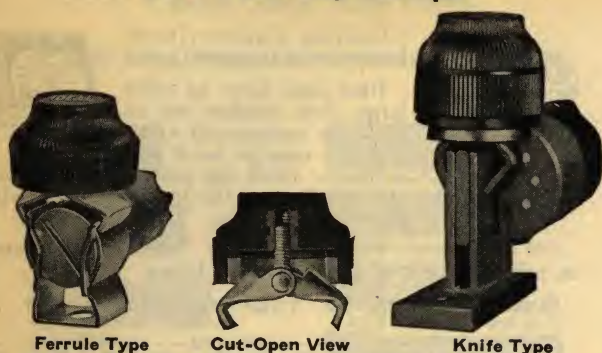
Link

## Drop-Out Renewal Links

Standard Sizes				Sub-Standard Sizes			
No.	Each	Capacity Amperes	No.	No.	Each	Capacity Amperes	No.
PF1068	\$.50	10	PR6810	\$.02	.02	10	
PF1568	.50	15	PR6815	.02	.02	15	
PF2068	.50	20	PR6820	.02	.02	20	
PF2568	.50	25	PR6825	.02	.02	25	
PF3068	.50	30	PR6830	.02	.02	30	
Sub-Standard Sizes							
PF368	\$.50	3	PR6803	\$.02	.02	3	
PF568	.50	5	PR6805	.02	.02	5	
PF668	.50	6	PR6806	.02	.02	6	
PF868	.50	8	PR6808	.02	.02	8	



## Ideal Fuse Clip Clamps



Ferrule Type

Cut-Open View

Knife Type

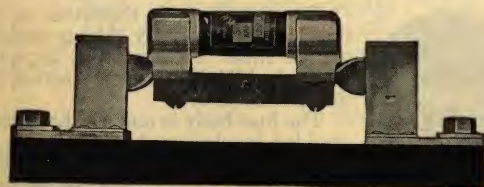
These fuse clip clamps grip all makes of clips.

The knurled grip knob completely insulates the metal parts. The heavy steel clamping ring brings pressure directly around outside of jaws adjacent to ends of clip. This clamping ring rides on a steel washer, reducing friction of turning knob. The steel jaws are strongly reinforced, and the spring holds the jaws in open position.

All metal parts are cadmium plated.

Ferrule Type					
No.	Size	Each	Amperes	Volts	Std. Ctn.
32-001	1	\$ .36	30	250	12
32-002	2	.53	30 60	250 600	12
32-003	4	.75	60	600	6
Knife Blade Type					
32-004	5	\$ .67	100	250	12
32-005	6	1.10	100 200 200	600 250 600	6
32-006	7	1.55	400 400	250 600	6
32-007	8	2.20	600 600	250 600	6

## Ideal Fuse Reducers



Ferrule Type

Ideal Fuse Reducers protect over fused circuits without the expense of a change in switch, panel or switchboard equipment. Fully approved by Underwriters' Laboratories. These reducers can be supplied for both ferrule and knife type standard N. E. C. cartridge fuse holders.

Special reducers are also available for reducing from 600 volts to 250 volts. If a circuit is being changed from 600 volts to 250 volts by means of special adaptors, the same switches, panel boards, cutouts, etc. can be used.

250 Volts				600 Volts			
Amperes	No.	Each		No.	Each		
60-30	FR-263	\$ .64		FR-663	\$ .71		
100-30	FR-213	1.06		FR-613	1.24		
100-60	FR-216	1.06		FR-616	1.24		
200-30	FR-223	1.77		FR-623	2.48		
200-60	FR-226	1.42		FR-626	2.12		
200-100	FR-221	2.48		FR-621	3.18		
400-30	FR-243	4.95		FR-643	5.30		
400-60	FR-246	4.24		FR-646	4.59		
400-100	FR-241	4.24		FR-641	4.95		
400-200	FR-242	5.65		FR-642	6.36		
600-30	FR-2603	4.95		FR-6603	5.65		
600-60	FR-266	4.95		FR-666	5.65		
600-100	FR-261	5.65		FR-661	6.36		
600-200	FR-262	6.36		FR-662	7.06		
600-400	FR-264	7.06		FR-664	7.77		

## Buss Fuse Reducers



60 to 30 Amp.

Packed 1 pair in a carton.

Volts	Amperes	Wt. Lb. per 100	No.	Each
250	60 to 30	16	263	\$ .60
250	100 to 60	34	216	.85
600	60 to 30	16	663	.70
600	100 to 60	39	616	1.40
600	100 to 30	..	Use No. 216	..
250 or 600	200 to 100	30	2621	1.65
250 or 600	400 to 200	55	2642	2.60



200 to 100 Amp.

## Buss Clip-Clamps

These clip-clamps are built for hard service, and insure good contact between clips and fuses or Fusetrons. They make replacement of fuse-clips unnecessary; generally permit even injured clips to be used.

To prevent corrosion, all steel parts are heavily cadmium plated.



No.	Each	Size of Clamp	Carton Quantity	Wt. Lb. per 100
1	\$ .40	0-30 Amp. 250 Volt	12	5
2	.60	{ 31-60 Amp. 250 Volt 0-30 Amp. 600 Volt }	12	8
4	.85	31-60 Amp. 600 Volt	12	12
5	.75	61-100 Amp. 250 or 600 Volt	12	10
6	1.25	101-200 Amp. 250 or 600 Volt	6	21
7	1.75	201-400 Amp. 250 or 600 Volt	6	31
8	2.50	401-600 Amp. 250 or 600 Volt	6	42

## Sherman Fuse Clips



30-60 Amp.



100-200 Amp.

Ferrule types are made of special heat and fatigue resisting bronze. Knife blade types are heavy special tempered spring copper, and especially designed to secure strong spring tension with resulting perfect contact.

Capacity.....amp.	0-30	30-60	61-100	100-200
250 Volts.....each	\$ .08	\$ .16	..	..
600 Volts.....each	.12	.18	\$ .28	\$ .62



No. 4014

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
4014	\$78.00	Fuses at Top.....	10	50	75
4016	78.00	Fuses at Bottom.....	10	50	75

## Relyon Porcelain Entrance Switches

30 Amperes, 125 Volts

Dimensions, 5 1/4 x 3 inches.





## Multi N.E.C. Porcelain Cutout Bases

Listed By Underwriters' Laboratories, Inc.



No. 2503



No. 2506



No. 2512



No. 2515



No. 2517



No. 2521



No. 2525

## 0 to 30 Amperes, 250 Volts, Without Lugs

No.	Each	Description	Length Inches	Width Inches	Std. Ctn.	Std. Pkg.	Wt. Lb. Pkg.
2501	\$33.68	S.P. Main Line.....	3 $\frac{1}{4}$	1 $\frac{1}{2}$	5	50	20
2502	46.32	D.P. Main Line.....	3 $\frac{1}{4}$	2 $\frac{3}{4}$	5	50	35
2503	67.36	T.P. Main Line.....	3 $\frac{1}{4}$	4	5	50	50
2504	58.94	D.P. Single Branch....	4 $\frac{7}{8}$	2 $\frac{3}{4}$	1	10	13
2505	113.68	T.P. Single Branch....	6 $\frac{1}{4}$	4	1	10	28
2506	109.48	D.P. Double Branch...	7 $\frac{3}{8}$	2 $\frac{3}{4}$	1	10	20
2507	189.48	T.P. Double Branch...	8 $\frac{3}{8}$	4	1	10	40
2508	126.32	3-2 Wire Double Branch	9	2 $\frac{3}{4}$	1	10	28

## \*31 to 60 Amperes, 250 Volts, with Lugs

No.	Each	Description	Length Inches	Width Inches	Std. Ctn.	Std. Pkg.	Wt. Lb. Pkg.
2511	\$54.74	S.P. Main Line.....	4 $\frac{1}{16}$	1 $\frac{3}{4}$	2	50	40
2512	117.90	D.P. Main Line.....	4 $\frac{1}{16}$	3 $\frac{1}{4}$	1	10	20
2513	168.42	T.P. Main Line.....	4 $\frac{1}{16}$	4 $\frac{3}{4}$	1	10	30
2514	147.36	D.P. Single Branch....	7 $\frac{1}{8}$	3 $\frac{1}{16}$	1	10	30
2515	252.64	T.P. Single Branch....	8 $\frac{3}{8}$	4 $\frac{1}{16}$	1	10	55
2516	294.74	D.P. Double Branch...	11 $\frac{1}{8}$	3 $\frac{1}{16}$	1	10	50
2517	505.26	T.P. Double Branch...	11 $\frac{1}{2}$	4 $\frac{3}{4}$	1	10	75
2518	353.68	3-2 Wire Double Branch	12 $\frac{1}{4}$	3 $\frac{1}{16}$	1	10	60

## 61 to 100 Amperes, 250 Volts, With Lugs

No.	Each	Description	Length Inches	Width Inches	Std. Ctn.	Std. Pkg.	Wt. Lb. Pkg.
2525	\$117.90	S.P. Main Line.....	7 $\frac{7}{8}$	2	5	10	90
2526	235.78	D.P. Main Line.....	7 $\frac{7}{8}$	3 $\frac{7}{8}$	1	10	40
2527	336.84	T.P. Main Line.....	7 $\frac{7}{8}$	5 $\frac{1}{2}$	1	10	32

## 0 to 60 Amperes, 600 Volts

No.	Each	Description	Lgth. In.	Width In.	Std. Ctn.	Std. Pkg.	Wt. Lb. Pkg.
2520	\$48.00	S.P. without Lugs, 0-30 Amps.	6 $\frac{1}{4}$	1 $\frac{3}{4}$	2	50	22
2521	72.00	S.P. with Lugs, 31-60 Amps..	7 $\frac{1}{16}$	2 $\frac{1}{2}$	2	50	35

\*Pressure lugs furnished when so ordered.

All 3-wire cutouts can be supplied with solid neutral construction, when so ordered, at the same price as above, and carry the same catalog number with the letter S added.

## Multi \*N.E.C. Slate Cutout Bases

Listed by Underwriters' Laboratories, Inc.



100 Amperes



200 Amperes



400-600 Amperes

## 250 Volts, Single Pole

No.	Per 100	Capacity Amperes	Length Inches	Width Inches	Std. Ctn.	Std. Pkg.	Wt. Lb. 10 Ctn.
2202	\$140.00	61-100	8	2	1	10	20
2203	210.00	101-200	9 $\frac{3}{4}$	2 $\frac{1}{4}$	1	10	35
2204	525.00	201-400	11 $\frac{3}{4}$	3	1	10	65
2205	720.00	401-600	14	3 $\frac{1}{2}$	1	10	100

## 600 Volts, Single Pole

No.	Per 100	Capacity Amperes	Length Inches	Width Inches	Std. Ctn.	Std. Pkg.	Wt. Lb. 10 Ctn.
2552	\$147.00	61-100	10 $\frac{1}{4}$	2	1	10	25
2553	230.00	101-200	12 $\frac{1}{4}$	2 $\frac{1}{2}$	1	10	40
2554	600.00	201-400	14 $\frac{7}{8}$	3 $\frac{5}{8}$	1	10	80
2555	780.00	401-600	17	4	1	10	125

\*100 and 200-ampere sizes furnished in approved black molded Rostone.

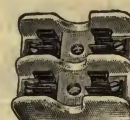
Pressure lugs furnished on 100-ampere sizes.

## Relyon Cartridge Fuse Cutouts

## Main Line—250 Volts



No. 72569



No. 72965



No. 72165

No.	Per 100	Description	Amps.	Dimensions Inches	Car- ton	Std. Pkg.	Wt. Lb. Pkg.
72569	\$32.00	Single Pole.	3-30	3 $\frac{7}{8}$ x2 $\frac{1}{8}$	5	50	35
82569	55.00	Single Pole.	31-60	5 $\frac{1}{16}$ x2 $\frac{3}{16}$	2	50	45
72965	44.00	Double Pole	3-30	3 $\frac{7}{8}$ x3	5	50	50
82965	112.00	Double Pole	31-60	5 x3 $\frac{3}{8}$	1	50	115
72165	64.00	Triple Pole.	3-30	4 $\frac{1}{2}$ x3 $\frac{7}{8}$	5	50	73
82165	160.00	Triple Pole.	31-60	5 $\frac{1}{16}$ x5 $\frac{1}{16}$	1	50	170



No. 71935



No. 78042

No.	Per 100	Description	Amps.	Dimensions Inches	Car- ton	Std. Pkg.	Wt. Lb. Pkg.
71935	\$60.00	Double Pole	3-30	5 x3	1	50	70
81935	140.00	Double Pole	31-60	6 $\frac{1}{16}$ x3 $\frac{3}{8}$	1	50	170
78042	114.00	Triple Pole.	3-30	6 $\frac{1}{16}$ x4 $\frac{1}{2}$	1	50	115
88042	240.00	Triple Pole.	31-60	8 $\frac{1}{4}$ x5 $\frac{1}{16}$	1	50	316

## Double Branch—250 Volts



No. 72587



No. 72135



No. 72199

No.	Per 100	Description	Amps.	Dimensions Inches	Car- ton	Std. Pkg.	Wt. Lb. Pkg.
72587	\$108.00	Double Pole	3-30	7 $\frac{1}{16}$ x3	1	50	115
82587	280.00	Double Pole	31-60	10 $\frac{1}{16}$ x3 $\frac{3}{8}$	1	25	133
72199	132.00	3-2 Pole....	3-30	9 x3	1	25	83
82199	336.00	3-2 Pole....	31-60	11 $\frac{1}{8}$ x3 $\frac{3}{8}$	1	25	158
72135	180.00	Triple Pole.	3-30	9 $\frac{1}{16}$ x4 $\frac{1}{2}$	1	25	108
82135	480.00	Triple Pole.	31-60	11 $\frac{1}{8}$ x5 $\frac{1}{16}$	1	10	100



**Relyon Plug Fuse Cutouts****Solid Neutral****30 Amperes, 125 Volts****No. 29650****Main Line****No. 21650**

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
29650	\$27.00	2-Wire.....	10	150	63
21650	4.700	3-Wire.....	5	50	45

**Single Branch****No. 19350****No. 80420**

19350	\$30.00	2-Wire.....	10	100	64
80420	70.00	3-Wire, or 2-Circuit.....	5	25	29

**Double Branch****No. 25870****No. 21990**

25870	\$53.00	2-Wire.....	5	50	46
21990	58.00	3 to 2-Wire.....	5	50	58
23150	110.00	3-Wire or 4-Circuit.....	5	25	41
23115	44.00	2-Wire or 2-Circuit.....	10	100	70

**Relyon Plug Fuse Cutouts****Fused Neutral****30 Amperes, 125 Volts  
Main Line****No. 2569****No. 2965****No. 2165**

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
2569	\$22.00	Single Pole.....	10	100	42
2965	30.00	2-Wire.....	10	100	60
2165	47.00	3-Wire.....	5	50	46

**Single Branch****No. 1935****No. 8020****No. 8042**

1935	\$34.00	2-Wire.....	5	50	43
8020	38.00	2-Wire, or Double Cross-Over Branch.....	5	50	51
8042	70.00	3-Wire.....	5	50	90

**Double Branch****No. 2587****No. 2199****No. 2135**

2587	\$60.00	2-Wire.....	5	50	64
2199	66.00	3 to 2-Wire.....	5	50	76
2135	98.00	3-Wire.....	5	50	122

**Bryant Hemco Plug Fuse Cutouts****30 Amperes, 125 Volts****Listed as Standard by Underwriters' Laboratories, Inc.****No. H110****No. H220****No. H221**

No.	Per 100	Description	Car-ton	Std. Pkg.	Std. Wt. Lb.
H110	\$38.00	Single Pole, Main Line.....	10	100	38
H220	62.00	2-Pole Main Line.....	10	100	61
H221	70.00	2-Pole Single Branch.....	5	50	46

**No. H224****No. H222****No. H232**

H224	\$74.00	2-Pole Single or Double Crossover Branch.....	5	50	53
H222	100.00	2-Pole Double Branch.....	5	50	67
H232	120.00	Triple to Double-Pole Double Branch.....	5	50	79

**No. H330****No. H331****No. H332**

H330	\$78.00	3-Pole Main Line.....	3	50	50
H331	120.00	3-Pole Single Branch.....	5	50	96
H332	150.00	3-Pole Double Branch.....	5	50	126

**With Solid Neutral****No. H120****No. H121****No. H122****No. H132**

H120	\$60.00	2-Pole Main Line.....	10	150	64
H121	70.00	2-Pole Single Branch.....	10	100	76
H122	110.00	2-Pole Double Branch.....	5	50	51
H132	120.00	Triple to Double-Pole Double Branch.....	5	50	61

**No. H133****No. H134**

H133	\$85.00	3-Pole Main Line.....	5	50	49
H134	180.00	3-Pole Double Branch or 4-Circuit.....	5	25	47

**Bryant Entrance Switches****30 Amperes, 125 Volts****Listed by Underwriters' Laboratories, Inc.****Packed 2 in a carton, 25 in a standard package.****Weight per standard package, 38 pounds.**

No. H1695, Fuses at Top.....	per 100	\$128.00
No. H1981, Fuses at Bottom.....	per 100	128.00

**No. 559 Bryant Neutral Wire Fuseless Plugs****30 Amperes, 125 Volts****Listed as Standard by Underwriters' Laboratories, Inc.**

Can be inserted in neutral fuse receptacle of triple-pole cut-out base and soldered in place. Complies with N.E.C. which requires omission of fuses from grounded side of line except at cut-out base just preceding lamp socket or other translating device.

Packed 75 in carton, 300 in standard package.  
No. 559, Weight per Std. Pkg., 10 Pounds.....per 100 \$9.00



## Bryant Cartridge Fuse Cutout Bases

### Single-Pole

Listed as Standard by Underwriters' Laboratories, Inc.

250 Volts

Barrier Type—Porcelain Base



No. 3929

No.	Per 100	Cap. Amp.	Length In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
3929	\$48.00	1-30	3 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5	50	25
3930	96.00	31-60	5	1 <sup>2</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	2	50	65

Porcelain Base



No. 1929

No.	Per 100	Cap. Amp.	Length In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1929	\$38.00	1-30	3 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>8</sub>	5	50	18
1930	70.00	31-60	4 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>2</sub>	2	50	35
1931	156.00	61-100	7 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>16</sub>	1	50	91
*1932	410.00	101-200	10	2 <sup>1</sup> / <sub>4</sub>	3 <sup>5</sup> / <sub>32</sub>	1	50	137

Slate Base

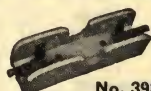


No. 1933

No.	Per 100	Cap. Amp.	Length In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
648	\$121.00	1-30	4 <sup>3</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	1 <sup>7</sup> / <sub>16</sub>	5	50	27
649	143.00	31-60	6	1 <sup>3</sup> / <sub>4</sub>	1 <sup>2</sup> / <sub>32</sub>	2	50	47
1933	236.00	61-100	10	2	2 <sup>3</sup> / <sub>8</sub>	1	50	117
1934	400.00	101-200	10	2 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>32</sub>	1	25	83
1935	890.00	201-400	14 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	1	10	73

600 Volts

Barrier Type—Porcelain Base



No. 3938

No.	Per 100	Cap. Amp.	Length In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
3937	\$70.00	1-30	6 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	1	50	66
3938	150.00	31-60	7 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	1	50	106

Porcelain Base



No. 1938

No.	Per 100	Cap. Amp.	Length In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1937	\$64.00	1-30	7	1 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>2</sub>	1	50	59
1938	96.00	31-60	7 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	2 <sup>7</sup> / <sub>32</sub>	1	50	56
1939	178.00	61-100	12	2	2 <sup>9</sup> / <sub>16</sub>	1	50	115
*1940	303.00	101-200	14 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	3 <sup>5</sup> / <sub>32</sub>	1	50	142

Slate Base



No. 1941

No.	Per 100	Cap. Amp.	Length In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1941	\$253.00	61-100	12	2	2 <sup>1</sup> / <sub>2</sub>	1	50	129
1942	450.00	101-200	14 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>32</sub>	1	25	122
1943	1020.00	201-400	17 <sup>3</sup> / <sub>4</sub>	3	3 <sup>7</sup> / <sub>8</sub>	1	10	108

\*Equipped with clamp terminals.

## Bryant Cartridge Fuse Cut-Out Bases

### Porcelain Base

250 Volts

With connections for one cartridge fuse in each side of the line.

Double-Pole, Main



No. 1917

Cat. No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1917	\$65.00	1-30	3 <sup>5</sup> / <sub>16</sub> x2 <sup>1</sup> / <sub>16</sub>	5	50	45
1918	150.00	31-60	5x3 <sup>5</sup> / <sub>8</sub>	2	50	117

Double-Pole, Single Branch



No. 1919

Cat. No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1919	\$94.00	1-30	4 <sup>1</sup> / <sub>16</sub> x2 <sup>1</sup> / <sub>16</sub>	1	50	72
1920	200.00	31-60	6 <sup>1</sup> / <sub>16</sub> x3 <sup>5</sup> / <sub>8</sub>	1	50	165

Double-Pole, Double Branch



No. 1922

Cat. No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1922	\$200.00	1-30	7 <sup>3</sup> / <sub>4</sub> x2 <sup>1</sup> / <sub>16</sub>	1	25	53
1996	400.00	31-60	10 <sup>5</sup> / <sub>8</sub> x3 <sup>5</sup> / <sub>8</sub>	1	25	117

Triple-Pole, Main



No. 1924

Cat. No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1924	\$90.00	1-30	3 <sup>3</sup> / <sub>16</sub> x4 <sup>1</sup> / <sub>16</sub>	5	50	63
1925	220.00	31-60	5x5 <sup>5</sup> / <sub>16</sub>	1	50	155

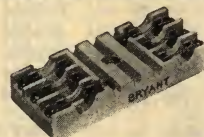
Triple-Pole, Single Branch



No. 1926

Cat. No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1926	\$150.00	1-30	6 <sup>1</sup> / <sub>16</sub> x4 <sup>1</sup> / <sub>16</sub>	1	50	125
1927	360.00	31-60	8 <sup>1</sup> / <sub>16</sub> x5 <sup>5</sup> / <sub>16</sub>	1	50	398

Triple-Pole Double Branch



No. 1928

Cat. No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1928	\$270.00	1-30	8 <sup>7</sup> / <sub>8</sub> x4 <sup>1</sup> / <sub>16</sub>	1	50	198
1998	600.00	31-60	11 <sup>7</sup> / <sub>8</sub> x5 <sup>5</sup> / <sub>16</sub>	1	10	78

Triple to Double-Pole, Double Branch



No. 1923

Cat. No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1923	\$250.00	1-30	8 <sup>7</sup> / <sub>8</sub> x2 <sup>1</sup> / <sub>16</sub>	1	25	75
1997	500.00	31-60	11 <sup>7</sup> / <sub>8</sub> x3 <sup>5</sup> / <sub>8</sub>	1	25	135



## FA Standard Fuse Blocks

For N. E. C. Cartridge Type Fuses

Front Connection—Plain Finish  
On Dead Black Finish Bases

## SINGLE-POLE



## DOUBLE-POLE



## 250 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 331	30	\$1.20
F 631	60	1.80
F 1031	100	2.50
F 2031	200	3.60
A 4031	400	10.10
A 6031	600	15.30
A 8031	800	24.60
A10031	1000	35.80

## 600 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 361	30	\$1.60
F 661	60	2.20
F 1061	100	2.50
F 2061	200	3.80
A 4061	400	10.30
A 6061	600	16.50

## 250 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 332	30	\$1.70
F 632	60	2.80
F 1032	100	3.60
F 2032	200	5.80
A 4032	400	18.60
A 6032	600	28.90
A 8032	800	48.20
A10032	1000	70.70

## 600 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 362	30	\$2.50
F 662	60	3.60
F 1062	100	4.00
F 2062	200	6.60
A 4062	400	19.40
A 6062	600	31.40

## 3-POLE



## 4-POLE



## 250 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 333	30	\$2.20
F 633	60	3.80
F 1033	100	5.20
F 2033	200	8.70
A 4033	400	28.20
A 6033	600	43.90
A 8033	800	71.50
A10033	1000	105.10

## 600 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 363	30	\$3.90
F 663	60	5.50
F 1063	100	6.20
F 2063	200	10.10
A 4063	400	29.40
A 6063	600	46.50

## 250 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 334	30	\$3.70
F 634	60	4.90
F 1034	100	6.90
F 2034	200	12.00
A 4034	400	37.70
A 6034	600	58.20
A 8034	800	94.00
A10034	1000	141.00

## 600 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 364	30	\$4.80
F 664	60	8.70
F 1064	100	9.50
F 2064	200	14.40
A 4064	400	39.60
A 6064	600	63.70

The 30 and 60-ampere fuse blocks have ferrule type clips.

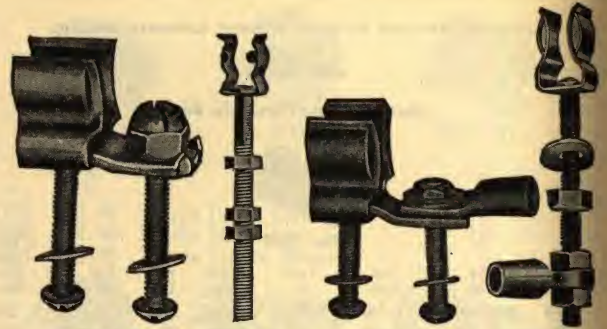
The 100 and 200-ampere fuse blocks have formed clips.

The 400 and 600-ampere fuse blocks have milled in clips.

Fuse blocks over 600 amperes are made with multiple milled parts for each pole.

## FA Fuse Terminals

250 and 600 Volts

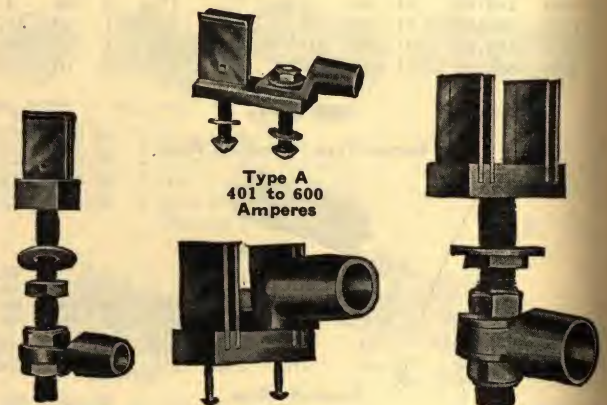
Type F  
3 to 30  
AmperesType B  
3 to 30  
AmperesType F  
31 to 60  
AmperesType B  
31 to 60  
Amperes

## Front Connection

Cat. No.	Ampere Capacity	Volts	Price, Each Plain Finish	Satin Finish
F 33	30	250	\$ .24	\$ .32
F 63	60	250	.38	.48
F 36	30	600	.50	.62
F 66	60	600	.62	.76
F103	100	250 and 600	.68	.84
F203	200	250 and 600	1.12	1.30

## Back Connection

Cat. No.	Ampere Capacity	Volts	Price, Each Plain Finish	Satin Finish
B 33	30	250	\$ .62	\$ .70
B 63	60	250	.95	1.04
B 36	30	600	1.00	1.10
B 66	60	600	1.16	1.26
B103	100	250 and 600	2.08	2.24
B203	200	250 and 600	3.18	3.36

Type A  
401 to 600  
AmperesType B  
601 to 600  
AmperesType A  
601 to 1200  
AmperesType B  
601 to 1200  
Amperes

## Front Connection

Cat. No.	Ampere Capacity	Volts	Price, Each Plain Finish	Satin Finish
A 403	400	250 and 600	\$4.30	\$4.66
A 603	600	250 and 600	6.80	7.30
A 803	800	250 and 600	11.75	12.50
A1003	1200	250 and 600	17.55	18.42

## Back Connection

Cat. No.	Ampere Capacity	Volts	Price, Each Plain Finish	Satin Finish
B 403	400	250 and 600	\$6.54	\$6.80
B 603	600	250 and 600	9.74	10.10
B 803	800	250 and 600	21.72	22.40
B1003	1200	250 and 600	29.64	30.50

Front connection fuse terminals are furnished with short screws, requiring head to be countersunk.

Back connection fuse terminals are furnished with studs long enough for 2-inch slate or marble mounting.

NOTE.—Plain finish will be sent unless otherwise specified.



## Type A Columbia Surface Steel Cabinets

Adapted to nearly all installations where a cabinet for surface mounting is to be used as a junction, service, switch, panel, or cut-out cabinet.

**Construction.** Of sheet steel, required thickness to conform with Underwriters'.

**Finish.** Standard finish is high grade baked-on black Japan. Olive green, aluminum, white enamel, or other special finishes at extra charge.

**Hardware.** Cabinets up to 18 inches in width or height are regularly equipped with flush ring handle and friction catch; over 18 inches wide and not exceeding 24 inches high a turn knob and latch is used. Larger cabinets and all double door cabinets are fitted with vault handle latch. Unless otherwise specified, all boxes are hinged on the long side. Code requirements for double and three-point catches



are provided for in the listing.

**Knockouts.** All sizes, including 12x10 inches have one 3/4-inch knockout in center of each side and balance 1/2-inch knockouts; sizes 12x12 inches and up, one 1 1/4 and one 1-inch knockouts located near center of each side with remaining space filled with 1/2-inch knockouts.

**Galvanized Cabinets** can be furnished at 30% extra charge.

**Boxes without Covers** can be furnished at a deduction of 20% in list prices.

Flange can be supplied on front edges for mounting a wood trim or other cover when specified.

For drilled holes, 1 cent extra for each hole per box; drilled and tapped holes, 2 cents for each hole per box; minimum charge per order, 50 cents.

Width In.	Ht., In.	DEPTH, INCHES					
		3	4	6	8	10	12
*4 1/2	5	\$ .86	\$1.17	.....	.....	.....	.....
*4 1/2	9	1.00	1.32	.....	.....	.....	.....
*6	6	.94	1.08	\$1.88	\$2.05	.....	.....
*6	9	1.15	1.48	2.26	2.54	.....	.....
*6	10	1.32	1.58	2.41	2.70	.....	.....
*6	11	1.41	1.70	2.26	2.98	.....	.....
*6	12	1.50	1.68	2.66	3.06	.....	.....
*6	16	1.80	2.04	3.00	3.78	.....	.....
*6	8	1.05	1.32	2.13	2.36	.....	.....
8	8	1.28	1.53	2.30	2.76	.....	.....
8	10	1.47	1.72	2.55	3.16	\$3.60	.....
8	12	1.72	2.01	2.90	3.55	4.00	\$4.35
8	15	2.01	2.31	3.30	4.10	4.70	5.25
8	18	2.31	2.67	3.60	4.75	5.40	6.00
9	9	1.48	1.89	2.55	3.20	3.75	4.05
9	12	1.83	2.13	3.00	3.80	4.35	4.30
9	15	2.10	2.45	3.50	4.45	5.00	5.60
9	16	2.28	2.52	3.67	4.60	5.25	5.85
9	18	2.43	2.91	3.95	4.95	5.75	6.35
9	20	2.70	3.17	4.25	5.35	6.20	6.85
9	24	3.06	3.55	4.80	6.17	7.20	7.90
9	28	5.45	6.15	7.55	9.35	10.05	11.55
9	32	6.25	6.80	8.40	10.45	11.68	12.86
9	36	6.78	7.60	9.20	11.55	12.90	14.18
10	10	1.78	2.01	2.95	3.60	4.15	4.55
10	12	1.98	2.25	3.25	4.05	4.60	5.25
10	15	2.34	2.61	3.70	4.65	5.35	5.92
10	18	2.67	2.80	4.20	5.30	6.10	6.75
10	20	3.16	3.58	4.65	5.66	6.35	7.05
10	24	3.70	4.15	5.30	6.55	7.30	8.10
10	28	5.98	6.57	8.07	9.94	10.78	12.20
10	32	6.60	7.35	8.97	10.69	12.30	13.60
10	36	7.35	8.12	9.96	12.20	13.60	15.00
12	12	2.45	2.78	3.72	4.40	4.95	5.50
12	16	3.05	3.06	4.45	5.37	6.00	6.62
12	18	3.32	3.30	4.80	5.85	6.50	7.10
12	20	3.56	3.85	5.15	6.30	7.05	7.75
12	24	4.24	4.50	5.88	7.30	8.10	8.90
12	28	6.75	7.44	8.97	11.05	12.20	13.49
12	32	7.53	8.34	9.93	12.30	13.60	14.90
12	36	8.40	9.24	10.95	13.60	15.00	16.40
12	40	9.24	10.07	11.94	14.45	16.40	17.90
16	12	3.05	3.06	4.45	5.38	6.00	6.63
16	15	3.55	3.60	5.10	6.20	6.90	7.62
16	18	4.15	4.15	5.75	7.05	7.80	8.57
16	20	4.53	4.50	6.10	7.65	8.40	9.24
15	24	5.00	5.00	6.80	8.40	9.28	10.15
16	28	8.40	9.18	10.80	13.24	14.48	15.80
16	32	9.45	10.20	12.00	14.73	16.15	17.50
16	36	10.50	11.37	13.17	15.45	17.80	19.22
16	40	10.58	12.48	14.40	17.80	19.40	21.05
18	18	4.60	5.10	6.25	7.65	8.50	9.27
18	20	5.00	5.50	6.70	8.25	9.15	10.00
18	24	8.08	8.88	10.40	12.62	13.95	15.45
18	28	9.24	10.08	11.70	14.30	15.35	17.00
18	32	10.38	11.25	13.00	15.90	17.45	18.88
18	36	11.58	12.45	14.31	17.50	19.20	20.74
18	40	12.75	13.65	15.60	19.20	20.96	22.20
21	21	8.19	9.00	10.50	12.80	14.02	15.68
21	24	9.15	9.96	11.64	13.78	15.50	16.80
21	28	10.50	11.40	13.08	16.00	17.44	18.85
21	32	11.85	12.75	14.73	17.76	19.35	20.86

\*Hinged on width or short side.

Width, In.	Ht., In.	DEPTH, INCHES					
		3	4	6	8	10	12
21	36	\$13.14	\$13.10	\$16.05	\$19.55	\$21.25	\$23.07
21	40	14.49	15.45	17.52	21.38	23.17	24.96
24	24	10.32	11.16	12.84	15.55	17.02	18.50
24	28	11.76	12.69	14.46	17.55	19.14	20.67
24	32	13.26	14.22	16.11	19.46	21.22	22.88
24	36	14.76	15.72	17.76	21.44	23.35	25.12
24	40	16.20	17.22	19.05	23.50	25.40	27.36
24	42	28.30	29.89	33.10	41.45	44.32	47.68
24	48	31.60	34.15	37.81	43.68	45.12	48.75
30	24	16.54	17.44	19.30	22.50	24.15	24.35
30	28	18.28	19.30	21.28	24.96	26.20	28.30
30	32	19.72	21.10	23.26	27.20	27.50	30.88
30	36	34.20	36.10	39.80	43.80	46.50	49.20
30	40	37.90	40.10	43.20	48.60	51.60	54.60
30	44	41.70	44.10	47.40	53.50	56.80	60.10
30	48	45.50	48.10	51.50	58.40	61.90	65.50
30	54	59.90	63.15	69.70	81.10	85.90	90.70
30	60	66.60	70.20	77.50	90.00	95.40	100.50
30	66	71.10	74.80	82.60	96.00	101.80	107.80
30	72	79.90	84.20	92.80	108.00	114.40	120.90
36	36	41.70	44.00	47.30	53.50	57.10	60.10
36	42	56.20	59.30	65.40	76.00	80.60	85.10
36	48	64.00	67.50	74.40	86.50	91.70	96.90
36	54	71.80	75.60	83.40	97.10	102.80	108.70
36	60	79.90	84.30	92.90	108.00	114.40	121.00
36	66	87.85	92.70	102.10	118.75	125.80	133.00
36	72	95.80	101.10	111.30	129.50	137.20	145.00
36	78	103.80	109.50	120.80	140.50	148.80	157.30
36	84	111.70	117.80	129.90	151.00	160.00	169.00
42	42	65.50	69.00	76.20	88.50	93.90	99.20
42	48	74.70	78.80	86.90	101.00	107.10	113.20
42	54	84.00	88.55	97.55	113.50	120.30	127.10
42	60	93.30	98.30	108.20	126.00	133.50	141.00
42	66	102.40	108.00	119.00	138.50	146.80	155.10
42	72	111.70	117.80	129.90	151.00	160.00	169.00
42	78	121.30	127.90	141.00	164.00	174.00	183.80
42	84	130.50	137.50	151.80	176.50	187.00	197.50
42	90	139.80	147.30	162.50	189.00	200.20	211.70
42	96	149.20	157.40	173.50	201.80	213.90	226.00
48	48	85.50	90.10	98.40	115.40	122.30	129.30
48	54	95.80	101.80	111.30	129.40	137.20	145.00
48	60	106.50	112.30	123.80	144.00	152.80	161.20
48	66	117.20	123.50	136.20	158.30	167.80	177.30
48	72	128.00	135.00	148.80	173.00	183.40	193.80
48	78	138.30	145.90	160.80	187.00	198.40	209.60
48	84	149.30	157.40	173.60	201.80	213.70	226.00
48	90	159.50	168.10	186.30	215.50	228.50	241.80
48	96	170.20	179.40	197.80	230.00	243.80	256.80
54	54	107.90	113.80	125.40	146.00	154.70	163.50
54	60	119.80	126.40	139.20	162.00	171.80	181.50
54	66	131.70	138.80	153.00	178.00	183.70	199.40
54	72	143.50	151.20	166.80	194.00	205.70	217.20
54	78	155.40	163.80	180.70	210.00	222.60	235.40
54	84	166.80	175.70	193.50	225.00	238.60	252.10
54	96	188.80	198.90	219.50	255.00	270.20	285.80
60	60	131.40	138.50	152.80	177.50	188.20	198.80
60	66	144.30	152.10	167.80	195.00	206.80	208.20
60	72	159.20	167.80	185.00	215.00	228.00	241.00
60	78	170.80	180.00	198.50	231.20	244.80	258.40
60	84	185.00	195.00	215.00	250.00	265.00	280.00
60	90	198.00	208.50	230.00	258.80	283.80	299.60
60	96	210.80	222.00	245.00	285.00	302.00	319.00



## Type P Columbia Flush Steel Cabinets

**Construction.** Of sheet steel, required thickness to conform with Board of Underwriters'. Removable trim and door. Plain type without ornamental beads; body is formed from one piece of steel with corners folded in and securely welded.

**Finish.** Standard finish is black baked Japan.

**Hardware.** Cabinet is regularly equipped with knob and turn catch. Cabinet with surface area of over 360 square inches is furnished with vault handle.

Cabinet can be supplied with any style hinges, catch or lock.

**Holes for Cutouts, Switches, etc.** Add 1 cent per hole for each box; for tapped holes, 2



cents per hole for each box; minimum charge per order, 50 cents.

**Conduit Drilling.** Cabinet is regularly furnished with standard knockouts: all sizes, including 12x10 inches have one 3/4-inch knockout in center of each side and balance 1/2-inch knockouts; sizes 12x12 inches and up, one 1 1/4 and one 1-inch knockouts located near center of each side with remaining space filled with 1/2-inch knockouts.

For special knockouts, add \$1.00 for each additional size change. Specify if boxes are desired without knockouts.

Approved cabinet will be furnished unless otherwise ordered.

Width In.	Ht. In.	DEPTH, INCHES					Width In.	Ht. In.	DEPTH, INCHES					
		3	4	6	8	10			12	3	4	6	8	10
4 1/2	5	\$3.56	\$3.90	.....	.....	.....	24	24	\$19.00	\$20.25	\$23.05	\$24.40	\$26.25	\$28.22
4 1/2	9	3.69	4.00	\$5.25	.....	.....	24	28	21.70	23.05	25.95	27.60	29.70	32.20
6	6	3.66	3.95	4.60	.....	.....	24	32	24.40	25.80	28.80	30.78	33.15	35.35
6	9	3.88	4.21	5.00	.....	.....	24	36	27.05	28.62	31.68	34.95	36.55	39.85
6	10	3.97	4.30	5.20	\$5.30	\$5.60	24	40	29.80	31.40	34.55	37.20	39.95	42.45
6	11	4.09	4.45	5.30	5.50	5.75	24	42	36.45	38.70	43.65	52.65	56.70	61.20
6	12	4.21	4.54	5.15	6.45	6.57	24	48	43.70	45.00	50.62	61.20	63.45	68.55
6	16	4.69	5.08	6.00	7.00	7.95								
6	8	3.81	4.11	4.85	5.00	5.33	30	24	28.12	24.05	27.44	29.25	31.50	33.75
8	8	4.11	4.41	5.25	5.60	5.96	30	28	26.35	27.80	30.95	32.95	35.25	37.70
8	10	4.38	4.74	5.55	6.10	6.55	30	32	29.65	31.15	34.45	36.65	39.05	41.50
8	12	4.55	4.94	5.75	6.55	7.00	30	36	39.80	42.40	47.05	50.40	53.10	56.70
8	15	4.97	5.27	6.15	7.35	7.89	30	40	43.60	46.20	51.35	53.90	57.60	61.55
8	18	5.39	5.54	7.00	8.25	8.85	30	44	47.80	50.90	55.60	57.40	61.50	65.50
9	9	4.33	4.69	5.50	6.15	6.55	30	48	51.75	54.20	59.80	62.80	66.70	71.30
9	12	4.75	5.11	5.90	6.95	7.45	30	54	68.10	72.90	81.00	93.90	97.20	100.40
9	15	5.20	5.62	6.55	7.90	8.45	30	60	75.60	81.00	90.00	104.40	108.00	111.60
9	16	5.38	5.80	7.00	8.20	8.77	30	66	82.60	86.50	96.10	112.80	115.40	119.10
9	18	5.68	6.20	7.75	8.80	9.40	30	72	92.80	97.20	108.00	125.60	129.50	133.70
9	20	6.10	6.70	8.35	9.40	9.67								
9	24	7.25	8.00	9.10	9.80	11.20	36	36	46.60	48.50	54.70	58.50	62.75	66.60
9	28	10.30	11.16	13.45	14.31	15.79	36	42	65.40	68.40	76.10	88.20	91.20	94.30
9	32	11.38	12.51	14.98	15.84	17.82	36	48	74.30	77.80	86.50	100.40	103.80	107.40
9	36	11.46	13.86	16.51	17.37	19.84	36	54	83.40	87.40	97.00	112.50	116.50	120.40
10	10	4.61	4.97	5.80	6.73	7.35	36	60	92.80	97.20	108.00	125.40	129.50	134.00
10	12	4.94	5.63	6.55	7.37	7.75	36	66	106.10	111.10	123.40	130.80	148.00	153.00
10	15	5.42	5.84	7.10	8.29	9.08	36	72	111.40	116.40	129.60	150.20	155.40	160.60
10	18	6.00	6.55	8.30	9.17	9.36	36	78	120.80	126.40	140.40	162.90	168.50	174.10
10	20	6.75	7.50	8.60	9.25	10.22	36	84	129.80	135.80	151.00	175.20	181.20	187.20
10	24	7.55	8.25	9.40	10.62	11.78								
10	28	10.92	12.02	14.35	15.20	16.72	42	42	73.60	79.00	88.00	102.40	106.00	109.60
10	32	13.32	13.50	16.42	17.10	18.70	42	48	86.90	90.90	100.50	116.00	120.00	124.00
10	36	13.72	15.00	18.48	19.00	20.70	42	54	97.60	102.00	113.50	131.80	136.40	140.80
12	12	5.00	5.75	7.25	7.90	8.50	42	60	108.40	113.50	126.00	146.10	151.20	156.20
12	16	6.35	7.05	8.50	8.85	9.68	42	66	119.00	124.50	138.40	160.80	166.00	171.50
12	18	7.40	7.85	9.25	9.54	10.52	42	72	129.80	135.80	151.00	175.10	181.10	187.10
12	20	7.65	8.45	9.25	10.32	11.42	42	78	141.00	147.50	164.00	190.20	196.80	202.40
12	24	8.60	8.90	10.58	11.48	13.14	42	84	150.50	157.50	175.00	203.00	210.00	217.00
12	28	12.50	13.58	15.98	16.88	18.60	42	90	160.80	168.50	187.00	206.80	224.60	231.80
12	32	14.00	15.15	17.72	19.00	20.70	42	96	171.20	179.10	199.00	231.00	239.00	246.80
12	36	15.48	16.72	19.50	21.10	23.25								
12	40	16.95	18.36	21.24	23.20	25.40	48	48	99.50	104.00	115.60	134.10	138.80	143.20
16	12	6.50	7.30	8.25	8.80	9.68	48	54	110.40	115.40	128.60	149.20	154.40	159.60
16	15	7.50	8.15	9.05	10.08	11.25	48	60	123.80	129.80	142.40	164.80	170.00	175.50
16	18	8.30	8.65	10.16	11.42	12.60	48	66	136.20	141.80	159.00	182.00	189.10	194.10
16	20	8.60	9.36	10.92	12.42	13.58	48	72	146.50	152.50	169.00	195.20	201.80	207.40
15	24	9.50	10.25	12.06	13.62	14.92	48	78	159.20	166.50	185.00	204.80	222.60	229.80
16	28	15.52	16.65	19.27	20.54	22.24	48	84	171.20	179.10	199.00	231.00	239.00	246.80
16	32	17.50	18.70	21.52	22.95	24.92	48	90	184.80	193.30	214.80	249.00	253.80	266.20
16	36	19.48	20.75	23.75	25.38	28.62	48	96	197.10	206.10	229.00	265.80	274.80	284.00
16	40	21.46	22.84	26.00	27.38	30.30								
18	18	8.66	9.40	11.06	12.42	13.68	54	54	125.80	131.80	144.40	166.80	172.00	177.50
18	20	9.36	10.22	11.93	13.42	14.75	54	60	137.50	142.80	160.00	183.00	190.10	195.10
18	24	14.85	16.10	18.68	19.77	21.40	54	66	151.50	158.50	176.00	204.00	211.00	218.00
18	28	17.10	18.36	20.92	22.38	23.12	54	72	165.50	173.50	192.00	211.80	229.60	236.80
18	32	19.35	20.60	23.16	24.88	26.82	54	78	180.00	188.10	208.00	240.00	248.00	255.80
18	36	21.60	22.88	25.42	27.44	29.50	54	84	193.50	202.10	225.00	261.80	270.80	280.00
18	40	23.85	25.16	27.65	30.00	32.20	54	96	221.00	230.50	257.00	298.00	308.00	318.00
18	40	23.85	25.16	27.65	30.00	32.20	60	60	152.50	158.50	175.00	201.20	207.80	214.40
21	21	12.08	13.05	14.85	16.70	18.00	60	66	167.50	175.10	195.00	227.00	235.00	242.80
21	24	17.05	18.22	20.88	22.42	24.21	60	72	184.80	193.30	214.80	249.00	253.80	266.20
21	28	19.48	20.78	23.50	25.02	27.00	60	78	198.50	207.10	231.00	267.80	276.80	286.00
21	32	21.92	23.38	26.10	27.60	29.80	60	84	215.50	224.50	251.00	292.00	302.00	312.00
21	36	24.36	25.95	28.70	30.24	32.55	60	90	230.00	240.80	267.00	310.00	320.80	332.00
21	40	26.76	28.44	31.75	32.85	35.35	60	96	245.00	256.40	285.00	330.80	342.00	353.80



## Square D Standard Fuse Lighting Panelboards

Schedule G

## With 30-Ampere Fusible Only Branches

## Increased Capacity Mains

FOR ALL PANELS HAVING TWO

UNGROUND BUSSES

WITH OR WITHOUT NEUTRAL BAR

FOR ALL PANELS HAVING THREE

UNGROUND BUSSES WITH

OR WITHOUT NEUTRAL BAR

From	To	Lugs Only	Safety Fuse Switching	Circuit Breaker	Lugs Only	Safety Fuse Switching	Circuit Breaker
30A	60A	.....	.....	.....	.....	.....	.....
30A	100A	\$10.00	\$16.00	.....	\$10.00	\$16.00	.....
60A	100A	10.00	16.00	\$25.00	10.00	21.00	\$28.00
60A	200A	10.00	44.00	96.00	10.00	62.00	122.00
100A	200A	10.00	33.00	83.00	10.00	46.00	99.00

## Sub-Feeds—Only One Per Panel

Where sub-feed necessitates mains heavier than standard as listed. Add for increased mains from table above in addition to sub-feed listed below.

FOR ALL SUB-FEEDS HAVING

TWO UNGROUNDED POLES

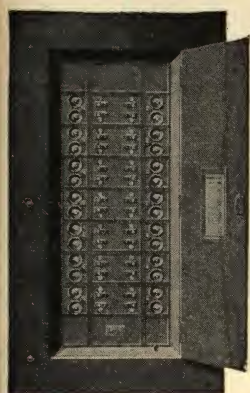
WITH OR WITHOUT NEUTRAL TAP

FOR ALL SUB-FEEDS HAVING

THREE UNGROUNDED POLES

WITH OR WITHOUT NEUTRAL TAP

Capacity of Sub-Feed	Lugs Only	Safety Fuse Switching	Circuit Breaker	Lugs Only	Safety Fuse Switching	Circuit Breaker
30A	\$6.00	\$15.00	\$15.00	\$6.00	\$15.00	\$23.00
60A	6.00	15.00	15.00	6.00	22.00	23.00
100A	6.00	24.00	33.00	6.00	36.00	44.00
200A	6.00	55.00	118.00	6.00	83.00	141.00



No. NT1P-3L Fusible Lighting

## Types NT1P-3 (Plug) and NT1C-3 (Cartridge)

MAINS. 3-Wire S/N 125-250 Volts.

CABINET. Single Door; 20 In. Wide and 5 1/4 In. Deep. Finish: Front Academy Brown; Box, Galvanized Steel.

No. Branches	Amp. Mains	Mains: Lugs Only				Mains: Safety Fuse—Switching			
		With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.
4	30	NT1P04-3L	NT1C04-3L	\$48.00	MH14	NT1P04-3F	NT1C04-3F	\$59.00	MH17
8	60	NT1P08-3L	NT1C08-3L	60.00	MH14	NT1P08-3F	NT1C08-3F	71.00	MH20
12	60	NT1P12-3L	NT1C12-3L	72.00	MH17	NT1P12-3F	NT1C12-3F	83.00	MH23
16	100	NT1P16-3L	NT1C16-3L	84.00	MH26	NT1P16-3F	NT1C16-3F	106.00	MH32
20	100	NT1P20-3L	NT1C20-3L	96.00	MH29	NT1P20-3F	NT1C20-3F	118.00	MH35
24	200	NT1P24-3L	NT1C24-3L	108.00	MH32	NT1P24-3F	NT1C24-3F	158.00	MH47
28	200	NT1P28-3L	NT1C28-3L	120.00	MH35	NT1P28-3F	NT1C28-3F	170.00	MH50
32	200	NT1P32-3L	NT1C32-3L	132.00	MH38	NT1P32-3F	NT1C32-3F	182.00	MH53
36	200	NT1P36-3L	NT1C36-3L	144.00	MH41	NT1P36-3F	NT1C36-3F	194.00	MH56
40	200	NT1P40-3L	NT1C40-3L	156.00	MH44	NT1P40-3F	NT1C40-3F	206.00	MH59

## Types NT1P-4 (Plug) and NT1C-4 (Cartridge)

MAINS. 4-Wire S/N 120-208 Volts.

CABINET. Single Door; 20 In. Wide and 5 1/4 In. Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.

No. Branches	Amp. Mains	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.
8	60	NT1P08-4L	NT1C08-4L	\$65.00	MH14	NT1P08-4F	NT1C08-4F	\$82.00	MH20
12	60	NT1P12-4L	NT1C12-4L	77.00	MH17	NT1P12-4F	NT1C12-4F	94.00	MH23
16	60	NT1P16-4L	NT1C16-4L	89.00	MH23	NT1P16-4F	NT1C16-4F	106.00	MH29
20	100	NT1P20-4L	NT1C20-4L	101.00	MH29	NT1P20-4F	NT1C20-4F	134.00	MH35
24	100	NT1P24-4L	NT1C24-4L	113.00	MH32	NT1P24-4F	NT1C24-4F	146.00	MH38
28	100	NT1P28-4L	NT1C28-4L	125.00	MH35	NT1P28-4F	NT1C28-4F	158.00	MH41
32	200	NT1P32-4L	NT1C32-4L	137.00	MH38	NT1P32-4F	NT1C32-4F	211.00	MH53
36	200	NT1P36-4L	NT1C36-4L	149.00	MH41	NT1P36-4F	NT1C36-4F	223.00	MH56
40	200	NT1P40-4L	NT1C40-4L	161.00	MH44	NT1P40-4F	NT1C40-4F	235.00	MH59

## Types NT1P-3D (Plug) and NT1C-3D (Cartridge)

MAINS. 3-Wire S/N 125-250 Volts.

CABINET. Door-in-Door; 20 In. Wide and 5 1/4 In. Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.

No. Branches	Amp. Mains	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.
4	30	NT1P04-3LD	NT1C04-3LD	\$64.00	MH17	NT1P04-3FD	NT1C04-3FD	\$75.00	MH20
8	60	NT1P08-3LD	NT1C08-3LD	76.00	MH20	NT1P08-3FD	NT1C08-3FD	87.00	MH23
12	60	NT1P12-3LD	NT1C12-3LD	88.00	MH23	NT1P12-3FD	NT1C12-3FD	99.00	MH26
16	100	NT1P16-3LD	NT1C16-3LD	100.00	MH26	NT1P16-3FD	NT1C16-3FD	122.00	MH32
20	100	NT1P20-3LD	NT1C20-3LD	112.00	MH29	NT1P20-3FD	NT1C20-3FD	134.00	MH35
24	200	NT1P24-3LD	NT1C24-3LD	124.00	MH32	NT1P24-3FD	NT1C24-3FD	174.00	MH47
28	200	NT1P28-3LD	NT1C28-3LD	136.00	MH35	NT1P28-3FD	NT1C28-3FD	186.00	MH50
32	200	NT1P32-3LD	NT1C32-3LD	148.00	MH38	NT1P32-3FD	NT1C32-3FD	198.00	MH53
36	200	NT1P36-3LD	NT1C36-3LD	160.00	MH41	NT1P36-3FD	NT1C36-3FD	210.00	MH56
40	200	NT1P40-3LD	NT1C40-3LD	172.00	MH44	NT1P40-3FD	NT1C40-3FD	222.00	MH59

## Types NT1P-4D (Plug) and NT1C-4D (Cartridge)

MAINS. 4-Wire S/N 120-208 Volts.

CABINET. Door-in-Door; 20 In. Wide and 5 1/4 In. Deep. Finish: Front Academy Brown; Box, Galvanized Steel.

No. Branches	Amp. Mains	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.
8	60	NT1P08-4LD	NT1C08-4LD	\$81.00	MH20	NT1P08-4FD	NT1C08-4FD	\$98.00	MH23
12	60	NT1P12-4LD	NT1C12-4LD	93.00	MH23	NT1P12-4FD	NT1C12-4FD	110.00	MH26
16	60	NT1P16-4LD	NT1C16-4LD	105.00	MH26	NT1P16-4FD	NT1C16-4FD	122.00	MH29
20	100	NT1P20-4LD	NT1C20-4LD	117.00	MH29	NT1P20-4FD	NT1C20-4FD	150.00	MH35
24	100	NT1P24-4LD	NT1C24-4LD	129.00	MH32	NT1P24-4FD	NT1C24-4FD	162.00	MH38
28	100	NT1P28-4LD	NT1C28-4LD	141.00	MH35	NT1P28-4FD	NT1C28-4FD	174.00	MH41
32	200	NT1P32-4LD	NT1C32-4LD	153.00	MH38	NT1P32-4FD	NT1C32-4FD	227.00	MH53
36	200	NT1P36-4LD	NT1C36-4LD	165.00	MH41	NT1P36-4FD	NT1C36-4FD	239.00	MH56
40	200	NT1P40-4LD	NT1C40-4LD	177.00	MH44	NT1P40-4FD	NT1C40-4FD	251.00	MH59

\*Last two figures of box number indicate box height.

For panel with 1 and 2-pole branches, convert to total number of 1-pole branches and obtain price of corresponding panel, then add \$1.00 for each 2 pole substituted for two 1-pole branches.

When ordering, specify number, number of single and/or double pole branches, ampere rating of mains, flush or surface mounting and price.



## Square D Multi-Breaker Type MB Load Centers

For Use on A.C. Systems Only  
With Individual Trip

### Schedule B1

**MAINS:** Insulated (Groundable) Neutral—Underwriters' Approved As a Panelboard for Use As a Load Center beyond the Service Equipment, or from One to Six Circuits As Service Equipment Where Required by Local Rules.

**BRANCHES:** Lighting Circuits—2-Wire S/N 115 Volts A.C. Single Pole Breaker (Form MB) and Neutral.  
Range, Water Heater and Subfeed Circuits—3-Wire S/N 115/230 Volts A.C. Double Pole Breaker (Individual Trip) and Neutral.

Specify 15, 20, 25, 35 or 50-ampere one-pole branch circuits desired for each number ordered.

For flush devices, add F to number. For surface devices, add S to number.

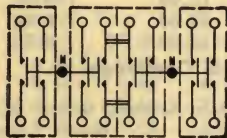
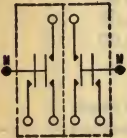


No. 35041F



No. 57160S

### 3-Wire S/N 115-230 Volts A.C.

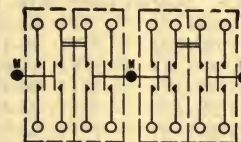


No.	Each	No. OF MAIN OR BRANCH CIRCUITS 1-Pole Breakers	2-Pole Breakers	Box No.	Solid Mains Rating Amps. (Max.)
35020	\$10.00	2	0	3	70
35030	12.00	3	0	3	70
35040	12.00	4	0	3	70
35050	13.00	5	0	3	70
35060	14.00	6	0	3	70
35070	15.00	7	0	3	70
35080	17.00	8	0	3	70
35001	10.00	0	1	3	70
35011	12.00	1	1	3	70
35021	12.00	2	1	3	70
35031	13.00	3	1	3	70
35041	14.00	4	1	3	70
35051	15.00	5	1	3	70
35061	17.00	6	1	3	70
35002	12.00	0	2	3	70
35012	14.00	1	2	3	70
35022	15.00	2	2	3	70
35032	16.00	3	2	3	70
35042	17.00	4	2	3	70
*35003	15.00	0	3	3	70
*35013	16.00	1	3	3	70
*35023	17.00	2	3	3	70
*35004	18.00	0	4	3	70
57090	34.00	9	0	5	100
57100	35.00	10	0	5	100
57110	37.00	11	0	5	100
57120	38.00	12	0	5	100
57130	40.00	13	0	5	100
57140	42.00	14	0	5	100
57150	43.00	15	0	5	100
57160	44.00	16	0	5	100
57071	34.00	7	1	5	100
57081	35.00	8	1	5	100
57091	37.00	9	1	5	100
57101	38.00	10	1	5	100
57111	40.00	11	1	5	100
57121	42.00	12	1	5	100
57131	43.00	13	1	5	100
57141	44.00	14	1	5	100

### 3-Wire S/N 115-230 Volts A.C.—Continued

No.	Each	No. OF MAIN OR BRANCH CIRCUITS 1-Pole Breakers	2-Pole Breakers	Box No.	Solid Mains Rating Amps. (Max.)
57052	\$34.00	5	2	5	100
57062	35.00	6	2	5	100
57072	37.00	7	2	5	100
57082	38.00	8	2	5	100
57092	40.00	9	2	5	100
57102	42.00	10	2	5	100
57112	43.00	11	2	5	100
57122	44.00	12	2	5	100
57033	34.00	3	3	5	100
57043	35.00	4	3	5	100
57053	37.00	5	3	5	100
57063	38.00	6	3	5	100
57073	40.00	7	3	5	100
57083	42.00	8	3	5	100
57093	43.00	9	3	5	100
57103	44.00	10	3	5	100
57014	34.00	1	4	5	100
57024	35.00	2	4	5	100
57034	37.00	3	4	5	100
57044	38.00	4	4	5	100
57054	40.00	5	4	5	100
57064	42.00	6	4	5	100
57074	43.00	7	4	5	100
57084	44.00	8	4	5	100
*57005	36.00	0	5	5	100
*57015	37.00	1	5	5	100
*57025	38.00	2	5	5	100
*57035	41.00	3	5	5	100
*57045	42.00	4	5	5	100
*57055	43.00	5	5	5	100
*57065	44.00	6	5	5	100
*57006	38.00	0	6	5	100
*57016	41.00	1	6	5	100
*57026	42.00	2	6	5	100
*57036	43.00	3	6	5	100
*57046	45.00	4	6	5	100
*57007	42.00	0	7	5	100
*57017	43.00	1	7	5	100
*57027	45.00	2	7	5	100
*57008	45.00	0	8	5	100

### 4-Wire 3-Phase S/N 120-208 Volts A.C.



No.	Each	No. OF MAIN OR BRANCH CIRCUITS 1-Pole Breakers	2-Pole Breakers	Box No.	Solid Mains Rating Amps. (Max.)
56090	\$37.00	9	0	5	70
56100	38.00	10	0	5	70
56120	40.00	12	0	5	70
56140	44.00	14	0	5	70
56160	47.00	16	0	5	70

\*Where more than 2 double poles in box 3 devices or more than 4 double poles in box 5 devices are shown, this is accomplished by use of handle bails, coupling outside single poles.



## Type M Square D Multi-Breaker Load Centers

For Use on A.C. Systems Only

Types MO, MO4, and M, 1 and 2 Pole Breakers—Individual Trip

Type M1, 2 or 3 Pole Breakers—Common Trip

Type M2, 2 or 3 Pole Breakers—Common Trip

Schedule B1

**MAINS.** Insulated (Groundable) Solid Neutral—Underwriters' Approved for Use as a Load Center beyond the Service Equipment or As Service Equipment Where Required by Local Rules. No Neutral—Underwriters' Approved as Enclosed Circuit Breaker but Suitable for Use As Service Equipment.

**BRANCHES.** Lighting Circuits—2-Wire Solid Neutral 115 Volts A.C. Single Pole Breakers and Neutral. Range, Water Heater and Subfeed Circuits—3-Wire Solid Neutral 115/250 Volts A.C. Double Pole Breakers and Neutral. 4-Wire Solid Neutral 115/230 Volts A.C. 3 Pole Breakers and Neutral.

Specify branch circuit ratings and type of mounting.

For flush devices, add F to number. For surface devices, add S to number.



No. 111611S

## 2-Wire, Solid Neutral, 120 Volts A.C.

Type Breaker	Frame Size No.	No. of Main or Branch Circuits			Solid Mains Rating Amps. (Max.)	Insulated (Groundable) Solid Neutral			No Neutral		
		1-Pole Breakers	2-Pole Breakers	3-Pole Breakers		No.	Each	Box No.	No.	Each	Box No.
M0	25A	1-15A	0	0	*35	131110	\$3.00	13	.....	.....	..
		1-20A	0	0	*35	131120	3.00	13	.....	.....	..
		1-25A	0	0	*35	131130	3.00	13	.....	.....	..
		2-15A	0	0	*35	131711	4.50	13	.....	.....	..
		2-20A	0	0	*35	131722	4.50	13	.....	.....	..
		2-25A	0	0	*35	131733	4.50	13	.....	.....	..
†M	50A	1-15A, 1-20A	0	0	*35	131712	4.50	13	.....	.....	..
		1-15A	0	0	50	16501	6.50	23	.....	.....	..
		1-20A	0	0	50	16502	6.50	23	.....	.....	..
		1-25A	0	0	50	16503	6.50	23	.....	.....	..
		1-35A	0	0	50	16504	6.50	23	.....	.....	..
		1-50A	0	0	50	16505	6.50	23	.....	.....	..
		2-15A	0	0	70	16611	8.00	23	.....	.....	..
		2-20A	0	0	70	16622	8.00	23	.....	.....	..
		2-25A	0	0	70	16633	8.00	23	.....	.....	..
		2-35A	0	0	70	16644	8.00	23	.....	.....	..
		2-50A	0	0	70	16655	8.00	23	.....	.....	..
		1-15A, 1-20A	0	0	70	16612	8.00	23	.....	.....	..

## 3-Wire, Solid Neutral, 120/240 Volts A.C.

(2 Pole 120/240 Volts A.C.)—"A"

M0	25A	0	1-15A	0	*35	131611	\$4.50	13	111611	\$4.00	11
		0	1-20A	0	*35	131622	4.50	13	111622	4.00	11
		0	1-25A	0	*35	131633	4.50	13	111633	4.00	11
		2-15A	0	0	*35	131711	4.50	13	.....	.....	..
		2-20A	0	0	*35	131722	4.50	13	.....	.....	..
		2-25A	0	0	*35	131733	4.50	13	.....	.....	..
†M	50A	1-15A, 1-20A	0	0	*35	131712	4.50	13	.....	.....	..

## 3-Wire, Solid Neutral, 120/240 Volts A.C.—"D"

M04	..	4-15A	0	0	50	181111	\$11.00	18	.....	.....	..
		4-20A	0	0	50	182222	11.00	18	.....	.....	..
		4-30A	0	0	50	183333	11.00	18	.....	.....	..
		3-15A, 1-20A	0	0	50	181112	11.00	18	.....	.....	..
		2-15A, 2-20A	0	0	50	182211	11.00	18	.....	.....	..
		2-15A, 2-30A	0	0	50	183311	11.00	18	.....	.....	..
†M	50A	1-15A, 1-20A, 2-30A	0	0	50	183312	11.00	18	.....	.....	..
		0	1-10A	0	50	16766	8.50	23	16966	\$8.00	21
		0	1-15A	0	50	16711	8.50	23	16911	8.00	21
		0	1-20A	0	50	16722	8.50	23	16922	8.00	21
		0	1-25A	0	50	16733	8.50	23	16933	8.00	21
		0	1-35A	0	50	16744	8.50	23	16944	8.00	21
		0	1-50A	0	50	16755	8.50	23	16955	8.00	21
		2-15A	0	0	70	16611	8.00	23	.....	.....	..
		2-20A	0	0	70	16622	8.00	23	.....	.....	..
		2-25A	0	0	70	16633	8.00	23	.....	.....	..
		2-35A	0	0	70	16644	8.00	23	.....	.....	..
		2-50A	0	0	70	16655	8.00	23	.....	.....	..
		1-15A, 1-20A	0	0	70	16612	8.00	23	.....	.....	..
		3	0	0	70	35530	11.00	3	.....	.....	..
M1	50A	4	0	0	70	35540	12.00	3	.....	.....	..
		1	1	0	70	35511	11.00	3	.....	.....	..
		2	1	0	70	35521	13.00	3	.....	.....	..
		0	2	0	70	35502	13.00	3	.....	.....	..
		5	0	0	**3-50	95550	18.00	9	.....	.....	..
		6	0	0	**3-50	95560	19.00	9	.....	.....	..
		3	1	0	**3-50	95531	19.00	9	.....	.....	..
		4	1	0	**3-50	95541	20.00	9	.....	.....	..
		1	2	0	**3-50	95512	19.00	9	.....	.....	..
		2	2	0	**3-50	95522	20.00	9	.....	.....	..
		0	3	0	**3-50	95503	21.00	9	.....	.....	..
		.....	.....	.....	.....	.....	.....	.....	2 Pole 240 Volts A.C.)—"B"	.....	..
		.....	.....	.....	.....	.....	.....	.....	212215	\$13.00	21
		.....	.....	.....	.....	.....	.....	.....	212220	13.00	21
		.....	.....	.....	.....	.....	.....	.....	212225	13.00	21
		.....	.....	.....	.....	.....	.....	.....	212235	13.00	21
		.....	.....	.....	.....	.....	.....	.....	212250	13.00	21
†M2	100A	0	4	0	225	79504	\$4.00	7	.....	.....	..
		0	5	0	225	79505	58.00	7	.....	.....	..
		0	6	0	225	79506	63.00	7	.....	.....	..
		0	1-50A	0	100	333250	21.00	33	313250	19.00	31
		0	1-70A	0	100	333270	19.00	33	313270	19.00	31
		0	1-90A	0	100	333290	19.00	33	313290	19.00	31
M1	50A	0	1-100A	0	100	333216	21.00	33	313216	19.00	31

## 4-Wire, 3-Phase, Solid Neutral 240 Volts A.C.

(3 Pole 240 Volts A.C.)—"C"

M1	50A	0	0	1-15A	50	282315	\$24.00	28	262315	\$23.00	26
		0	0	1-20A	50	282320	24.00	28	262320	23.00	26
		0	0	1-25A	50	282325	24.00	28	262325	23.00	26
		0	0	1-35A	50	282335	24.00	28	262335	23.00	26
		0	0	1-50A	50	282350	24.00	28	262350	23.00	26
		0	0	1-50A	100	333350	\$38.00	33	313350	36.00	31
†M2	100A	0	0	1-70A	100	333370	\$38.00	33	313370	36.00	31
		0	0	1-90A	100	333390	\$38.00	33	313390	36.00	31
		0	0	1-100A	100	333316	\$38.00	33	313316	36.00	31

\*No. 8 wire terminals.

†Where ampere ratings are not shown on M50A frame breakers, any capacity from 15 to 50 amperes can be furnished.

†Prices shown are for surface mounting. For flush mounting add \$2.50 on Form M2.

\*\*Can also be furnished with 100-ampere bussed mains.



## Square D Multi-Breaker Lighting Panelboards—3 or 4 Wire Mains

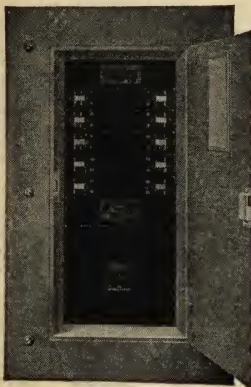
Schedule B-2



Type NM1B-3 panels may contain a maximum of 18 double-pole circuits. No. NM1B panels may have more than 4 poles of 35 or 50-ampere capacity (a maximum of 2 double poles or 4 single poles of 35 or 50 amperes). For panelboards having more than 35 or 50-ampere poles, refer to Type NM1-3 panels listed below.



May contain all 1-pole circuits, all 2-pole circuits (not exceeding 20 per panel) or any combination of 1 and 2-pole circuits (not exceeding 42 poles per panel).



May contain all 1-pole circuits, all 2-pole circuits (not exceeding 20 per panel) or any combination of 1 and 2-pole circuits (not exceeding 42 poles per panel).

## Type NM1B-3

**MAINS.** 3-Wire S/N 115/230 Volts A.C. Only.  
**BRANCHES.** 2-Wire 115-Volt S/N 15-Ampere Single Pole Breakers—Form MB.  
**CABINET.** Single Door; 15 Inches Wide and 4½ Inches Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.

No. of Branches	Main Amperes	Mains, Lugs Only			Mains, Circuit Breaker—2-Pole		
		No.	Complete Each	*Box No.	No.	Complete Each	*Box No.
4	50	NM1B04-3L	\$50.00	MB018	NM1B04-3AB	\$61.00	MB021
6	50	NM1B06-3L	57.00	MB021	NM1B06-3AB	68.00	MB024
8	50	NM1B08-3L	64.00	MB021	NM1B08-3AB	75.00	MB024
10	50	NM1B10-3L	71.00	MB024	NM1B10-3AB	82.00	MB029
12	100	NM1B12-3L	78.00	MB024	NM1B12-3AB	109.00	MB029
14	100	NM1B14-3L	85.00	MB024	NM1B14-3AB	116.00	MB032
16	100	NM1B16-3L	92.00	MB024	NM1B16-3AB	123.00	MB032
18	100	NM1B18-3L	99.00	MB029	NM1B18-3AB	130.00	MB035
20	100	NM1B20-3L	106.00	MB029	NM1B20-3AB	137.00	MB035
22	200	NM1B22-3L	113.00	MB029	NM1B22-3AB	222.00	MB046
24	200	NM1B24-3L	120.00	MB029	NM1B24-3AB	229.00	MB046
26	200	NM1B26-3L	127.00	MB032	NM1B26-3AB	236.00	MB052
28	200	NM1B28-3L	134.00	MB032	NM1B28-3AB	243.00	MB052
30	200	NM1B30-3L	141.00	MB035	NM1B30-3AB	250.00	MB052
32	200	NM1B32-3L	148.00	MB035	NM1B32-3AB	257.00	MB052
34	200	NM1B34-3L	155.00	MB038	NM1B34-3AB	264.00	MB052
36	200	NM1B36-3L	162.00	MB038	NM1B36-3AB	271.00	MB052
38	200	NM1B38-3L	169.00	MB040	NM1B38-3AB	278.00	MB055
40	200	NM1B40-3L	176.00	MB040	NM1B40-3AB	285.00	MB055
42	200	NM1B42-3L	183.00	MB040	NM1B42-3AB	297.00	MB055

## Type NMM-3

**MAINS.** 3-Wire S/N 115/230 Volts A.C. Only.  
**BRANCHES.** 2-Wire 115-Volt S/N 15-Ampere Single Pole Breakers—Form M.  
**CABINET.** Academy Door; 20 Inches Wide and 5¼ Inches Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.

No. of Branches	Main Amperes	Mains, Lugs Only			Mains, Circuit Breaker—2-Pole		
		No.	Complete Each	*Box No.	No.	Complete Each	*Box No.
4	50	NMM04-3L	\$54.00	MH17	NMM04-3AB	\$65.00	MH23
6	50	NMM06-3L	63.00	MH17	NMM06-3AB	74.00	MH23
8	50	NMM08-3L	72.00	MH17	NMM08-3AB	83.00	MH23
10	50	NMM10-3L	81.00	MH20	NMM10-3AB	92.00	MH23
12	100	NMM12-3L	90.00	MH20	NMM12-3AB	121.00	MH26
14	100	NMM14-3L	99.00	MH23	NMM14-3AB	130.00	MH29
16	100	NMM16-3L	108.00	MH23	NMM16-3AB	139.00	MH29
18	100	NMM18-3L	117.00	MH23	NMM18-3AB	148.00	MH29
20	100	NMM20-3L	126.00	MH23	NMM20-3AB	157.00	MH29
22	200	NMM22-3L	135.00	MH26	NMM22-3AB	244.00	MH41
24	200	NMM24-3L	144.00	MH26	NMM24-3AB	253.00	MH41
26	200	NMM26-3L	153.00	MH29	NMM26-3AB	262.00	MH44
28	200	NMM28-3L	162.00	MH29	NMM28-3AB	271.00	MH44
30	200	NMM30-3L	171.00	MH29	NMM30-3AB	280.00	MH47
32	200	NMM32-3L	180.00	MH29	NMM32-3AB	289.00	MH47
34	200	NMM34-3L	189.00	MH32	NMM34-3AB	298.00	MH47
36	200	NMM36-3L	198.00	MH32	NMM36-3AB	307.00	MH47
38	200	NMM38-3L	207.00	MH35	NMM38-3AB	316.00	MH50
40	200	NMM40-3L	216.00	MH35	NMM40-3AB	325.00	MH50
42	200	NMM42-3L	225.00	MH35	NMM42-3AB	334.00	MH53

## Type NMM-4

**MAINS.** 3-Phase, 4-Wire S/N 115/230 Volts A.C. Only. For Use on 120-208 Volts  
 3Ø 4-Wire Star Connected System.  
**BRANCHES.** 2-Wire 115-Volt S/N 15-Ampere Single Pole Breakers—Form M.  
**CABINET.** Single Door; 20 Inches Wide and 5¼ Inches Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.

No. of Branches	Main Amperes	Mains, Lugs Only			Mains, Circuit Breaker—3-Pole		
		No.	Complete Each	*Box No.	No.	Complete Each	*Box No.
6	50	NMM06-4L	\$68.00	MH17	NMM06-4AB	\$85.00	MH23
8	50	NMM08-4L	77.00	MH17	NMM08-4AB	94.00	MH23
10	50	NMM10-4L	86.00	MH20	NMM10-4AB	103.00	MH23
12	50	NMM12-4L	95.00	MH20	NMM12-4AB	112.00	MH23
14	50	NMM14-4L	104.00	MH23	NMM14-4AB	121.00	MH26
16	100	NMM16-4L	113.00	MH23	NMM16-4AB	130.00	MH29
18	100	NMM18-4L	122.00	MH23	NMM18-4AB	139.00	MH29
20	100	NMM20-4L	131.00	MH23	NMM20-4AB	148.00	MH29
22	100	NMM22-4L	140.00	MH26	NMM22-4AB	157.00	MH29
24	100	NMM24-4L	149.00	MH26	NMM24-4AB	166.00	MH32
26	100	NMM26-4L	158.00	MH29	NMM26-4AB	175.00	MH32
28	100	NMM28-4L	167.00	MH29	NMM28-4AB	184.00	MH35
30	100	NMM30-4L	176.00	MH29	NMM30-4AB	193.00	MH35
32	200	NMM32-4L	185.00	MH29	NMM32-4AB	202.00	MH35
34	200	NMM34-4L	194.00	MH32	NMM34-4AB	211.00	MH47
36	200	NMM36-4L	203.00	MH32	NMM36-4AB	220.00	MH47
38	200	NMM38-4L	212.00	MH35	NMM38-4AB	229.00	MH47
40	200	NMM40-4L	221.00	MH35	NMM40-4AB	238.00	MH50
42	200	NMM42-4L	230.00	MH35	NMM42-4AB	247.00	MH50

\*Last two figures of box number indicate box height.



## Square D Multi-Breaker Lighting Panelboards—3 or 4 Wire Mains

Schedule B2

## Narrow Column Types NMM-3X and NMM-3XX—3 Wire Mains

**MAIN.** Lugs Only, Single Phase, 3-Wire S/N 115/230 Volts A.C. Only.**BRANCHES.** 2-Wire 115-Volt S/N 15-Ampere Single Pole Breakers—Form M (Single Row).**CABINET.** Single Door In Hinged Front. Finish: Academy Brown.Type NMM-3X: 8 $\frac{1}{2}$  Inches Wide and 4 $\frac{1}{2}$  Inches Deep (Outside Dimensions).Type NMM-3XX: 7 $\frac{1}{4}$  Inches Wide and 4 $\frac{1}{2}$  Inches Deep (Outside Dimensions).

No. of Main Branches per row	Mains, Lugs Only					Mains, Circuit Breaker—2-Pole				
	Type NMM-3X		Type NMM-3XX			Type NMM-3X		Type NMM-3XX		
	No.	Box Height Inches	No.	Box Height Inches	Each	No.	Box Height Inches	No.	Inches	Box Height Each
4	50	NMM04-3LX	22	NMM04-3LXX	22 \$54.00	NMM04-3ABX	22	NMM04-3ABXX	22	\$65.00
6	50	NMM06-3LX	22	NMM06-3LXX	22 63.00	NMM06-3ABX	28	NMM06-3ABXX	28	74.00
8	50	NMM08-3LX	22	NMM08-3LXX	22 72.00	NMM08-3ABX	28	NMM08-3ABXX	28	83.00
10	50	NMM10-3LX	28	NMM10-3LXX	28 81.00	NMM10-3ABX	28	NMM10-3ABXX	28	92.00
12	100	NMM12-3LX	28	NMM12-3LXX	28 90.00	NMM12-3ABX	34	NMM12-3ABXX	34	121.00
14	100	NMM14-3LX	28	NMM14-3LXX	28 99.00	NMM14-3ABX	34	NMM14-3ABXX	34	130.00
16	100	NMM16-3LX	34	NMM16-3LXX	34 108.00	NMM16-3ABX	34	NMM16-3ABXX	34	139.00
18	100	NMM18-3LX	34	NMM18-3LXX	34 117.00	NMM18-3ABX	40	NMM18-3ABXX	40	148.00
20	100	NMM20-3LX	34	NMM20-3LXX	34 126.00	NMM20-3ABX	40	NMM20-3ABXX	40	157.00
22	100	NMM22-3LX	40	NMM22-3LXX	40 135.00	.....	.....	.....	.....	.....
24	100	NMM24-3LX	40	NMM24-3LXX	40 144.00	.....	.....	.....	.....	.....
26	100	NMM26-3LX	40	NMM26-3LXX	40 153.00	.....	.....	.....	.....	.....
28	100	NMM28-3LX	46	NMM28-3LXX	46 162.00	.....	.....	.....	.....	.....
30	100	NMM30-3LX	46	NMM30-3LXX	46 171.00	.....	.....	.....	.....	.....
32	100	NMM32-3LX	52	NMM32-3LXX	52 180.00	.....	.....	.....	.....	.....
34	200	NMM34-3LX	52	NMM34-3LXX	52 189.00	.....	.....	.....	.....	.....
36	200	NMM36-3LX	58	NMM36-3LXX	58 198.00	.....	.....	.....	.....	.....
38	200	NMM38-3LX	58	NMM38-3LXX	58 207.00	.....	.....	.....	.....	.....
40	200	NMM40-3LX	58	NMM40-3LXX	58 216.00	.....	.....	.....	.....	.....

Type NMM-3X

## Narrow Column Types NMM-4X and NMM-4XX—4 Wire Mains

**MAIN.** Lugs Only, Three Phase, 4-Wire S/N 115/230 Volts A.C. Only. For Use on 120/208 Volts 3Ø 4-Wire Star Connected System.**BRANCHES.** 2-Wire 115-Volt S/N 15-Ampere Single Pole Breakers—Form M (Single Row).**CABINET.** Single Door in Hinged Front. Finish: Academy Brown.Type NMM-4X: 8 $\frac{1}{2}$  Inches Wide and 4 $\frac{1}{2}$  Inches Deep (Outside Dimensions).Type NMM-4XX: 7 $\frac{1}{4}$  Inches Wide and 4 $\frac{1}{2}$  Inches Deep (Outside Dimensions).

No. of Main Branches per row		Mains, Lugs Only				Mains, Circuit Breaker—3-Pole				
		Type NMM-4X		Type NMM-4XX		Type NMM-4X		Type NMM-4XX		
	No.	Box Height Inches	No.	Box Height Inches	Each	No.	Box Height Inches	No.	Box Height Inches	Each
6	50	NMM06-4LX	22	NMM06-4LXX	22 \$68.00	NMM06-4ABX	28	NMM06-4ABXX	28	\$85.00
8	50	NMM08-4LX	22	NMM08-4LXX	22 77.00	NMM08-4ABX	28	NMM08-4ABXX	28	94.00
10	50	NMM10-4LX	28	NMM10-4LXX	28 86.00	NMM10-4ABX	28	NMM10-4ABXX	34	103.00
12	50	NMM12-4LX	28	NMM12-4LXX	28 95.00	NMM12-4ABX	34	NMM12-4ABXX	34	112.00
14	50	NMM14-4LX	28	NMM14-4LXX	28 104.00	NMM14-4ABX	34	NMM14-4ABXX	34	121.00
16	100	NMM16-4LX	34	NMM16-4LXX	34 113.00	NMM16-4ABX	34	NMM16-4ABXX	46	153.00
18	100	NMM18-4LX	34	NMM18-4LXX	34 122.00	NMM18-4ABX	40	NMM18-4ABXX	46	162.00
20	100	NMM20-4LX	34	NMM20-4LXX	34 131.00	NMM20-4ABX	40	NMM20-4ABXX	46	171.00
22	100	NMM22-4LX	40	NMM22-4LXX	40 140.00	NMM22-4ABX	40	NMM22-4ABXX	52	180.00
24	100	NMM24-4LX	40	NMM24-4LXX	40 149.00	NMM24-4ABX	46	NMM24-4ABXX	52	189.00
26	100	NMM26-4LX	40	NMM26-4LXX	40 158.00	NMM26-4ABX	46	NMM26-4ABXX	52	198.00
28	100	NMM28-4LX	46	NMM28-4LXX	46 167.00	NMM28-4ABX	46	NMM28-4ABXX	58	207.00
30	100	NMM30-4LX	46	NMM30-4LXX	46 176.00	NMM30-4ABX	52	NMM30-4ABXX	58	216.00
32	100	NMM32-4LX	52	NMM32-4LXX	52 185.00	.....	.....	.....	.....	.....
34	100	NMM34-4LX	52	NMM34-4LXX	52 194.00	.....	.....	.....	.....	.....
36	100	NMM36-4LX	58	NMM36-4LXX	58 203.00	.....	.....	.....	.....	.....
38	100	NMM38-4LX	58	NMM38-4LXX	58 212.00	.....	.....	.....	.....	.....
40	100	NMM40-4LX	58	NMM40-4LXX	58 221.00	.....	.....	.....	.....	.....

## #2 Ungrounded Poles

Main Amp.	Lugs Only Each	Circuit Breaker Each
50-100	.....	.....
50-200	.....	.....
100-200	.....	.....

## 3 Ungrounded Poles

50-100	.....
50-200	.....
100-200	.....

\*For use on panelboards with 3-wire mains only.

†Main breakers are limited to 100 amperes.

Prices are for panels either 8 $\frac{1}{2}$  or 7 $\frac{1}{4}$  inches wide.

Wiring gutters are at top, bottom and left side. Top gutter varies from 6 to 10 inches, depending on neutral bar which is placed there since branch feeders usually come into that end of box. Bottom gutter is 4 inches high. Side gutter is 3 $\frac{1}{4}$  inches wide in the 8 $\frac{1}{2}$ -inch wide cabinet, and 1 $\frac{1}{4}$  inches wide in the 7 $\frac{1}{4}$ -inch wide cabinet.

It is recommended that panels with 16 or more poles have cabinets 6 $\frac{1}{2}$  inches deep instead of 4 $\frac{1}{2}$  inches, so that additional wiring space in back of interior may be had. When cabinets 6 $\frac{1}{2}$  inches deep are desired, increase above prices by 5 per cent (before adding for double pole branches when required).

These panels can be furnished with cable troughs and pull boxes for H-beam mounting. Prices on request.

Listing are based on 15-ampere breakers, which will be furnished unless otherwise specified. The 20, 25, 35 or 50-ampere breakers will be furnished at no extra charge if specified, except that increased mains may be required; see additions in table at right.

For panels having combination of 1 and 2-pole branches, all fed from same bus and under one door, determine total number of poles in branches. With this equivalent number of 1-pole circuits, obtain price of panel from tables shown, and add \$1.00 for each 2-pole circuit.

All 2-pole branch circuit breakers have separate trip.

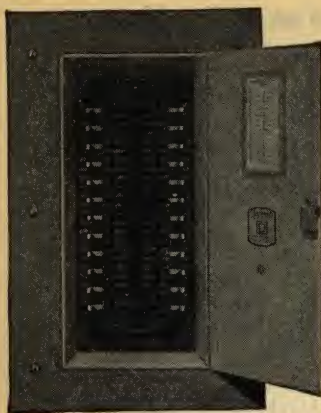
Standard knockouts are furnished in top and bottom ends of all boxes, except the boxes for Types NMM-3XX and NMM-4XX which are furnished with blank top and bottom ends as standard.

When space only for further branches is required, figure panels on basis of total number of branches and deduct \$1.00 for each breaker pole omitted.

When any panel has both 1 and 2-pole branches, or two or more capacities of breakers, the Square D Company reserves the right to determine the relative positions of the branches on the panels.

**When ordering,** specify number, number of 1-pole and 1 or 2-pole branch circuits, ampere rating of each branch, ampere rating of mains, flush or surface mounting, and price.





### Square D Circuit Breaker Lighting Panelboards

#### Schedule G

Prices are based on 15-ampere breakers. The 10, 20 and 25-ampere breakers can be supplied at the same price. For 35 and 50-ampere breakers, add \$1.00 per single pole and \$2.00 per double pole. Add for increased mains, if required.

#### Type NA1B-3

**MAINS.** 125-250 Volts, 1 $\phi$  3-Wire S/N A.C. or D.C.  
**BRANCHES.** 2-Wire 125-Volt 15-Ampere Single Pole Breaker—Form L.  
**FINISH.** Front, Academy Brown; Box, Galvanized Steel.  
With Cabinets 12 Inches Wide and 4 Inches Deep

Mains, Lugs Only				Mains, Circuit Breaker—2-Pole			
No.	Main Br. Amps.	No.	Complete Each	*Box No.	No.	Complete Each	*Box No.
4	50	NA1B04	3L \$62.	LP15	NA1B04	3AB \$73.	LP21
6	50	NA1B06	3L 75.	LP18	NA1B06	3AB 86.	LP24
8	50	NA1B08	3L 88.	LP21	NA1B08	3AB 99.	LP27
10	50	NA1B10	3L 101.	LP21	NA1B10	3AB 112.	LP27

#### With Cabinets 20 Inches Wide and 5 $\frac{3}{4}$ Inches Deep

12	100	NA1B12	3L \$114.	MH20	NA1B12	3AB \$145.	MH29
14	100	NA1B14	3L 127.	MH20	NA1B14	3AB 158.	MH29
16	100	NA1B16	3L 140.	MH23	NA1B16	3AB 171.	MH32
18	100	NA1B18	3L 153.	MH23	NA1B18	3AB 184.	MH32
20	100	NA1B20	3L 166.	MH23	NA1B20	3AB 197.	MH32
22	100	NA1B22	3L 179.	MH26	NA1B22	3AB 288.	MH35
24	100	NA1B24	3L 192.	MH26	NA1B24	3AB 301.	MH35
26	100	NA1B26	3L 205.	MH26	NA1B26	3AB 314.	MH35
28	100	NA1B28	3L 218.	MH29	NA1B28	3AB 327.	MH38
30	100	NA1B30	3L 231.	MH29	NA1B30	3AB 340.	MH38
32	100	NA1B32	3L 244.	MH29	NA1B32	3AB 353.	MH38
34	200	NA1B34	3L 257.	MH32	NA1B34	3AB 366.	MH50
36	200	NA1B36	3L 270.	MH32	NA1B36	3AB 379.	MH50
38	200	NA1B38	3L 283.	MH32	NA1B38	3AB 392.	MH50
40	200	NA1B40	3L 296.	MH35	NA1B40	3AB 405.	MH53
42	200	NA1B42	3L 309.	MH35	NA1B42	3AB 418.	MH53

#### Type NA1B-4

**MAINS.** 120-208 Volts, 3 $\phi$  4-Wire S/N A.C.  
**BRANCHES.** 2-Wire 125-Volt 15-Ampere Single Pole Breaker—Form L.  
**FINISH.** Front, Academy Brown; Box, Galvanized Steel.  
With Cabinets 12 Inches Wide and 4 Inches Deep

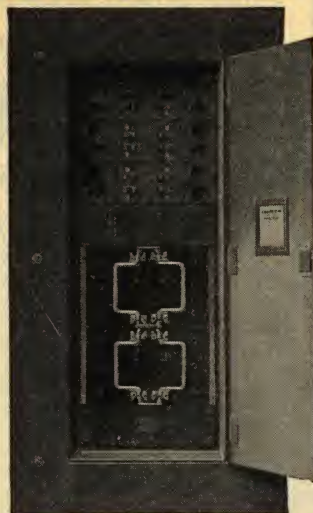
Mains, Lugs Only				Mains, Circuit Breaker—3-Pole			
No.	Main Br. Amps.	No.	Complete Each	*Box No.	No.	Complete Each	*Box No.
4	50	NA1B04	4L \$67.	LP18	NA1B04	4AB \$84.	LP24
6	50	NA1B06	4L 80.	LP21	NA1B06	4AB 97.	LP27
8	50	NA1B08	4L 93.	LP21	NA1B08	4AB 110.	LP27
10	50	NA1B10	4L 106.	LP24	NA1B10	4AB 123.	LP30
12	50	NA1B12	4L 119.	LP27	NA1B12	4AB 136.	LP33
14	50	NA1B14	4L 132.	LP27	NA1B14	4AB 149.	LP33

#### With Cabinets 20 Inches Wide and 5 $\frac{3}{4}$ Inches Deep

16	100	NA1B16	4L \$145.	MH23	NA1B16	4AB \$185.	MH32
18	100	NA1B18	4L 158.	MH23	NA1B18	4AB 198.	MH32
20	100	NA1B20	4L 171.	MH23	NA1B20	4AB 211.	MH32
22	100	NA1B22	4L 184.	MH26	NA1B22	4AB 224.	MH35
24	100	NA1B24	4L 197.	MH26	NA1B24	4AB 237.	MH35
26	100	NA1B26	4L 210.	MH26	NA1B26	4AB 250.	MH35
28	100	NA1B28	4L 223.	MH29	NA1B28	4AB 263.	MH38
30	100	NA1B30	4L 236.	MH29	NA1B30	4AB 276.	MH38
32	100	NA1B32	4L 249.	MH29	NA1B32	4AB 383.	MH38
34	100	NA1B34	4L 262.	MH32	NA1B34	4AB 396.	MH41
36	100	NA1B36	4L 275.	MH32	NA1B36	4AB 409.	MH41
38	100	NA1B38	4L 288.	MH32	NA1B38	4AB 422.	MH41
40	100	NA1B40	4L 301.	MH35	NA1B40	4AB 435.	MH44
42	100	NA1B42	4L 314.	MH35	NA1B42	4AB 448.	MH44

\*Last two figures of box number indicate height.

### Square D Saflex Distribution Panels



A Special Combination Lighting and Distribution Panelboard In a Box 20 Inches Wide

The Square D Saflex Distribution Panel was first designed to meet the rigid requirements of the industrial field, with the thought of providing a maximum degree of safety, convenience and dependability in a compact form to control electric service and feeders supplying current for power, heat and light. The Saflex fusible switch units used in these panels have proved, over a decade of actual use, to be highly desirable where trouble-proof service is essential. They insure undisturbed control of electric current where interruptions in electric service are very costly and therefore cannot be allowed.

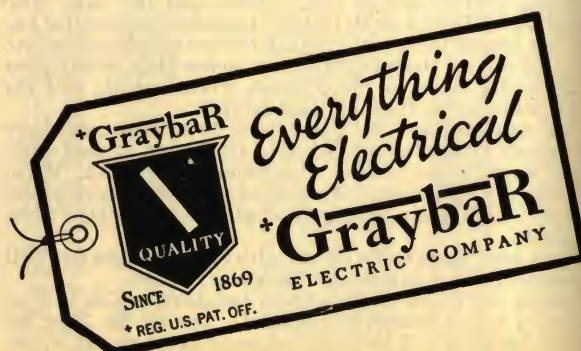
The Saflex panelboard is made up of interchangeable switch units mounted upon steel channels within a steel cabinet with copper bus bars mounted in an isolated bus compartment in the rear of the switch units. All Saflex panels are listed and approved by Underwriters' Laboratories, Inc.

Saflex panels are used and highly recommended by many of the largest industries in the United States and Canada. They can also be found in many other parts of the world. They are ideally suited for industrials, schools, hospitals and other buildings where safety and dependability are of prime importance. They can be furnished for controlling any of the following services:

- 125, 250 or 575 volts, 3 phase, 3 wire, a.c.
- 120/208 volts, 3 phase, 4 wire, a.c.
- 115 or 230 volts, 1 phase, 3 wire, a.c.
- 125, 250 or 575 volts, 1 phase, 2 wire, a.c.
- 115 or 230 volts, 3 wire, d.c.
- 125, 250 or 600 volts, 2 wire, d.c.

#### Special Combination Lighting and Distribution Panelboards

Special combinations can be furnished in addition to the standard Saflex units. These may include double throw Saflex switch units, motor starters, meters, current transformers, etc. Prices and complete information upon request.





## Bull Dog Main Service, Range and Lighting Cabinets

Sequence: Meter—Switch—Fuse

Dead Front Construction  
Main Switch Fusible—125/250 Volts A.C. Grounded Solid  
Neutral 3-Pole, 2 Blades, 2 Fuses



No. 551204BKC

Boxes are made from code gage steel, either galvanized or finished to match the fronts. Fronts have black finish and are supplied with pull rings and spring catches.

### Surface Mounting

Amps.	No.	Each	BRANCHES				Weight Pounds Each
			Cart. Fuse Conn.	60-Amp. Switch	30-Amp. FUSE Plug	Weight Pounds Each	
60	551204BKC	\$12.00	2	1	4	10	
60	551204XBKC	14.00	2	1	4	10	
60	551204PTK	12.00	2	1	4	10	
60	551204XPTK	14.00	2	1	4	10	

### Flush Mounting

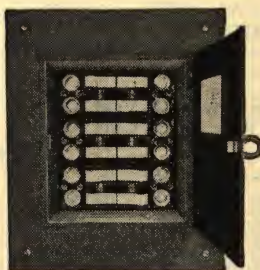
Amps.	No.	Each	BRANCHES				Weight Pounds Each
			Cart. Fuse Conn.	60-Amp. Switch	30-Amp. FUSE Plug	Weight Pounds Each	
60	561204BKC	\$13.00	2	1	4	10	
60	561204XBKC	14.00	2	1	4	10	

## Bull Dog Rocker Type Switch Centers

MAINS. Lugs Only, 60-Ampere Solderless Type.

BRANCHES. 30-Ampere Single Pole Rocker Type Switches and Plug Fuse Connections.

CABINET. One Door Construction, Ring Spring Catch Only  
Locks Cannot Be Furnished with This Type.  
Width, 12 Inches, Depth, 3 3/8 Inches, 1 1/2-Inch  
Wiring Cutters.



No. RPS312L

The shallow boxes permit flush type switch centers to be mounted in thin walls composed of sheet rock, wall board, masonite, or similar material.

### 3/2 Wire—125-250 Volts Solid Neutral

No. of Circuits	INSIDE BOX DIMENSIONS, INCHES			Weight Pounds	Flush Type No.	Surface Type No.	Each
	Height	Width	Depth				
4	7	12	3 3/8	16	RPS304L	RPS304LS	\$13.00
8	12	12	3 3/8	24	RPS308L	RPS308LS	19.50
12	15	12	3 3/8	30	RPS312L	RPS312LS	37.50

### 3 Phase 4 Wire—120-208 Volts Solid Neutral

No. of Circuits	Height	Width	Depth	Weight Pounds	Flush Type No.	Surface Type No.	Each
8	12	12	3 3/8	24	RPS408L	RPS408LS	\$27.50
12	15	12	3 3/8	30	RPS412L	RPS412LS	41.00

## Bull Dog Lighting Panelboards

Double Row—Unit-Versal Type

Branches: Fuse Only

Using Plug Fuse in 1 Leg Only—Solid Neutral Bar in Other

Cabinets, 20 inches wide, 5 1/2 inches deep.

Wiring gutters, 4 inches.

Numerals in Box No. indicate height in inches.

Mains: 3-Wire, 125/250 Volts  
Branches: 2-Wire, 30 Amps.,  
125 V., Single Pole

Mains—Lugs Only, Solid Neutral

No. Cir.	No.	Each	Ampers Mains	Box No.
16	N2P316L	\$78.00	100	W23
24	N2P324L	94.00	200	W26
32	N2P332L	109.00	200	W29
40	N2P340L	125.00	200	W35

Mains—SAF to FUSE, Solid Neutral

No. Cir.	No.	Each	Ampers Mains	Box No.
8	N2P308F	\$77.00	60	W26
16	N2P316F	107.00	100	W32
24	N2P324F	159.00	200	W35
32	N2P332F	174.00	200	W38
40	N2P340F	190.00	200	W44

Mains: 4-Wire, 3-Phase, 120/208  
Volts

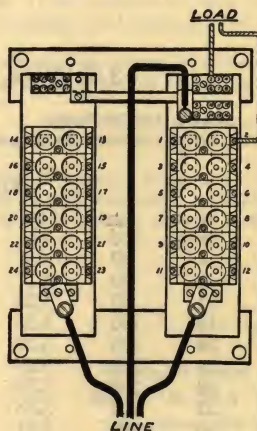
Branches: 2-Wire, 30 Amps. 125 V.  
Single Pole

Mains—Lugs Only, Solid Neutral

No. Cir.	No.	Each	Ampers Mains	Box No.
16	N2P416L	\$84.00	60	W26
24	N2P424L	100.00	100	W29
32	N2P432L	116.00	200	W32
40	N2P440L	131.00	200	W35

Mains—SAF to FUSE, Solid Neutral

No. Cir.	No.	Each	Ampers Mains	Box No.
8	N2P408F	\$97.00	60	W26
16	N2P416F	107.00	60	W32
24	N2P424F	143.00	100	W35
32	N2P432F	212.00	200	W38
40	N2P440F	227.00	200	W41



Style N2P324L

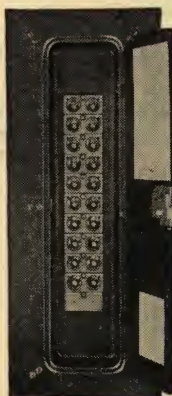
## Single Row—Narrow Type

NRP Fusenter Line

MAINS. 3 Wire, 125/250 Volts, Lugs Only.

BRANCHES. 2 Wire, 30 Amperes, 125 Volts, Plug Fuse Only.

CABINET. Box, Code Gage Galvanized Steel—10 1/2 Inches Wide,  
4 1/2 Inches Deep, 3-Inch Wiring Gutters, Front, Code  
Thickness Steel, Flush Spring Locks—Black Finish.

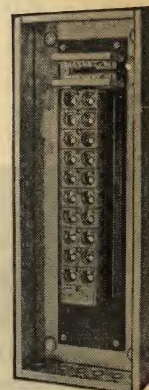


No. NRP320L  
Flush Type

The Fusenter Light-  
ing Panel contains a  
compact porcelain  
unit, with silver sur-  
faced current-carrying  
parts.

Main terminals are  
solderless Wire Grips.

Flush fronts will be  
furnished unless sur-  
face type is specified  
on order.



No. NRP320L  
Surface Type

No.	Each	No. of Circuits	Main Amp.	Box Height Inches	Weight Pounds Each
NRP308L	\$22.00	8	60	15	20
NRP310L	25.00	10	60	20	25
NRP312L	28.00	12	60	20	26
NRP314L	31.00	14	100	24	34
NRP316L	33.00	16	100	24	35
NRP318L	36.00	18	100	28	40
NRP320L	38.00	20	100	28	41



## Bull Dog Rocker Type Lighting Panelboards

**CABINET.** X Boxes, 15½ Inches; Depth, 4½ Inches; 4-Inch Gutters. W Boxes: Width 20 Inches; Depth 5½ Inches; 4 Inch Gutters. Height in Inches Is Indicated by Numerals in Box Numbers.  
**Front, One Door Construction. Code Thickness Steel, Black Finish—Flush Spring Locks.**

For inner doors, add extra list price shown below, and add suffix "D" to numbers, for example: NTPR316LD.

Flush fronts will be furnished unless surface type is specified on order.

## 3/2 Wire, Solid Neutral

**MAINS.** 3-Wire, 125-250 Volts.

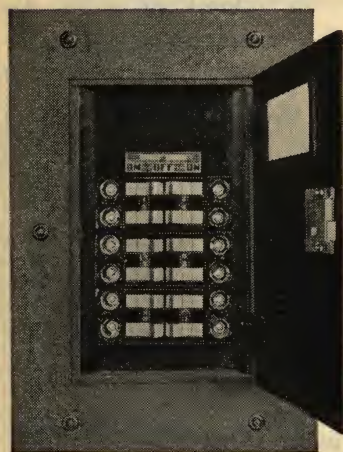
**BRANCHES.** 2-Wire, 125-Volt, 30-Ampere Single Pole Rocker Type Switch and Fuse.

## Mains: Lugs Only (Solderless Wire Grips), Solid Neutral

No. of Circuits	Main Amp.	Box No.	With Plug Fuses		With Cartridge Fuses		Add for Inner Doors
			No.	Each	No.	Each	
4	30	X17	NTPR304L	\$33.00	NTCR304L	\$36.00	\$7.00
8	60	X17	NTPR308L	38.00	NTCR308L	42.00	7.00
12	60	X23	NTPR312L	48.00	NTCR312L	53.00	8.00
16	100	X23	NTPR316L	71.00	NTCR316L	78.00	8.00
20	100	X29	NTPR320L	81.00	NTCR320L	89.00	11.00
24	200	X29	NTPR324L	98.00	NTCR324L	108.00	11.00
28	200	X38	NTPR328L	107.00	NTCR328L	118.00	14.00
32	200	X38	NTPR332L	117.00	NTCR332L	129.00	14.00
36	200	X44	NTPR336L	135.00	NTCR336L	148.00	17.00
40	200	X44	NTPR340L	146.00	NTCR340L	161.00	17.00

## Mains: SAFtoFUSE, Solid Neutral

4	30	X23	NTPR304F	\$55.00	NTCR304F	\$60.00	\$8.00
8	60	X23	NTPR308F	63.00	NTCR308F	69.00	8.00
12	60	X29	NTPR312F	73.00	NTCR312F	80.00	11.00
16	100	X29	NTPR316F	99.00	NTCR316F	109.00	11.00
20	100	X38	NTPR320F	109.00	NTCR320F	120.00	14.00
24	200	W38	NTPR324F	135.00	NTCR324F	148.00	17.00
28	200	W50	NTPR328F	145.00	NTCR328F	159.00	29.00
32	200	W50	NTPR332F	154.00	NTCR332F	169.00	29.00
36	200	W56	NTPR336F	179.00	NTCR336F	197.00	33.00
40	200	W56	NTPR340F	190.00	NTCR340F	209.00	33.00



No. NTPR312L Plug  
Fusible Type

## 3-Phase, 4-Wire, Solid Neutral

**MAINS.** 3-Phase, 4-Wire, 120-208 Volts Solid Neutral.

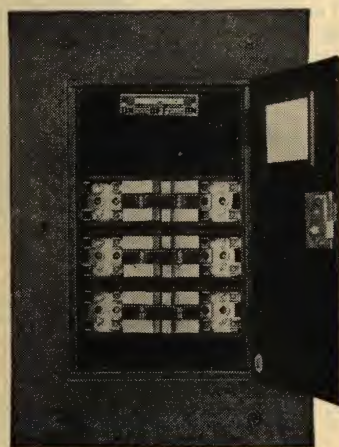
**BRANCHES.** 2-Wire, 120-Volt, 30-Ampere Single Pole Rocker Type Switch and Fuse.

## Mains: Lugs Only (Solderless Wire Grips), Solid Neutral

No. of Circuits	Main Amp.	Box No.	With Plug Fuses		With Cartridge Fuses		Add for Inner Doors
			No.	Each	No.	Each	
8	60	X17	NTPR408L	\$43.00	NTCR408L	\$47.00	\$7.00
12	60	X23	NTPR412L	54.00	NTCR412L	59.00	8.00
16	60	X23	NTPR416L	79.00	NTCR416L	87.00	8.00
20	100	X29	NTPR420L	96.00	NTCR420L	106.00	11.00
24	100	X29	NTPR424L	107.00	NTCR424L	118.00	11.00
28	100	X38	NTPR428L	110.00	NTCR428L	121.00	14.00
32	200	X38	NTPR432L	131.00	NTCR432L	144.00	14.00
36	200	X44	NTPR436L	158.00	NTCR436L	174.00	17.00
40	200	X44	NTPR440L	170.00	NTCR440L	187.00	17.00

## Mains: SAFtoFUSE, Solid Neutral

8	60	X23	NTPR408F	\$70.00	NTCR408F	\$77.00	\$8.00
12	60	X29	NTPR412F	81.00	NTCR412F	89.00	11.00
16	60	X29	NTPR416F	106.00	NTCR416F	117.00	11.00
20	100	X38	NTPR420F	125.00	NTCR420F	137.00	14.00
24	100	X38	NTPR424F	136.00	NTCR424F	150.00	14.00
28	100	X44	NTPR428F	140.00	NTCR428F	154.00	17.00
32	200	W53	NTPR432F	173.00	NTCR432F	190.00	32.00
36	200	W59	NTPR436F	201.00	NTCR436F	221.00	33.00
40	200	W59	NTPR440F	213.00	NTCR440F	234.00	33.00



No. NTPR312L Cartridge  
Fusible Type



## Bull Dog Nofuze Lighting Panels and Cabinets

## Circuit Breaker Type

These panels have circuit breakers in the branches in lieu of toggle switches and fuses.

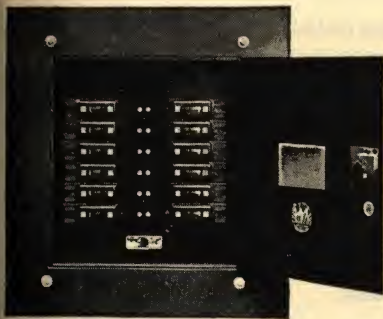
They are adapted for use in buildings where circuits are subject to overloads which would involve much fuse replacement and where frequent switching is done at the panels.

The breakers are quick-make and quick-break with automatic overload trip and inverse-time-limit feature. They cannot be held closed against overload. The trip is automatic and self-indicating with manual reset.

Code gage galvanized sheet steel boxes; width, 20 inches, depth, 5½ inches; gutters, 4 inches. Height of box in inches is indicated by numerals in box catalog numbers shown in tables.

Flush fronts furnished unless surface type specified.

Catalog Nos. listed cover 15-ampere breakers. No increase in price for 20 and 25-ampere breakers. For 35 and 50 amperes, add \$1.00 for single pole and \$2.00 for double pole. Capacity of each branch circuit must be specified on order.



No. NA1B312—with Main Lugs

## Type NA1B3

3-Wire, Single Phase, 125/250 Volt, Solid Neutral

Mains: 125/250 V. 3-Wire, Single Phase, Solid Neutral

Branches: 125 V. 2-Wire with 15 Amp. S.P. Circuit Breakers A.C. or D.C.

## Main Lugs Only

No. of Cir.	Catalog Number	Each	Main Amp.	Box Cat. No.	Approx. Wt. Lbs.
4	NA1B304L	\$81.00	50	W14	62
6	NA1B306L	97.00	50	W17*	68
8	NA1B308L	114.00	50	W17	70
10	NA1B310L	131.00	50	W20*	76
12	NA1B312L	148.00	100	W20	78
14	NA1B314L	165.00	100	W23*	84
16	NA1B316L	182.00	100	W23	86
18	NA1B318L	199.00	100	W26*	95
20	NA1B320L	216.00	100	W26	98
22	NA1B322L	233.00	200	W29*	108
24	NA1B324L	250.00	200	W29	112
26	NA1B326L	266.00	200	W32*	125
28	NA1B328L	283.00	200	W32	130
30	NA1B330L	300.00	200	W35*	145
32	NA1B332L	317.00	200	W35	151
34	NA1B334L	334.00	200	W41*	168
36	NA1B336L	351.00	200	W41	175
38	NA1B338L	368.00	200	W44*	194
40	NA1B340L	385.00	200	W44	202

## Main Breakers

4	NA1B304AB	\$95.00	50	W26	78
6	NA1B306AB	112.00	50	W29*	84
8	NA1B308AB	129.00	50	W29	86
10	NA1B310AB	146.00	50	W32*	95
12	NA1B312AB	188.00	100	W32	98
14	NA1B314AB	205.00	100	W35*	108
16	NA1B316AB	222.00	100	W35	112
18	NA1B318AB	239.00	100	W38*	125
20	NA1B320AB	256.00	100	W38	130
22	NA1B322AB	374.00	200	W47*	145
24	NA1B324AB	391.00	200	W47	151
26	NA1B326AB	408.00	200	W50*	168
28	NA1B328AB	425.00	200	W50	175
30	NA1B330AB	442.00	200	W53*	194
32	NA1B332AB	459.00	200	W53	202
34	NA1B334AB	476.00	200	W59*	223
36	NA1B336AB	493.00	200	W59	233
38	NA1B338AB	510.00	200	W62*	256
40	NA1B340AB	526.00	200	W62	267

## Type NA1B4

4-Wire, 3-Phase 125/250 Volt, Solid Neutral

Mains: 125/250 V. 4-Wire, 3-Phase, Solid Neutral

Branches: 125 Volts 2-Wire with 15 Amp. S.P. Circuit Breakers A.C.

## Main Lugs Only

No. of Cir.	Catalog Number	Each	Main Amp.	Box Cat. No.	Approx. Wt. Lbs.
4	NA1B404L	\$87.00	50	W14	58
6	NA1B406L	104.00	50	W17*	64
8	NA1B408L	121.00	50	W17	70
10	NA1B410L	138.00	50	W20*	76
12	NA1B412L	155.00	50	W20	78
14	NA1B414L	172.00	50	W23*	84
16	NA1B416L	188.00	100	W23	86
18	NA1B418L	205.00	100	W26*	95
20	NA1B420L	222.00	100	W26	98
22	NA1B422L	239.00	100	W29*	108
24	NA1B424L	256.00	100	W29	112
26	NA1B426L	273.00	100	W32*	125
28	NA1B428L	290.00	100	W32	130
30	NA1B430L	307.00	100	W35*	145
32	NA1B432L	324.00	200	W35	151
34	NA1B434L	341.00	200	W41*	168
36	NA1B436L	357.00	200	W41	175
38	NA1B438L	374.00	200	W44*	194
40	NA1B440L	391.00	200	W44	202

## Main Breakers

4	NA1B404AB	\$109.00	50	W26	78
6	NA1B406AB	126.00	50	W29*	84
8	NA1B408AB	143.00	50	W29	86
10	NA1B410AB	160.00	50	W32*	95
12	NA1B412AB	177.00	50	W32	98
14	NA1B414AB	194.00	50	W35*	108
16	NA1B416AB	240.00	100	W35	112
18	NA1B418AB	257.00	100	W38*	125
20	NA1B420AB	274.00	100	W38	130
22	NA1B422AB	291.00	100	W41*	145
24	NA1B424AB	308.00	100	W41	151
26	NA1B426AB	325.00	100	W44*	168
28	NA1B428AB	342.00	100	W44	175
30	NA1B430AB	359.00	100	W47*	194
32	NA1B432AB	498.00	200	W53	202
34	NA1B434AB	515.00	200	W59*	223
36	NA1B436AB	532.00	200	W59	233
38	NA1B438AB	549.00	200	W62*	244
40	NA1B440AB	565.00	200	W62	250

\*Spare space included in these panels for 2 future S.P. circuit breakers.



## Bull Dog Superba Lighting Panelboards

**CABINET.** Box, Code Gage Galvanized Steel—20 Inches Wide, 5½ Inches Deep, 4-Inch Gutters.  
Height in Inches is Indicated by Numerals in Box Numbers.  
**Front, Code, Thickness Steel, Black Finish—Flush Spring Locks.**

**Modified Type.** Has the improved features of the Superba design, but is furnished without separate doors over fuses.  
**Standard Type.** Equipped with separate doors over the fuses of each branch circuit, interlocked with the toggle switches for safety.

Numbers and prices include complete panel (less fuses) and cabinet.

Flush fronts will be furnished unless surface type is specified on order.

## Single Fusing—3/2 Wire, Solid Neutral

**MAINS.** 3-Wire, 125-250 Volts.

**BRANCHES.** 2-Wire, 125-Volt, 30-Ampere Single Pole Toggle Switch and Fuse.

**Mains. Lugs Only, Solid Neutral**

No. of Circuits	Main Amp.	Box No.	*Modified Superba Type One Door Construction			Standard Superba Type Individual Doors over Fuses		
			Plug Fuse No.	Cartridge Fuse No.	Each	Plug Fuse No.	Cartridge Fuse No.	Each
4	30	W14	NTP304L	NTC304L	\$62.00	SNTP304LD	SNTC304LD	\$83.00
8	60	W17	NTP308L	NTC308L	78.00	SNTP308LD	SNTC308LD	99.00
12	60	W20	NTP312L	NTC312L	94.00	SNTP312LD	SNTC312LD	114.00
16	100	W23	NTP316L	NTC316L	109.00	SNTP316LD	SNTC316LD	130.00
20	100	W26	NTP320L	NTC320L	125.00	SNTP320LD	SNTC320LD	146.00
24	200	W29	NTP324L	NTC324L	140.00	SNTP324LD	SNTC324LD	161.00
28	200	W32	NTP328L	NTC328L	156.00	SNTP328LD	SNTC328LD	177.00
32	200	W35	NTP332L	NTC332L	172.00	SNTP332LD	SNTC332LD	192.00
36	200	W41	NTP336L	NTC336L	187.00	SNTP336LD	SNTC336LD	208.00
40	200	W44	NTP340L	NTC340L	203.00	SNTP340LD	SNTC340LD	224.00

**Mains: SAFToFUSE, Solid Neutral**

4	30	W23	NTP304F	NTC304F	\$77.00	SNTP304FD	SNTC304FD	\$97.00
8	60	W26	NTP308F	NTC308F	92.00	SNTP308FD	SNTC308FD	113.00
12	60	W29	NTP312F	NTC312F	108.00	SNTP312FD	SNTC312FD	129.00
16	100	W32	NTP316F	NTC316F	138.00	SNTP316FD	SNTC316FD	159.00
20	100	W35	NTP320F	NTC320F	153.00	SNTP320FD	SNTC320FD	174.00
24	200	W44	NTP324F	NTC324F	205.00	SNTP324FD	SNTC324FD	226.00
28	200	W47	NTP328F	NTC328F	221.00	SNTP328FD	SNTC328FD	242.00
32	200	W50	NTP332F	NTC332F	237.00	SNTP332FD	SNTC332FD	257.00
36	200	W56	NTP336F	NTC336F	252.00	SNTP336FD	SNTC336FD	273.00
40	200	W59	NTP340F	NTC340F	268.00	SNTP340FD	SNTC340FD	289.00

## Single Fusing—3-Phase, 4-Wire, Solid Neutral

**MAINS.** 3-Phase, 4-Wire, 120-208 Volts, Solid Neutral.

**BRANCHES.** 2-Wire, 125-Volt, 30-Ampere Single Pole Toggle Switch and Fuse.

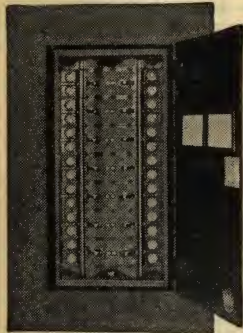
**Mains: Lugs Only, Solid Neutral**

4	30	W14	NTP404L	NTC404L	\$69.00	SNTP404LD	SNTC404LD	\$90.00
8	60	W17	NTP408L	NTC408L	84.00	SNTP408LD	SNTC408LD	105.00
12	60	W20	NTP412L	NTC412L	100.00	SNTP412LD	SNTC412LD	121.00
16	60	W23	NTP416L	NTC416L	116.00	SNTP416LD	SNTC416LD	136.00
20	60	W26	NTP420L	NTC420L	131.00	SNTP420LD	SNTC420LD	152.00
24	60	W29	NTP424L	NTC424L	147.00	SNTP424LD	SNTC424LD	168.00
28	100	W32	NTP428L	NTC428L	162.00	SNTP428LD	SNTC428LD	183.00
32	200	W35	NTP432L	NTC432L	178.00	SNTP432LD	SNTC432LD	199.00
36	200	W41	NTP436L	NTC436L	194.00	SNTP436LD	SNTC436LD	214.00
40	200	W44	NTP440L	NTC440L	209.00	SNTP440LD	SNTC440LD	230.00

**Mains: SAFToFUSE, Solid Neutral**

4	30	W23	NTP404F	NTC404F	\$91.00	SNTP404FD	SNTC404FD	\$112.00
8	60	W26	NTP408F	NTC408F	107.00	SNTP408FD	SNTC408FD	127.00
12	60	W29	NTP412F	NTC412F	122.00	SNTP412FD	SNTC412FD	143.00
16	60	W32	NTP416F	NTC416F	138.00	SNTP416FD	SNTC416FD	159.00
20	60	W35	NTP420F	NTC420F	174.00	SNTP420FD	SNTC420FD	195.00
24	60	W38	NTP424F	NTC424F	190.00	SNTP424FD	SNTC424FD	211.00
28	100	W41	NTP428F	NTC428F	205.00	SNTP428FD	SNTC428FD	226.00
32	200	W44	NTP432F	NTC432F	274.00	SNTP432FD	SNTC432FD	295.00
36	200	W50	NTP436F	NTC436F	290.00	SNTP436FD	SNTC436FD	311.00
40	200	W53	NTP440F	NTC440F	305.00	SNTP440FD	SNTC440FD	326.00

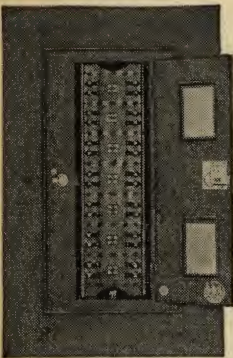
\*For Modified Superba Type with door-in-door front (shown at lower left) add suffix letter "D" and use the price of the corresponding Standard Superba Type Panel.



Modified Superba,  
with Single Door Front



Standard Superba,  
with Doors over Fuses—  
Single Door Front



Modified Superba,  
with Door-in-Door Front



## Bull Dog Superba Lighting Panelboards

CABINET. Box, Code Gage Galvanized Steel—20 Inches Wide, 5½ Inches Deep, 4-Inch Gutters.

Height in Inches Is Indicated by Numerals in Box Numbers.

Front, Code Thickness Steel, Black Finish—Flush Spring Locks.

**Modified Type.** Has the improved features of the Superba design, but is furnished without separate doors over fuses.**Standard Type.** Equipped with separate doors over the fuses of each branch circuit, interlocked with the toggle switches for safety.

Numbers and prices include complete panel (less fuses) and cabinet.

Flush fronts will be furnished unless surface type is specified on order.

## Double Fusing—2/2 Wire

MAINS. 2-Wire 125/250 Volts.

BRANCHES. 2-Wire, 30-Ampere Double Pole Toggle Switch and Fuse.

Plug Fuse Type, 125 Volts; Cartridge Fuse Type, 250 Volts.

Mains: Lugs Only

No. of Cir- cuits	Main Amp.	Box No.	*Modified Superba Type One Door Construction			Standard Superba Type Individual Doors over Fuses		
			Plug Fuse No.	Cartridge Fuse No.	Each	Plug Fuse No.	Cartridge Fuse No.	Each
4	60	W17	TP204L	TC204L	\$73.00	STP204LD	STC204LD	\$94.00
6	100	W20	TP206L	TC206L	86.00	STP206LD	STC206LD	107.00
8	100	W23	TP208L	TC208L	99.00	STP208LD	STC208LD	120.00
10	100	W26	TP210L	TC210L	112.00	STP210LD	STC210LD	133.00
12	200	W29	TP212L	TC212L	125.00	STP212LD	STC212LD	146.00
14	200	W32	TP214L	TC214L	138.00	STP214LD	STC214LD	159.00
16	200	W35	TP216L	TC216L	151.00	STP216LD	STC216LD	172.00
18	200	W38	TP218L	TC218L	164.00	STP218LD	STC218LD	185.00
20	200	W41	TP220L	TC220L	177.00	STP220LD	STC220LD	198.00

Mains: SAFtoFUSE

4	60	W26	TP204F	TC204F	\$95.00	STP204FD	STC204FD	\$116.00
6	100	W29	TP206F	TC206F	129.00	STP206FD	STC206FD	149.00
8	100	W32	TP208F	TC208F	142.00	STP208FD	STC208FD	162.00
10	100	W35	TP210F	TC210F	155.00	STP210FD	STC210FD	175.00
12	200	W44	TP212F	TC212F	221.00	STP212FD	STC212FD	242.00
14	200	W47	TP214F	TC214F	234.00	STP214FD	STC214FD	255.00
16	200	W50	TP216F	TC216F	247.00	STP216FD	STC216FD	268.00
18	200	W53	TP218F	TC218F	260.00	STP218FD	STC218FD	281.00
20	200	W56	TP220F	TC220F	273.00	STP220FD	STC220FD	294.00

## Double Fusing—3/2 Wire

MAINS. 3-Wire, 125/250 Volts.

BRANCHES. 2-Wire, 125-Volt, 30-Ampere Double Pole Toggle Switch and Fuse.

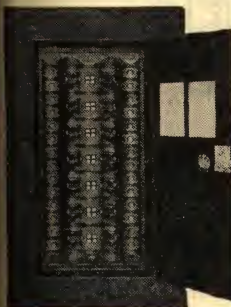
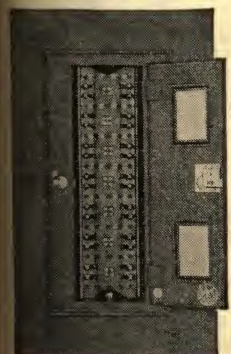
Mains: Lugs Only

No. of Cir- cuits	Main Amp.	Box No.	*Modified Superba Type One Door Construction			Standard Superba Type Individual Doors over Fuses		
			Plug Fuse No.	Cartridge Fuse No.	Each	Plug Fuse No.	Cartridge Fuse No.	Each
4	30	W17	TP304L	TC304L	\$79.00	STP304LD	STC304LD	\$100.00
6	60	W20	TP306L	TC306L	92.00	STP306LD	STC306LD	113.00
8	60	W23	TP308L	TC308L	105.00	STP308LD	STC308LD	126.00
10	60	W26	TP310L	TC310L	118.00	STP310LD	STC310LD	139.00
12	60	W29	TP312L	TC312L	131.00	STP312LD	STC312LD	152.00
14	100	W32	TP314L	TC314L	144.00	STP314LD	STC314LD	165.00
16	100	W35	TP316L	TC316L	157.00	STP316LD	STC316LD	178.00
18	100	W38	TP318L	TC318L	170.00	STP318LD	STC318LD	191.00
20	100	W41	TP320L	TC320L	183.00	STP320LD	STC320LD	204.00

Mains: SAFtoFUSE, Solid Neutral

4	30	W26	TP304F	TC304F	\$94.00	STP304FD	STC304FD	\$114.00
6	60	W29	TP306F	TC306F	107.00	STP306FD	STC306FD	127.00
8	60	W32	TP308F	TC308F	120.00	STP308FD	STC308FD	140.00
10	60	W35	TP310F	TC310F	133.00	STP310FD	STC310FD	153.00
12	60	W38	TP312F	TC312F	146.00	STP312FD	STC312FD	166.00
14	100	W41	TP314F	TC314F	173.00	STP314FD	STC314FD	194.00
16	100	W44	TP316F	TC316F	186.00	STP316FD	STC316FD	207.00
18	100	W47	TP318F	TC318F	199.00	STP318FD	STC318FD	220.00
20	100	W50	TP320F	TC320F	212.00	STP320FD	STC320FD	233.00

\*For Modified Superba Type with door-in-door front (shown at lower left) add suffix letter "D" and use the price of the corresponding Standard Superba Type Panel.

Modified Superba,  
with Single Door FrontStandard Superba,  
with Doors over Fuses—  
Single Door FrontModified Superba,  
with Door-in-Door Front



## Bull Dog Circuit Master Panelboards

Narrow Column Type

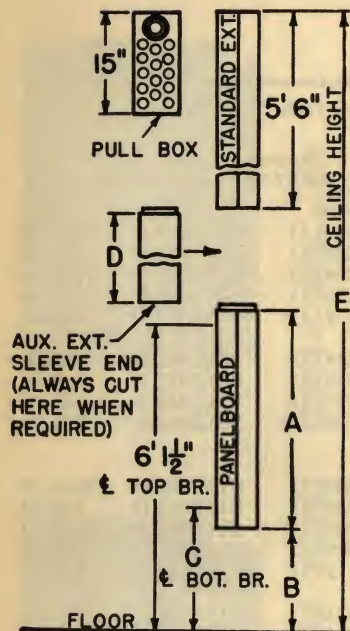
For A.C. Only

## Standard Panel Sizes

Circuit Master column type panels consist of three standard sizes—a maximum 16 circuit size (4 to 16 circuits inclusive), a maximum 24 circuit size (18 to 24 circuits inclusive), and a maximum 32 circuit size (26 to 32 circuits inclusive).

When less than the maximum number of circuits is specified, the unused circuit space is covered with filler plates.

Wireway extension, auxiliary extension, and pull box are optional with this line, as conduits can be run direct to panel if desired.



## Determining Wireway Heights

1. Use height from floor to top of panelboard (A + B) as base.
2. Add height of standard wireway extension (66 inches) when ceiling or truss height does not exceed 12 feet.
3. When ceiling or truss height is 14 feet, add 24-inch auxiliary extension (D) to standard 66-inch extension.
4. When ceiling or truss height is 16 feet, add 48-inch auxiliary extension (D) to standard 66-inch extension.
5. When ceiling or truss height falls between 12 feet and 14 feet or 14 feet and 16 feet, the installer merely cuts from a 24-inch or 48-inch (D) auxiliary extension (sleeve end only) the surplus not required.

Table 1

CIRCUITS	A	B	C	D	E
16	2'	4' 6"	4' 9 1/2"	2'	12'
24	2' 8"	3' 10"	4' 1 1/2"	AND	14'
32	3' 4"	3' 2"	3' 5 1/2"	4'	16'

## Standard Extensions

Panelboards are usually combined with wireway extensions and pull boxes designed to extend up columns.

Such combinations permit free wiring space in the panel, obviate the use of conduits, and lend a streamlined appearance to the finished job.

Standard extensions are 66 inches in length.

One end of the extension is provided with a sleeve that fits snugly over a collar provided at the panelboard top. The opposite end of the extension is closed.

A large rectangular hole near the top of the extension matches with a similar hole cut in the back of the pull box to complete the wireway.



Fig. 1

## Panelboards Only

In the very few instances where extensions and pull boxes are not required, the panelboard includes 16 inches extra space for housing of the neutral strap.

The 16-inches is merely a dimension factor and not a price factor because the price of the panelboard, as listed under its number, includes a neutral located in the 16-inch space or in the pull box.

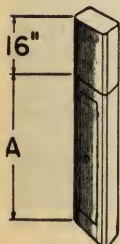


Fig. 3

## Auxiliary Extensions

Auxiliary extensions are short pieces designed to fit between the panelboard (A) and the standard 66-inch extensions where required.

They are available in 24-inch and 48-inch sizes (D).

Each is provided with a sleeve on one end and a collar on the other.

The 24-inch and 48-inch sizes will permit extensions to 14-feet or 16-feet ceiling or truss heights.

For intermediate heights between 12 feet and 14 feet, and 14 feet and 16 feet, the sleeve end only of the auxiliary extensions may be cut down by the customer to the required size.



Fig. 2

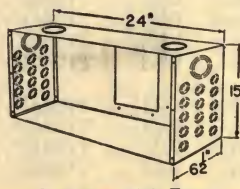
## Pull Boxes

Dimensions are standard (other sizes made to order). Boxes can be furnished with or without conduit knockouts.

Box steel, 14 gage, is used.

The front and ends are flanged and removable, and the ends are interchangeable and reversible for knockout convenience.

The finish is black lacquer.



Pull Box with Front Removed

Continued



## Bull Dog Circuit Master Panelboards

## Narrow Column Type

## For A.C. Only

## Concluded

**Mains:** 3 Wire, 115-230 Volts, Solid Neutral.  
3 Phase 4 Wire, 120-208 Volts, Solid Neutral

**Branches:** 2 Wire, 15 Amperes, 115 Volts, Single Pole, Solid Neutral

Cabinets are code gage steel, surface type with hinged fronts. Dimensions: 8½ inches wide, by 6 inches deep (O.D.). Height in inches is indicated by numerals in box numbers shown in Table 1A.

The boxes (back section of cabinet) are shipped with main wire grips and branch circuit wiring retainers in place, so that wires can be pulled through ready for connection to panel assembly (interior) later.

Neutral is located in pull box, but where no pull box is ordered, neutral is mounted in panel (Fig. 1A, Table 1A). No deduction from panel price, or no addition to pull box price, is made for furnishing neutral in pull box instead of in panel.

Table 1A—Panel and Cabinet Complete with Neutral in 16-Inch End Section

No. Circuits	Single Phase 3 Wire					3 Phase 4 Wire					Approx. Front No. Wt., Lb.	
	Mains Amp.	No.	Each	Box No.	Neutral End Sect. Ht., 16 In.	Mains Amp.	No.	Each	Box No.	Neutral End Sect. Ht., 16 In.		
6	50	NCRB06-3L	\$82.00	CB24	CNE16	50	NCRB06-4L	\$88.00	CB241	CNE16	CC24	50
8	50	NCRB08-3L	94.00	CB24	CNE16	50	NCRB08-4L	100.00	CB241	CNE16	CC24	53
10	50	NCRB10-3L	105.00	CB24	CNE16	50	NCRB10-4L	112.00	CB241	CNE16	CC24	54
12	100	NCRB12-3L	117.00	CB24	CNE16	50	NCRB12-4L	123.00	CB241	CNE16	CC24	55
14	100	NCRB14-3L	129.00	CB24	CNE16	50	NCRB14-4L	135.00	CB241	CNE16	CC24	56
16	100	NCRB16-3L	140.00	CB24	CNE16	100	NCRB16-4L	147.00	CB241	CNE16	CC24	57
18	100	NCRB18-3L	152.00	CB32	CNE32	100	NCRB18-4L	159.00	CB321	CNE32	CC32	60
20	100	NCRB20-3L	164.00	CB32	CNE32	100	NCRB20-4L	170.00	CB321	CNE32	CC32	61
22	200	NCRB22-3L	175.00	CB322	CNE322	100	NCRB22-4L	182.00	CB321	CNE32	CC32	62
24	200	NCRB24-3L	187.00	CB322	CNE322	100	NCRB24-4L	194.00	CB321	CNE32	CC32	63
26	200	NCRB26-3L	199.00	CB402	CNE322	100	NCRB26-4L	205.00	CB401	CNE32	CC40	67
28	200	NCRB28-3L	211.00	CB402	CNE322	100	NCRB28-4L	217.00	CB401	CNE32	CC40	68
30	200	NCRB30-3L	222.00	CB402	CNE322	100	NCRB30-4L	229.00	CB401	CNE32	CC40	69
32	200	NCRB32-3L	234.00	CB402	CNE322	200	NCRB32-4L	240.00	CB4012	CNE322	CC40	70

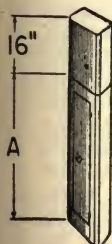
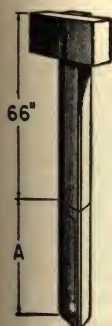


Table 2A—Panel and Cabinet with 66-Inch Extension (No. NCX66) and Pull Box With Neutral Bar (No. NCB1524 or NCB1524-1)

In This Assembly the 16-Inch Neutral End Section (Fig. 1A) is Omitted

No. Circuits	Single Phase 3 Wire			3 Phase 4 Wire			Total Height Inches	Approx. Weight Pounds
	Mains Amp.	No.	Each	Mains Amp.	No.	Each		
6	50	NCRB06-3LXB	\$130.00	50	NCRB06-4LXB	\$136.00	90	100
8	50	NCRB08-3LXB	142.00	50	NCRB08-4LXB	148.00	90	103
10	50	NCRB10-3LXB	153.00	50	NCRB10-4LXB	160.00	90	104
12	100	NCRB12-3LXB	165.00	50	NCRB12-4LXB	171.00	90	105
14	100	NCRB14-3LXB	177.00	50	NCRB14-4LXB	183.00	90	106
16	100	NCRB16-3LXB	188.00	100	NCRB16-4LXB	195.00	90	107
18	100	NCRB18-3LXB	200.00	100	NCRB18-4LXB	207.00	98	110
20	100	NCRB20-3LXB	212.00	100	NCRB20-4LXB	218.00	98	111
22	200	NCRB22-3LXB	223.00	100	NCRB22-4LXB	230.00	98	112
24	200	NCRB24-3LXB	235.00	100	NCRB24-4LXB	242.00	98	113
26	200	NCRB26-3LXB	247.00	100	NCRB26-4LXB	253.00	106	117
28	200	NCRB28-3LXB	259.00	100	NCRB28-4LXB	265.00	106	118
30	200	NCRB30-3LXB	270.00	100	NCRB30-4LXB	277.00	106	119
32	200	NCRB32-3LXB	282.00	200	NCRB32-4LXB	288.00	106	120



## Wireway Extensions

No. NCX24 24-Inch Plain Extension (Fig. 2, Dimension D); Weight, 18 Pounds. each \$22.00

No. NCX48 48-Inch Plain Extension (Fig. 2, Dimension D); Weight, 26 Pounds. each 24.00

These plain extensions are used where ceiling height exceeds 12 feet. Add to prices of Table 2A.

No. NCX66 66-Inch Upper Extension with Opening for Pull Box; as Provided with and Included in Price of NCRB-LXB Assemblies Listed in Table 2A Above—For Ceiling Heights not Exceeding 12 Feet; Weight, 35 Pounds.....each \$29.00

## Pull Box

Dimensions: 15 inches high by 24 inches wide by 6½ inches deep.

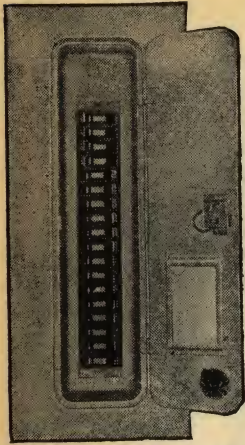
Knockouts: Top—2 concentric knockouts for 2, 2½, and 3-inch conduit. Ends—1 concentric knockout for 2, 2½, and 3-inch conduit and 14 for ½, ¾, and 1-inch conduit. Front and Bottom—plain; no knockouts. Back—12x6-inch opening.

The pull box, including neutral bar, is supplied as provided with and included in price of NCRB-LXB assemblies listed in Table 2A above.

No. NCB1524 Pull Box—With 100 Ampere Neutral; Weight, 10 Pounds.....each \$19.00

No. NCB1524-1 Pull Box—With 200 Ampere Neutral; Weight, 10 Pounds.....each 19.00





## Bull Dog Circuit Master Panelboards

For A.C. Only  
Single Row Type

Listed by Underwriters' Laboratories

Mains: 3 Wire, 115-230 Volts, Solid Neutral

3 Phase 4 Wire, 120-208 Volts, Solid Neutral

Branches: 2 Wire, \*15 Amperes, 115 Volts, Single Pole, Solid Neutral

CM Boxes are 10½ inches wide by 4¼ inches deep (I.D.) with 3-inch wiring gutters. X Boxes are 15½ by 4½ inches (I.D.), 4-inch wiring gutters. Height in inches is indicated by numerals in box number.

Fronts are of code thickness steel, black finish, with flush spring locks. Flush fronts are furnished unless surface type is ordered.

Numbers and prices include complete panel and cabinet.

### Mains: Solderless Wire Grips

1 Phase 3 Wire Solid Neutral				3 Phase 4 Wire Solid Neutral			
No. Cir. Mains cuts Amp.	No.	Each	Box No.	Mains Amp.	No.	Each	Box No.
4	50 NR1B04-3L	\$65.00	CM15	50	NR1B06-4L	\$81.00	CM15
6	50 NR1B06-3L	74.00	CM15	50	NR1B08-4L	90.00	CM15
8	50 NR1B08-3L	83.00	CM15	50	NR1B10-4L	99.00	CM20
10	50 NR1B10-3L	92.00	CM20	50	NR1B12-4L	108.00	CM20
12	100 NR1B12-3L	101.00	CM20	50	NR1B14-4L	117.00	CM24
14	100 NR1B14-3L	110.00	CM24	100	NR1B16-4L	126.00	CM24
16	100 NR1B16-3L	120.00	CM24	100	NR1B18-4L	135.00	CM28
18	100 NR1B18-3L	129.00	CM28	100	NR1B20-4L	143.00	CM34
20	100 NR1B20-3L	138.00	CM34	100	NR1B22-4L	153.00	CM34
22	200 NR1B22-3L	147.00	X38	100	NR1B24-4L	162.00	CM34
24	200 NR1B24-3L	156.00	X38	100	NR1B26-4L	172.00	CM40
26	200 NR1B26-3L	165.00	X44	100	NR1B28-4L	181.00	CM40
28	200 NR1B28-3L	174.00	X44	100	NR1B30-4L	190.00	CM44
30	200 NR1B30-3L	183.00	X44	200	NR1B32-4L	199.00	X44
32	200 NR1B32-3L	192.00	X44				

Additions for Increased Mains. amp. 50-100

2 Ungrounded Poles. \$13.00

3 Ungrounded Poles. 13.00

When space only for future circuits is required, figure on basis of total number of circuits and deduct \$1.50 for each breaker pole omitted.

For panels having combination of 1 and 2 pole branches all fed from same bus and under one door, determine total number of poles in branches. Use price of a listed panel having equivalent number of 1 pole breakers and add \$1.50 for each 2 pole branch. All 2 pole branch breakers have separate trip.

Type NR1B panels may contain only a certain proportion of 2 pole circuits, as indicated below.

Total 1 Pole Circuits	Comb. 1 Pole Circuits	Total 1 Pole Circuits	Comb. 1 Pole Circuits	Total 1 Pole Circuits	Comb. 1 Pole Circuits	Total 1 Pole Circuits	Comb. 1 Pole Circuits	Total 1 Pole Circuits	Comb. 1 Pole Circuits
4	1 2	10	3 4	16	5 6	22	6 10	28	8 12
6	2 2	12	4 4	18	5 8	24	7 10	30	8 14
8	3 2	14	4 6	20	6 8	26	7 12	32	9 14

### Box Knockouts—Conduit Sizes

Data subject to change if new standards are adopted.

Box No.	Both Ends of Box	Both Sides of Box	Back of Box (Top and Bottom)
CM15	Ten—1/2-3/4 One—1/2-3/4-1-1 1/4	Four—1/2-3/4 One—1/2-3/4-1-1 1/4	One—1/2-3/4-1-1 1/4
CM20	Ten—1/2-3/4 One—1/2-3/4-1-1 1/4	Six—1/2-3/4 One—1/2-3/4-1-1 1/4	One—1/2-3/4-1-1 1/4
CM24	Ten—1/2-3/4 One—1/2-3/4-1-1 1/4	Eight—1/2-3/4 One—1/2-3/4-1-1 1/4	One—1/2-3/4-1-1 1/4
CM28	Ten—1/2-3/4 One—1/2-3/4-1-1 1/4	Eight—1/2-3/4	
CM34	Six—1/2		
CM40	Four—3/4	Eight—3/4	
CM44	One—1 1/2	Eight—1 1/2	

\*20, 25, 35, or 50 Ampere single pole breakers can be supplied at same price except where additions must be made when increased mains are necessary.

## Bull Dog Circuit Master Panelboards

For A.C. Only

Two Row Type

Listed by Underwriters' Laboratories

Mains: 3 Wire, 115-230 Volts, Solid Neutral

3 Phase 4 Wire, 120-208 Volts, Solid Neutral

Branches: 2 Wire, \*15 Amperes, 115 Volts, Single Pole Solid Neutral

Boxes are code gage galvanized steel, with standard W Box knockouts; size, 20 inches wide x 5½ inches deep (I.D.), equipped with 4-inch wiring gutters. Height in inches is indicated by numerals in box numbers.

Fronts are of code thickness steel, black finish, with flush spring locks. Flush fronts are furnished unless surface type is ordered.

Numbers and prices include complete panel and cabinet.

### Mains: Solderless Wire Grips

1 Phase 3 Wire Solid Neutral				3 Phase 4 Wire Solid Neutral			
No. Cir. Mains cuts Amp.	No.	Each	Box No.	Mains Amp.	No.	Each	Box No.
4	50 NR1B04-3L	\$70.00	W14	32	50 NR1B06-4L	\$88.00	W17
6	50 NR1B06-3L	82.00	W17	39	50 NR1B08-4L	100.00	W17
8	50 NR1B08-3L	94.00	W17	40	50 NR1B10-4L	112.00	W17
10	50 NR1B10-3L	105.00	W17	41	50 NR1B12-4L	123.00	W20
12	100 NR1B12-3L	117.00	W20	48	50 NR1B14-4L	135.00	W20
14	100 NR1B14-3L	129.00	W20	49	50 NR1B16-4L	147.00	W20
16	100 NR1B16-3L	140.00	W20	50	100 NR1B18-4L	159.00	W23
18	100 NR1B18-3L	152.00	W23	56	100 NR1B20-4L	170.00	W23
20	100 NR1B20-3L	164.00	W23	57	100 NR1B22-4L	182.00	W23
22	200 NR1B22-3L	175.00	W23	58	100 NR1B24-4L	194.00	W26
24	200 NR1B24-3L	187.00	W26	66	100 NR1B26-4L	205.00	W26
26	200 NR1B26-3L	199.00	W26	67	100 NR1B28-4L	217.00	W26
28	200 NR1B28-3L	211.00	W26	68	100 NR1B30-4L	229.00	W29
30	200 NR1B30-3L	222.00	W29	75	100 NR1B32-4L	240.00	W29
32	200 NR1B32-3L	234.00	W29	76	200 NR1B34-4L	252.00	W32
34	200 NR1B34-3L	246.00	W32	82	200 NR1B36-4L	264.00	W32
36	200 NR1B36-3L	257.00	W32	83	200 NR1B38-4L	276.00	W35
38	200 NR1B38-3L	269.00	W35	90	200 NR1B40-4L	287.00	W35
40	200 NR1B40-3L	281.00	W35	91	200 NR1B42-4L	299.00	W35
42	200 NR1B42-3L	292.00	W35	92			

### Mains: Automatic Circuit Breaker

4	50 NR1B04-3AB	\$84.00	W26	54	50 NR1B06-4AB	110.00	W29
6	50 NR1B06-3AB	96.00	W29	59	50 NR1B08-4AB	122.00	W29
8	50 NR1B08-3AB	108.00	W29	60	50 NR1B10-4AB	134.00	W29
10	50 NR1B10-3AB	120.00	W29	61	50 NR1B12-4AB	146.00	W32
12	100 NR1B12-3AB	157.00	W32	73	50 NR1B14-4AB	157.00	W32
14	100 NR1B14-3AB	169.00	W32	74	50 NR1B16-4AB	169.00	W32
16	100 NR1B16-3AB	181.00	W32	75	100 NR1B18-4AB	199.00	W32
18	100 NR1B18-3AB	192.00	W35	82	100 NR1B20-4AB	211.00	W35
20	100 NR1B20-3AB	204.00	W35	83	100 NR1B22-4AB	222.00	W35
22	200 NR1B22-3AB	317.00	W41	104	100 NR1B24-4AB	234.00	W38
24	200 NR1B24-3AB	329.00	W44	110	100 NR1B26-4AB	246.00	W38
26	200 NR1B26-3AB	341.00	W44	112	100 NR1B28-4AB	257.00	W38
28	200 NR1B28-3AB	352.00	W44	113	100 NR1B30-4AB	269.00	W38
30	200 NR1B30-3AB	364.00	W47	122	100 NR1B32-4AB	281.00	W41
32	200 NR1B32-3AB	376.00	W47	130	200 NR1B34-4AB	292.00	W41
34	200 NR1B34-3AB	387.00	W50	142	200 NR1B36-4AB	303.00	W41
36	200 NR1B36-3AB	399.00	W50	143	200 NR1B38-4AB	314.00	W41
38	200 NR1B38-3AB	411.00	W53	151	200 NR1B40-4AB	325.00	W41
40	200 NR1B40-3AB	422.00	W53	152	200 NR1B42-4AB	336.00	W41
42	200 NR1B42-3AB	434.00	W53	153			

Additions for Increased Mains. amp. 50-100 50-200 100-200

2 Ungrounded Poles—Lugs Only. \$13.00 \$13.00 \$13.00

2 Pole Breaker. 32.00 125.00 108.00

Add to Box Height. inches 6 6 6

3 Ungrounded Poles—Lugs Only. \$13.00 \$13.00 \$13.00

2 Pole Breaker. 36.00 159.00 129.00

Add to Box Height. inches 6 6 6

When space only for future circuits is required, figure on basis of total number of circuits and deduct \$1.00 for each breaker pole omitted.

For panels having combination of 1 and 2 pole branches all fed from same bus and under one door, determine total number of poles in branches. Use price of a listed panel having the equivalent number of 1 pole breakers and add \$1.00 for each 2 pole branch. All 2 pole branch breakers have separate trip. Main breakers (2 and 3 pole) have common trip.



## FA Service Equipment

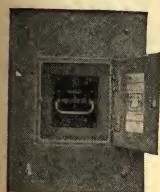
## Pulfuzsw Type

**BASES.** Made of Sections of Moulded Material Assembled Directly into the Box for Surface Mounting; and Assembled onto a Mounting Back for Flush Mounting to Allow for Adjustments.

**MAINS.** Pulfuzsw Units, 30, 60 and 100-Ampere 2-Pole with Bonded Solid Neutral for Single Phase 120/240-Volt 3-Wire Service. Three-Pole with Solid Neutral for 120/208 4-Wire 3-Phase Service.

**BOX.** Code Thickness Galvanized Steel.

**FRONT.** Code Thickness Furniture Steel, Rust-Proof, and Pearl Gray Finish. Ring catch on Door.



No. SEPF332NF



No. SEPF632NR

## Pulfuzswitch Units Only—With Solid Neutral

Service Switch Capacity Amperes	No. of Poles	INSIDE BOX DIMENSIONS INCHES			Standard Package	Approx. Wt., Lb. Std. Pkg.	Flush Mounting		Surface Mounting	
		Width	Height	Depth			No.	Each	No.	Each
30	2	4½	7	3	6	30	SEPF332NF	\$9.00	SEPF332NS	\$8.00
30	3	7½	8	3	6	45	SEPF333NF	12.00	SEPF333NS	11.00
60	2	7½	9	3⅝	6	50	SEPF632NF	11.00	SEPF632NS	10.00
60	3	7½	12	3⅝	4	45	SEPF633NF	14.00	SEPF633NS	13.00
100	2	9½	16½	4¾	2	40	SEPF1032NF	32.00	SEPF1032NS	31.00
100	3	12	16½	4¾	2	50	SEPF1033NF	44.00	SEPF1033NS	43.00

## Raintite Units

30	2	4½	7	3	7	50	.....	.....	SEPF332NR	\$13.50
30	3	4½	7	3	7	50	.....	.....	SEPF333NR	15.00
60	2	5	10	3½	7	56	.....	.....	SEPF632NR	13.50
60	3	6½	10	3½	7	56	.....	.....	SEPF633NR	16.50
100	2	7½	18	4¾	5	60	.....	.....	SEPF1032NR	39.50
100	3	10	18	4¾	5	60	.....	.....	SEPF1033NR	48.50

\*Raintite units furnished standard with 1½-inch hub in top only. For 1½-inch hub add \$1.50 to price.

## Sequence: Meter—Switch—Fuse

## Pulfuzsw Type

**BASES.** Made of Sections of Moulded Material Assembled on a Mounting Back.

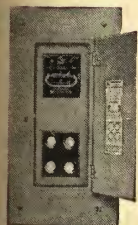
**MAINS.** Pulfuzswitch Units, 60-Ampere 2-Pole 120/240-Volt, with Bonded Solid Neutral. Series and Parallel Connection for Main Feeder.

**EXTENDED FEEDER.** Two-Pole Pressure Connectors on Bus Bar Between Main Switch and Branch Sections, with Solid Neutral Connection.

**BRANCHES.** Single Pole Plug Fuse Connections for 15 (or 20) Amperes 120-Volt 2-Wire Solid Neutral Branches.

**BOX.** Code Thickness Galvanized Steel.

**FRONT.** Code Thickness Furniture Steel, Rust-Proof and Pearl Gray Finish. Flush or Surface Mounting. Ring Catch on Door.



No. SEPF63-4F

## Main Connection 30 and 60-Ampere Pulfuzsw for Plug Fuse Branches and Extended Feeder Connection

Service Switch Capacity Amperes	Extended Feeder	No. of BRANCHES 15 Amp. 60 Amp.	INSIDE BOX DIMENSIONS INCHES			Std. Pkg.	Wt., Lb. Std. Pkg.	Flush Mounting		Surface Mounting	
			Width	Height	Depth			No.	Each	No.	Each
60	1	4	7½	14	3⅝	4	65	SEPF63-4F	\$13.00	SEPF63-4S	\$12.00
60	1	6	7½	17	3⅝	4	70	SEPF63-6F	18.00	SEPF63-6S	17.00
60	1	8	7½	17	3⅝	3	55	SEPF63-8F	23.00	SEPF63-8S	22.00
60	1	10	7½	20	3⅝	4	45	SEPF63-10F	28.00	SEPF63-10S	27.00
60	1	12	7½	20	3⅝	2	50	SEPF63-12F	34.00	SEPF63-12S	33.00

## Series Main Connection to 60-Ampere Pulfuzsw with Extended Feeder Connection and Plug Fuse Branches; and 1—60-Ampere 3-Wire, Branch for Range Subfeeder

60	1	4	1	7½	20	3⅝	3	60	SEPF63S-354F	\$17.00	SEPF63S-354S	\$16.00
60	1	6	1	7½	23	3⅝	2	50	SEPF63S-356F	20.00	SEPF63S-356S	19.00
60	1	8	1	7½	23	3⅝	2	50	SEPF63S-358F	25.00	SEPF63S-358S	24.00

## 100-Ampere Parallel Main Connection to 60-Ampere Pulfuzsw with Extended Feeder Connection to the Plug Fuse Branches; and 1—60-Ampere 3-Wire Branch for Range or Subfeeder

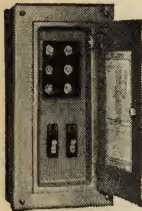
60	1	4	1	9	22	3⅝	3	56	SEPF63P-354F	\$18.00	SEPF63P-354S	\$17.00
60	1	6	1	9	24	3⅝	2	52	SEPF63P-356F	22.00	SEPF63P-356S	21.00
60	1	8	1	9	24	3⅝	2	52	SEPF63P-358F	26.00	SEPF63P-358S	25.00
60	1	10	1	9	26	3⅝	2	58	SEPF63P-3510F	32.00	SEPF63P-3510S	31.00

No. SEPF63P-354F



## Type CBF FA Service Equipment

## Sequence: Meter—Circuit Breaker



No. SE50B3-6S

**BASES.****MAIN CONNECTIONS.****MAIN CIRCUIT.****EXTENDED FEEDER CONNECTIONS.****LIGHTING BRANCHES.****BOX.****FRONT.**

Made of Sections of Moulded Material Assembled on a Mounting Back.

For 2 or 3-Wire Single Phase with Bonded Solid Neutral Connector for Extended Feeder, and Branch Circuits.

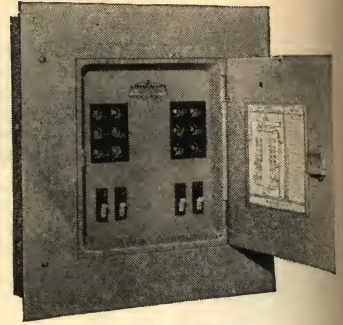
Single Pole A.C. Type Circuit Breaker for Each Single Row of Plug Fuse Branches.

Pressure Connectors on Bus Bar, Between Main Circuit Breakers and Plug Fuse Sections.

Single Pole Plug Fuse Branch Connections for 15 or 20-Ampere 120-Volt, 2-Wire Solid Neutral Circuits.

Code Thickness Galvanized Steel.

Code Thickness Furniture Steel with Dead Front. Bonderited and Pearl Gray Finish. Flush or Surface Mounting. Ring Catch on Door.



No. SE250B3-12F

## Main Connection: 1—35-Ampere Single Pole Circuit Breaker

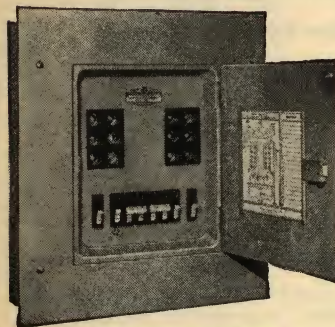
No. of Branches	Main Circuit Breaker Amperes	Extended Feeder	INSIDE BOX DIMENSIONS, INCHES			Standard Package	Approx. Wt., Lb. Std. Pkg.	Flush Mounting		Surface Mounting	
			Width	Height	Depth			No.	Each	No.	Each
4	35	.	7½	14	3⅝	6	48	SE35B2-4F	\$12.00	SE35B2-4S	\$11.00

## Main Connection: 2—50-Ampere Single Pole Circuit Breakers

4	50	1	7½	14	3⅝	4	44	SE50B3-4F	\$14.00	SE50B3-4S	\$13.00
6	50	1	7½	15½	3⅝	4	48	SE50B3-6F	16.00	SE50B3-6S	15.00
8	50	1	7½	17	3⅝	4	56	SE50B3-8F	20.00	SE50B3-8S	19.00
10	50	1	7½	20	3⅝	4	60	SE50B3-10F	22.00	SE50B3-10S	21.00

100-Ampere Main Connection in Parallel to Each 50-Ampere Single Pole Circuit Breaker  
Connecting Lighting Branches

8	50	1	19	21½	4¾	1	38	SE250B3-8F	\$50.00	SE250B3-8S	\$49.00
12	50	1	19	21½	4¾	1	40	SE250B3-12F	54.00	SE250B3-12S	53.00
16	50	1	19	24½	4¾	1	44	SE250B3-16F	58.00	SE250B3-16S	57.00
20	50	1	19	24½	4¾	1	48	SE250B3-20F	62.00	SE250B3-20S	61.00



No. SE250B3-235B12F

## Sequence: Meter—Circuit Breaker

**BASES.****MAIN CONNECTIONS.****EXTENDED FEEDER CONNECTIONS.****SUBFEEDER CONNECTOR.****LIGHTING BRANCHES.****BOX.****FRONT.**

Made of Sections of Moulded Material Assembled on a Mounting Back. For 3-Wire Single Phase with Bonded Solid Neutral Connector for Line, Extended Feeder, Subfeeder and Branch Circuits.

Pressure Connectors on Bus Bar Between Main Circuit Breakers and Plug Fuse Sections.

2 to 20 Branch Units, Furnished with a Pair of 35-Ampere Single Pole Type Circuit Breakers. When One or Two Subfeeder Connections are Furnished with 8 to 20 Branch Units, 35-Ampere 2-Pole Individual Trip Circuit Breakers with Red Trip Indicators are Furnished.

Single Pole Plug Fuse Branch Connections for 15 or 20-Ampere, 120-Volt, 2-Wire Solid Neutral Circuits.

Code Thickness Galvanized Steel.

Code Thickness Furniture Steel with Dead Front. Bonderited and Pearl Gray Finish. Flush or Surface Mounting. Ring Catch on Door.

100-Ampere Main Connection in Parallel to Each 50-Ampere Single Pole Circuit Breaker Connected to the Lighting Branches,  
and 2 Single Pole A.C. Type Circuit Breakers for Subfeeder

No. of Branches	Main Circuit Breaker Amperes	Extended Feeder	INSIDE BOX DIMENSIONS, INCHES			Standard Package	Approx. Wt., Lb. Std. Pkg.	Flush Mounting		Surface Mounting	
			Width	Height	Depth			No.	Each	No.	Each
4	1	50	9	18	3⅝	3	40	SE50B3-35B4F	\$24.00	SE50B3-35B4S	\$23.00
6	1	50	9	18	3⅝	3	45	SE50B3-35B6F	26.00	SE50B3-35B6S	25.00
8	1	50	9	20	3⅝	3	60	SE50B3-35B8F	28.00	SE50B3-35B8S	27.00
10	1	50	9	20	3⅝	2	44	SE50B3-35B10F	30.00	SE50B3-35B10S	29.00

100-Ampere Main Connection in Parallel to Each 50-Ampere Single Pole Circuit Breaker Connected to the Lighting Branches;  
and 1—35-Ampere 2-Pole Individual Trip Circuit Breaker for Subfeeder

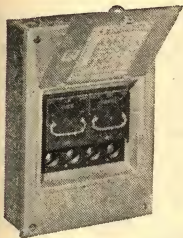
8	1	50	1	19	21½	4¾	1	40	SE250B3-35B8F	\$58.00	SE250B3-35B8S	\$57.00
12	1	50	1	19	21½	4¾	1	40	SE250B3-35B12F	62.00	SE250B3-35B12S	61.00
16	1	50	1	19	24½	4¾	1	46	SE250B3-35B16F	66.00	SE250B3-35B16S	65.00
20	1	50	1	19	24½	4¾	1	50	SE250B3-35B20F	70.00	SE250B3-35B20S	69.00

100-Ampere Main Connection in Parallel to Each 50-Ampere Single Pole Circuit Breaker Connected to the Lighting Branches;  
and 2—35-Ampere 2-Pole Individual Trip Circuit Breaker for Subfeeders

8	2	50	1	19	21½	4¾	1	40	SE250B3-235B8F	\$66.00	SE250B3-235B8S	\$65.00
12	2	50	1	19	21½	4¾	1	40	SE250B3-235B12F	70.00	SE250B3-235B12S	69.00
16	2	50	1	19	24½	4¾	1	46	SE250B3-235B16F	74.00	SE250B3-235B16S	73.00
20	2	50	1	19	24½	4¾	1	50	SE250B3-235B20F	78.00	SE250B3-235B20S	77.00



**FA Service Equipment**  
**MR Type—Main and Range Combination**  
**Sequence: Meter—Switch—Fuse**



No. SEMR4-S60, Surface

Designed to meet modern requirements for homes having electric ranges, water heaters or other heavy capacity appliances. Small and compact, its specifications were dictated by Electrical Contractors and Wholesalers in conformity to the recommendations and requirements of Underwriters' Laboratories, Inc., and Utilities throughout the country.

Made in two capacities: In the 60-ampere main capacity Series type, the main Pulfuzswitch unit controls the four lighting branch circuits, sub-feed lugs, and the range unit.

In the 60 and 100-ampere main capacity Parallel type, the main Pulfuzswitch unit controls the lighting branch circuits and sub-feed lugs only; the range circuit is connected in parallel ahead of the main switch.

No.	60-Ampere Series Main Connection	Each	No.	60-Ampere Parallel Main Connections	Each
SEMR4-S60S (Surface)		\$12.00	SEMR4-P60S (Surface)		\$13.00
SEMR4-S60F (Flush)		13.00	SEMR4-P60F (Flush)		14.00
SEMR4-S60R (*Raintite)		19.50	SEMR4-P60R (*Raintite)		20.50
No.	100-Ampere Parallel Main Connection	Each			
SEMR4-P100S (Surface)		\$14.00			
SEMR4-P100F (Flush)		15.00			
SEMR4-P100R (*Raintite)		21.50			

\*Raintite units are furnished standard with 1¼-inch hub in top only.  
 For 1½-inch hubs, add \$1.00 to prices.

**FA Enclosed Cutouts and Panelboards**  
**For Residences and Small Installations**  
**One Fuse—Solid Neutral**  
**Safety Type**

**BASES.**  
**MAIN**  
**CONNECTIONS.**  
**BRANCHES.**  
**BOX.**  
**FRONT.**

Made of Sections of Moulded Material.  
 Lugs Only; 2-Wire 120-Volt and 3-Wire 120/240-Volt, with Insulated Solid Neutral Connection.  
 Single Pole Plug Fuse Branches for 15-Ampere 120-Volt, 2-Wire Solid Neutral Circuits.  
 Code Thickness Galvanized Steel: 2 to 12 Branches 1½-Inch Gutters; 14 to 20 Branches 3-Inch Gutters Top and Bottom, 2½-Inch Gutters at Side.  
 Code Thickness Furniture Steel, Rust-Proof, and Pearl Gray Finish. Flush and Surface Mounting. Ring Catch on Door.

**Enclosed Cutouts**  
**2-Wire Main Connection**

No. of Branches	Main Bus Bar Amperes	INSIDE BOX DIMENSIONS, INCHES			Standard Package	Approx. Weight Pounds Standard Package	Flush Mounting No.	Surface Mounting No.	Each
		Width	Height	Depth					
2	30	4½	7	3	10	50	R2-2F	R2-2S	\$4.00
3	30	4½	7	3	10	50	R2-3F	R2-3S	4.50
<b>2 or 3-Wire Main Connection</b>									
4	30	4½	7	3	10	50	R23-4F	R23-4S	\$5.00
<b>3-Wire Main Connection</b>									
4	30	7½	8	3	10	50	R3-4F	R3-4S	\$6.00
6	42	7½	9½	3	6	48	R3-6F	R3-6S	8.00
8	60	7½	14	3	4	44	R3-8F	R3-8S	10.00
10	60	7½	15½	3	4	56	R3-10F	R3-10S	15.00
12	60	7½	17	3	4	68	R3-12F	R3-12S	20.00



No. R23-4F

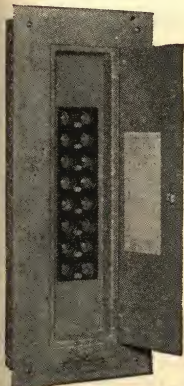
**Panelboards**  
**3-Wire Main Connection**

No. of Branches	Main Bus Bar Amperes	INSIDE BOX DIMENSIONS, INCHES			Standard Package	Approx. Weight Pounds Standard Package	Flush Mounting No.	Surface Mounting No.	Each
		Width	Height	Depth					
14	100	9	22	3⅝	2	40	R3-14F	R3-14S	\$31.00
16	100	9	24	3⅝	2	46	R3-16F	R3-16S	33.00
18	100	9	26	3⅝	2	52	R3-18F	R3-18S	36.00
20	100	9	28	3⅝	2	58	R3-20F	R3-20S	38.00

**NR3G Panelboards**

Specifications as above except box has 3-inch gutters and door has catch lock.

4	60	12	13½	4	20	NR3G04F	NR3G04S	\$31.00
8	60	12	16½	4	25	NR3G08F	NR3G08S	36.00
12	60	12	19½	4	35	NR3G12F	NR3G12S	42.00
16	100	12	25½	4	45	NR3G16F	NR3G16S	47.00
20	100	12	28½	4	50	NR3G20F	NR3G20S	52.00



No. R3-16F



## FA Safety Type Panelboards and Cabinets

## Type N1P-3 and Type N1P-4—One Fuse

## Type N1P-3

**PANELBOARD.** Made of Sections of Moulded Material.  
**BRANCHES.** 30 Amp., S.P., N.E.C. Plug Type Fuse Connections Only for 15 Amp., 125 V., 2-Wire, Solid Neutral Circuits.  
**MAINS.** 3-Wire, 125-250 V., Solid Neutral.  
**BOX.** Code Thickness Galvanized Steel, 4-Inch Gutters.  
**FRONT.** Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.

## Type N1P-4

**PANELBOARD.** Made of Sections of Moulded Material.  
**BRANCHES.** 30 Amp., S.P., N.E.C. Plug Type Fuse Connections Only for 15 Amp., 120 V., 3-Wire, Solid Neutral Circuits.  
**MAINS.** 3-Phase, 4-Wire, 120-208 V., Solid Neutral.  
**BOX.** Code Thickness Galvanized Steel, 4-Inch Gutters.  
**FRONT.** Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.

## Type N1P-3 Main Cable Lugs Only—Solid Neutral

No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
8	60	19	18 $\frac{1}{2}$	4 $\frac{3}{4}$	65	N1P08-3L06	\$62.00
16	100	19	21 $\frac{1}{2}$	4 $\frac{3}{4}$	85	N1P16-3L10	78.00
24	200	19	27 $\frac{1}{2}$	4 $\frac{3}{4}$	105	N1P24-3L20	94.00
32	200	19	33 $\frac{1}{2}$	4 $\frac{3}{4}$	115	N1P32-3L20	109.00
40	200	19	36 $\frac{1}{2}$	4 $\frac{3}{4}$	165	N1P40-3L20	125.00

## Type N1P-4 Main Cable Lugs Only—Solid Neutral

No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
8	60	19	18 $\frac{1}{2}$	4 $\frac{3}{4}$	75	N1P08-4L06	\$69.00
16	60	19	24 $\frac{1}{2}$	4 $\frac{3}{4}$	105	N1P16-4L06	74.00
24	100	19	27 $\frac{1}{2}$	4 $\frac{3}{4}$	115	N1P24-4L10	100.00
32	200	19	30 $\frac{1}{2}$	4 $\frac{3}{4}$	135	N1P32-4L20	116.00
40	200	19	36 $\frac{1}{2}$	4 $\frac{3}{4}$	165	N1P40-4L20	131.00

## Type N1P-3 Pulfuzswitch Safety Type Main Disconnect—Solid Neutral

No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
8	60	19	24 $\frac{1}{2}$	4 $\frac{3}{4}$	90	N1P08-3PF06	\$72.00
16	60	19	33 $\frac{1}{2}$	4 $\frac{3}{4}$	125	N1P16-3PF10	100.00

## Type N1P-4 Pulfuzswitch Safety Type Main Disconnect—Solid Neutral

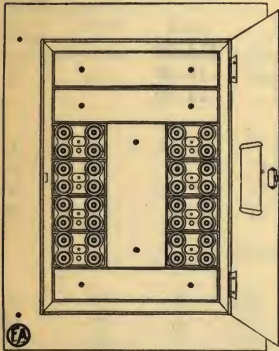
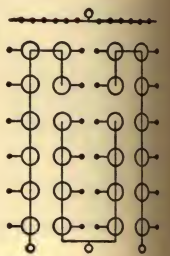
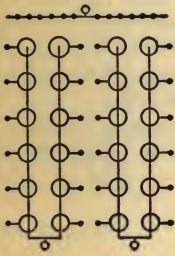
No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
8	60	19	21 $\frac{1}{2}$	4 $\frac{3}{4}$	90	N1P08-4PF06	\$83.00
16	60	19	27 $\frac{1}{2}$	4 $\frac{3}{4}$	100	N1P16-4PF06	99.00
24	100	19	36 $\frac{1}{2}$	4 $\frac{3}{4}$	125	N1P24-4PF06	133.00

## Type N1P-4 Klampswfuz Safety Type Hinged Pull-Out Main Disconnect—Solid Neutral

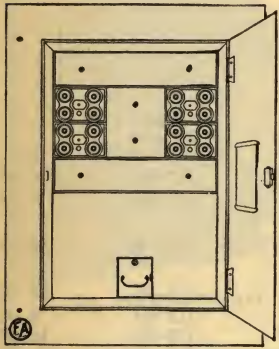
No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
8	60	19	33 $\frac{1}{2}$	4 $\frac{3}{4}$	115	N1P08-3KSF06	\$77.00
16	100	19	39 $\frac{1}{2}$	4 $\frac{3}{4}$	155	N1P16-3KSF10	107.00
24	200	19	45 $\frac{1}{2}$	7	205	N1P24-3KSF20	159.00
32	200	19	51 $\frac{1}{2}$	7	215	N1P32-3KSF20	174.00
40	200	19	54 $\frac{1}{2}$	7	225	N1P40-3KSF20	190.00

## Type N1P-4 Klampswfuz Safety Type Hinged Pull-Out Main Disconnect—Solid Neutral

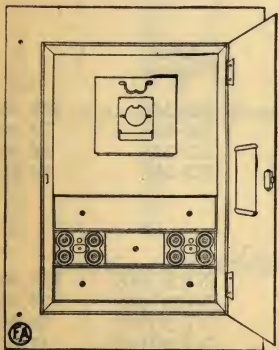
No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
8	60	19	33 $\frac{1}{2}$	4 $\frac{3}{4}$	115	N1P08-4KSF06	\$91.00
16	60	19	36 $\frac{1}{2}$	4 $\frac{3}{4}$	140	N1P16-4KSF06	107.00
24	100	19	42 $\frac{1}{2}$	4 $\frac{3}{4}$	165	N1P24-4KSF10	143.00
32	200	19	48 $\frac{1}{2}$	7	215	N1P32-4KSF20	212.00
40	200	19	54 $\frac{1}{2}$	7	225	N1P40-4KSF20	227.00



Type N1P-3L and Type N1P-4L



Type N1P-3PF and Type N1P-4PF

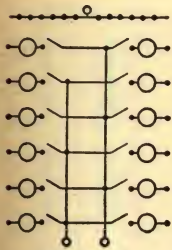


Type N1P-3KSF and Type N1P-4KSF



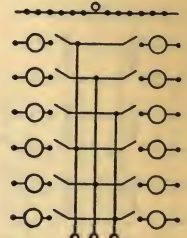
## FA Safety Type Panelboards and Cabinets

## Type LNT1P-3 and Type LNT1P-4—Switch and One Fuse—One Door Construction



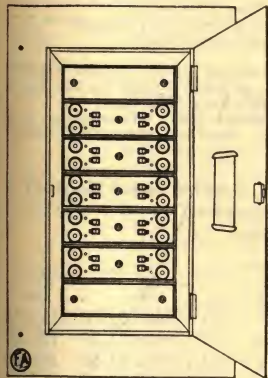
One Door Construction

**PANELBOARD. BRANCHES.** Made of Sections of Brown Bakelite.  
30 Amp., S.P. Tumbler Switches with N.E.C. Plug Type Fuse Connection for 15 Amp., 125 V., 2-Wire Solid Neutral Circuits.  
**MAINS. BOX. FRONT.** 3-Wire, 125-250 V., Solid Neutral.  
Code Thickness Galvanized Steel, 4-Inch Gutters.  
Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.

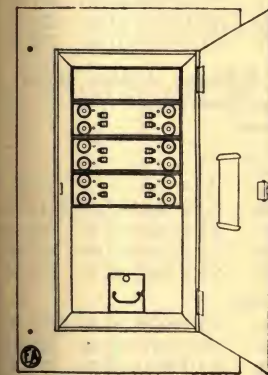


One Door Construction

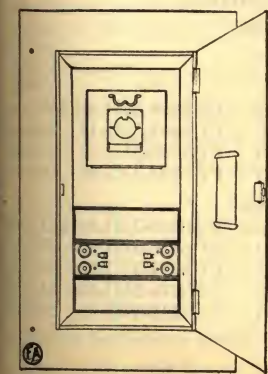
**PANELBOARD. BRANCHES.** Made of Sections of Brown Bakelite.  
30 Amp., S.P. Tumbler Switches with N.E.C. Plug Type Fuse Connection for 15 Amp., 120 V., 2-Wire Solid Neutral Circuits.  
**MAINS. BOX. FRONT.** 3-Phase, 4-Wire; 120-208 V., Solid Neutral.  
Code Thickness Galvanized Steel, 4-Inch Gutters.  
Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.



Type LNT1P-3L and Type LNT1P-4L



Type LNT1P-3PF and Type LNT1P-4PF



Type LNT1P-3KSF and Type LNT1P-4KSF

## Type LNT1P-3 Main Cable Lugs Only—Solid Neutral

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	30	19	18 1/2	4 3/4	37	LNT1P04-3L03	\$62.00
8	60	19	21 1/2	4 3/4	44	LNT1P08-3L06	78.00
12	60	19	24 1/2	4 3/4	51	LNT1P12-3L06	94.00
16	100	19	27 1/2	4 3/4	65	LNT1P16-3L10	109.00
20	100	19	30 1/2	4 3/4	72	LNT1P20-3L10	125.00
24	200	19	33 1/2	4 3/4	79	LNT1P24-3L20	140.00
28	200	19	39 1/2	4 3/4	94	LNT1P28-3L20	156.00
32	200	19	42 1/2	4 3/4	100	LNT1P32-3L20	172.00
36	200	19	45 1/2	4 3/4	170	LNT1P36-3L20	187.00
40	200	19	48 1/2	4 3/4	180	LNT1P40-3L20	203.00

## Type LNT1P-4 Main Cable Lugs Only—Solid Neutral

No. Branches	Main Bus Bar Amperes	Width	Ht.	Depth	Approx. Wt. Lb.	No.	Each
8	60	19	21 1/2	4 3/4	50	LNT1P08-4L06	\$84.00
12	60	19	24 1/2	4 3/4	57	LNT1P12-4L06	100.00
16	60	19	27 1/2	4 3/4	65	LNT1P16-4L06	116.00
20	100	19	30 1/2	4 3/4	72	LNT1P20-4L10	131.00
24	100	19	33 1/2	4 3/4	79	LNT1P24-4L10	147.00
28	100	19	39 1/2	4 3/4	94	LNT1P28-4L10	162.00
32	200	19	45 1/2	4 3/4	100	LNT1P32-4L20	178.00
36	200	19	48 1/2	4 3/4	170	LNT1P36-4L20	194.00
40	200	19	51 1/2	4 3/4	180	LNT1P40-4L20	209.00

## Type LNT1P-3 Pulfusswitch Safety Type Main Disconnect—Solid Neutral

No. Branches	Main Bus Bar Amperes	Width	Ht.	Depth	Approx. Wt. Lb.	No.	Each
4	30	19	21 1/2	4 3/4	70	LNT1P04-3PF03	\$72.00
8	60	19	24 1/2	4 3/4	80	LNT1P08-3PF06	87.00
12	60	19	27 1/2	4 3/4	90	LNT1P12-3PF06	103.00
16	100	19	36 1/2	4 3/4	115	LNT1P16-3PF10	131.00
20	100	19	39 1/2	4 3/4	125	LNT1P20-3PF10	146.00

## Type LNT1P-4 Pulfusswitch Safety Type Main Disconnect—Solid Neutral

No. Branches	Main Bus Bar Amperes	Width	Ht.	Depth	Approx. Wt. Lb.	No.	Each
8	60	19	24 1/2	4 3/4	80	LNT1P08-4PF06	\$99.00
12	60	19	27 1/2	4 3/4	90	LNT1P12-4PF06	114.00
16	60	19	30 1/2	4 3/4	100	LNT1P16-4PF06	130.00
20	100	19	39 1/2	4 3/4	125	LNT1P20-4PF10	164.00
24	100	19	42 1/2	4 3/4	145	LNT1P24-4PF10	180.00
28	100	19	48 1/2	4 3/4	160	LNT1P28-4PF10	195.00

## Type LNT1P-3 Klampswafuz Safety Type Hinged Pull-Out Main Disconnect—Solid Neutral

No. Branches	Main Bus Bar Amperes	Width	Ht.	Depth	Approx. Wt. Lb.	No.	Each
4	30	19	30 1/2	4 3/4	93	LNT1P04-3KSF03	\$77.00
8	60	19	33 1/2	4 3/4	103	LNT1P08-3KSF06	92.00
12	60	19	36 1/2	4 3/4	113	LNT1P12-3KSF06	108.00
16	100	19	42 1/2	4 3/4	160	LNT1P16-3KSF10	138.00
20	100	19	45 1/2	4 3/4	172	LNT1P20-3KSF10	153.00
24	200	19	51 1/2	7	245	LNT1P24-3KSF20	205.00
28	200	19	57 1/2	7	255	LNT1P28-3KSF20	221.00
32	200	19	60 1/2	7	270	LNT1P32-3KSF20	237.00
36	200	19	63 1/2	7	283	LNT1P36-3KSF20	252.00
40	200	19	66 1/2	7	297	LNT1P40-3KSF20	268.00

## Type LNT1P-4 Klampswafuz Safety Type Hinged Pull-Out Main Disconnect—Solid Neutral

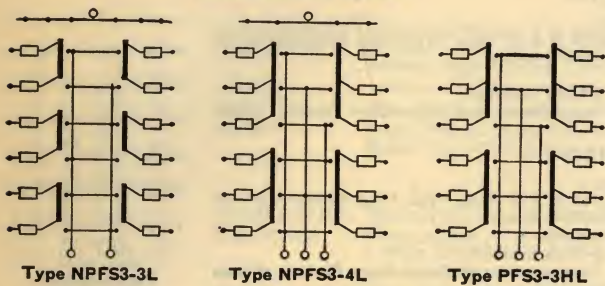
No. Branches	Main Bus Bar Amperes	Width	Ht.	Depth	Approx. Wt. Lb.	No.	Each
8	60	19	33 1/2	4 3/4	103	LNT1P08-4KSF06	\$107.00
12	60	19	36 1/2	4 3/4	113	LNT1P12-4KSF06	122.00
16	60	19	39 1/2	4 3/4	125	LNT1P16-4KSF06	138.00
20	100	19	45 1/2	4 3/4	172	LNT1P20-4KSF10	174.00
24	100	19	48 1/2	4 3/4	180	LNT1P24-4KSF10	190.00
28	100	19	54 1/2	4 3/4	195	LNT1P28-4KSF10	205.00
32	200	23 1/2	60 1/2	7	270	LNT1P32-4KSF20	274.00
36	200	23 1/2	63 1/2	7	283	LNT1P36-4KSF20	290.00
40	200	23 1/2	66 1/2	7	297	LNT1P40-4KSF20	305.00

NOTE: For door-in-door front add "D" to number and \$21 to prices.



## FA Safety Type PFS3-L Pulfuzswitch Panelboards and Cabinets

### Distribution Type



**PANELBOARD.** Made of Sections of Brown Bakelite.  
**BRANCHES.** 30 Amp., 250-Volt Pulfuzswitch Units with N.E.C. Cartridge Type Fuse Connections.  
**MAINS.** Cable Lugs Only.  
**BOX.** Code Thickness Galvanized Steel, 4-Inch Gutters for 200-Amp. Mains or Less; 6-Inch for 400-Amp. Mains.  
**FRONT.** Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Surface Mounting unless Flush is Ordered.

### \*Type NPFS3-3L 125/250-Volt, 3-Wire, Solid Neutral Mains and Branches

No. Main Bran- Bus Bar ches Amperes		INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	100	12	19 1/2	4	35	NPFS304-3L10	\$109.00
5	100	12	22 1/2	4	40	NPFS305-3L10	122.00
6	200	12	25 1/2	4	45	NPFS306-3L20	135.00
7	200	12	28 1/2	4	50	NPFS307-3L20	148.00
<b>Double Branch</b>							
8	200	19	27 1/2	4 3/4	70	NPFS308-3L20	\$161.00
10	200	19	33 1/2	4 3/4	80	NPFS310-3L20	187.00
12	400	24 1/2	36 1/2	6	100	NPFS312-3L40	231.00
14	400	24 1/2	39 1/2	6	115	NPFS314-3L40	267.00
16	400	24 1/2	42 1/2	6	130	NPFS316-3L40	283.00

### Type NPFS3-4L 120/208-Volt, 3-Phase, 4-Wire, Solid Neutral Mains and Branches

No. Main Bran- Bus Bar ches Amperes		INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	100	12	25 1/2	4	45	NPFS304-4L10	\$129.00
5	100	12	28 1/2	4	50	NPFS305-4L10	147.00
6	200	12	33 1/2	4	55	NPFS306-4L20	165.00
7	200	12	37 1/2	4	65	NPFS307-4L20	183.00
<b>Double Branch</b>							
8	200	19	30 1/2	4 3/4	90	NPFS308-4L20	\$201.00
10	200	19	36 1/2	4 3/4	100	NPFS310-4L20	237.00
12	400	26	44	6	135	NPFS312-4L40	291.00
14	400	26	47	6	145	NPFS314-4L40	327.00
16	400	26	50	6	155	NPFS316-4L40	363.00

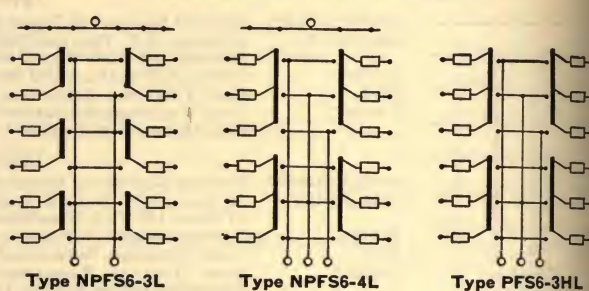
### Type PFS3-3HL 230-Volt, 3-Phase, 3-Wire Mains and Branches

No. Main Bran- Bus Bar ches Amperes		INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	60	12	22 1/2	4	40	PFS304-3HL06	\$111.00
5	100	12	25 1/2	4	45	PFS305-3HL10	129.00
6	100	12	31 1/2	4	55	PFS306-3HL10	147.00
7	100	12	34 1/2	4	60	PFS307-3HL10	165.00
<b>Double Branch</b>							
8	100	19	30 1/2	4 3/4	80	PFS308-3HL10	\$183.00
10	200	19	36 1/2	4 3/4	90	PFS310-3HL20	219.00
12	200	19	39 1/2	4 3/4	100	PFS312-3HL20	255.00
14	200	19	42 1/2	4 3/4	115	PFS314-3HL20	291.00
16	200	19	45 1/2	4 3/4	125	PFS316-3HL20	327.00

\*Can also be used for 250-volt, 3-phase mains and branches with one phase grounded.

## FA Safety Type PFS6-L Pulfuzswitch Panelboards and Cabinets

### Convertible Distribution Type



**PANELBOARD.** Made of Sections of Brown Bakelite.  
**BRANCHES.** 60 Amp., 250-Volt Pulfuzswitch Units with N.E.C. Cartridge Type Fuse Connections.  
**MAINS.** Cable Lugs Only.  
**BOX.** Code Thickness Galvanized Steel, 4-Inch Gutters for 200-Amp. Mains or Less; 6-Inch for 400-Amp. Mains; 8-Inch for 600-Amp. Mains.  
**FRONT.** Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Surface Mounting unless Flush is Ordered.

### \*Type NPFS6-3L 125/250-Volt, 3-Wire Solid Neutral Mains and Branches

No. Main Bran- Bus Bar ches Amperes		INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	200	12	25 1/2	4	40	NPFS604-3L20	\$119.00
5	200	12	28 1/2	4	45	NPFS605-3L20	135.00
6	400	15 1/2	36	5	85	NPFS606-3L40	168.00
7	400	15 1/2	39	5	95	NPFS607-3L40	183.00
<b>Double Branch</b>							
8	400	27 1/2	36	6	115	NPFS608-3L40	\$199.00
10	600	31 1/2	43	7 3/4	135	NPFS610-3L60	266.00
12	600	31 1/2	46	7 3/4	150	NPFS612-3L60	297.00
14	600	31 1/2	49	7 3/4	165	NPFS614-3L60	328.00
16	600	31 1/2	52	7 3/4	180	NPFS616-3L60	259.00

### Type NPFS6-4L 120/208-Volt, 3-Phase, 4-Wire, Solid Neutral Mains and Branches

No. Main Bran- Bus Bar ches Amperes		INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	200	12	31 1/2	4	50	NPFS604-4L20	\$145.00
5	200	12	34 1/2	4	60	NPFS605-4L20	167.00
6	400	15 1/2	45	5	80	NPFS606-4L40	207.00
7	400	15 1/2	51	5	90	NPFS607-4L40	229.00
<b>Double Branch</b>							
8	400	29 1/2	42	6	130	NPFS608-4L40	\$251.00
10	600	34 1/2	49 1/2	7 3/4	150	NPFS610-4L60	331.00
12	600	34 1/2	55 1/2	7 3/4	165	NPFS612-4L60	375.00
14	600	34 1/2	58 1/2	7 3/4	175	NPFS614-4L60	419.00
16	600	34 1/2	64	7 3/4	190	NPFS616-4L60	463.00

### Type PFS6-3HL 230-Volt, 3-Phase, 3-Wire Mains and Branches

No. Main Bran- Bus Bar ches Amperes		INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	100	12	28 1/2	4	50	PFS604-3HL10	\$127.00
5	100	12	34 1/2	4	55	PFS605-3HL10	149.00
6	200	12	40 1/2	4	65	PFS606-3HL20	171.00
7	200	12	43 1/2	4	75	PFS607-3HL20	193.00
<b>Double Branch</b>							
8	200	19	34 1/2	4 3/4	90	PFS608-3HL20	\$215.00
10	200	19	37 1/2	4 3/4	100	PFS610-3HL20	259.00
12	200	19	43 1/2	4 3/4	115	PFS612-3HL20	303.00
14	400	29 1/2	53	6	170	PFS614-3HL40	347.00
16	400	27	59	6	185	PFS616-3HL40	391.00

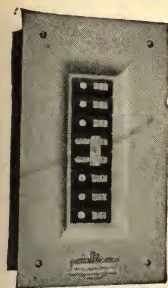
\*Can also be used for 250-volt, 3-phase mains and branches with one phase grounded.

For 30-ampere circuits on Type NPFS-3L, deduct \$2.50 each; for Types NPFS-4L and PFS-3HL, deduct \$4.00 each.



## FA Service Equipment

## Type A.C. Circuit Breakers



No. LC60-3B5F

With All S.P.  
BranchesWith S.P. and  
1 D.P. Branches

- BASE.** Made of Sections of Moulded Material.
- MAINS.** Type A.C. 120 Volt Main Breaker, with Grounded Solid Neutral, S.P. for 2-Wire, 115 Volt A.C. and Double Pole, Individual Trip, for 3-Wire 115-230 Volt, A.C. Feeder Systems.
- BRANCHES.** Type A.C. 120 Volt Circuit Breakers. 15 Ampere S.P. for 2-Wire Solid Neutral Circuits and 35 Ampere D.P., Individual Trip, for 3-Wire Solid Neutral Circuits.
- BOX.** Code Thickness Galvanized Steel.
- COVER.** Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting, F, unless Surface Mounting, S, is Ordered.

2-Wire, 120 Volt, A.C., Grounded Solid Neutral Feeder  
With Main Breakers

No. of BRANCHES		INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
To-amp.	amp. Mains	Width	Ht.	Depth			
15	35						
2	2	35	7 1/2	9	3 1/2	8	LC20-2B3F \$15.60
3	3	35	7 1/2	9	3 1/2	8	LC30-2B3F 15.60
4	4	35	7 1/2	11	3 1/2	10	LC40-2B3F 16.90

3-Wire, 120-240 V. A.C. Grounded Solid Neutral Feeder  
With Main Breakers

No. of BRANCHES		INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
To-amp.	amp. Mains	Width	Ht.	Depth			
15	35						
2	1	35	7 1/2	11	3 1/2	10	LC11-3B3F \$18.20
2	2	50	7 1/2	11	3 1/2	10	LC02-3B5F 19.50
3	3	35	7 1/2	11	3 1/2	10	LC30-3B3F 16.90
2	1	50	7 1/2	11	3 1/2	10	LC21-3B5F 19.50
1	2	50	7 1/2	13	3 1/2	12	LC12-3B5F 20.80
4	4	35	7 1/2	11	3 1/2	10	LC40-3B3F 18.20
3	1	50	7 1/2	13	3 1/2	12	LC31-3B5F 20.80
5	5	50	7 1/2	13	3 1/2	12	LC50-3B5F 19.50
4	1	50	7 1/2	13	3 1/2	12	LC41-3B5F 22.10
6	6	50	7 1/2	13	3 1/2	12	LC60-3B5F 22.10
8	8	50	7 1/2	15	3 1/2	14	LC80-3B5F 44.20

\*Change F to S for surface mounting.

All s.p. branches will be furnished with 15-ampere, calibration breakers and all d.p. branches will be furnished with 35-ampere, calibration, individual trip breakers, unless order calls for other capacities (20, 25, or 35-ampere, s.p. instead of 15-ampere and 15, 20, 25, or 50-ampere, d.p. instead of 35 ampere) in which case no extra charge will be made.

Main breaker capacity limited to 50 ampere maximum.

Service Equipment with Type A.C. Circuit  
Breakers and Bonded Solid Neutral

(Box and Cover Specifications Above)

BRANCHES		INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
Total		Width	Ht.	Depth			
1	15 Amp., S. P..	4 1/2	7	3	5	LC10-15F	\$9.00
2	15 Amp., S. P..	4 1/2	7	3	5	LC20-15F	11.00
1	15 Amp., D. P.,						
	Ind. Trip.	4 1/2	7	3	5	LC01-15F	11.50
3	15 Amp., S. P..	4 1/2	7	3	6	LC30-15F	13.00

Deduct 40 cents if neutral omitted on 1 and 2-circuit.

Deduct 80 cents if neutral omitted on 3 and 4-circuit.

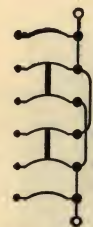
Circuit breakers for 20 and 25 amp. furnished at same price; 35 and 50 amp. breakers, in 7 1/2 x 7 x 3 1/2-inch box.

## FA Service Equipment

## Type A.C. Circuit Breakers



No. SE60-3L7F

With All S.P.  
or S.P. and  
1 D.P. BranchWith S.P. and  
2 D.P. BranchesWith S.P. and  
3 or More D.P.  
or All D.P. Branches

- BASE.** Made of sections of molded material.
- MAINS.** Lugs Only, with Solid Neutral Bonded to Mounting Back. For 2-Wire, 115 V., A.C. and 3-Wire, 115-230 V., A.C. Feeder Systems.
- BRANCHES.** Type A.C. 120 V. Circuit Breakers. 15 Amp. S.P. for 2-Wire Solid Neutral Circuits and 35 Amp. D.P., Individual Trip, for 3-Wire Solid Neutral Circuits.
- BOX.** Code Thickness Galvanized Steel.
- COVER.** Code Thickness Furniture Steel. Rust-Proof and Pearl Grey Finish. Flush Mounting, F, unless Surface Mounting, S, is Ordered.

## 2-Wire 115 V., A.C., Solid Neutral Feeder Main Lugs

No. of BRANCHES		INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	*No.	Each
To-amp.	amp. Mains	Width	Ht.	Depth			
15	35						
2	2	35	7 1/2	7	3 1/2	6	SE20-2L3F \$7.00
3	3	35	7 1/2	9	3 1/2	8	SE30-2L3F 9.00
4	4	35	7 1/2	9	3 1/2	8	SE40-2L3F 11.00

## 3-Wire 115-230 V., A.C. Solid Neutral Feeder Main Lugs

No. of BRANCHES		INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	*No.	Each
To-amp.	amp. Mains	Width	Ht.	Depth			
15	35						
2	2	70	7 1/2	7	3 1/2	6	SE20-3L7F \$8.00
1	1	70	7 1/2	9	3 1/2	8	SE11-3L7F 10.00
2	2	70	7 1/2	9	3 1/2	8	SE02-3L7F 13.00
3	3	70	7 1/2	9	3 1/2	8	SE30-3L7F 9.00
2	1	70	7 1/2	9	3 1/2	8	SE21-3L7F 12.00
1	2	70	7 1/2	11	3 1/2	10	SE12-3L7F 15.50
3	3	70	7 1/2	16	3 1/2	12	SE03-3L7F 22.00
4	4	70	7 1/2	9	3 1/2	8	SE40-3L7F 11.00
3	1	70	7 1/2	11	3 1/2	10	SE31-3L7F 14.00
2	2	70	7 1/2	11	3 1/2	10	SE22-3L7F 17.50
1	3	70	9	18	3 1/2	14	SE13-3L7F 24.00
4	4	70	9	18	3 1/2	14	SE04-3L7F 27.00
5	5	70	7 1/2	11	3 1/2	10	SE50-3L7F 13.50
4	1	70	7 1/2	11	3 1/2	10	SE41-3L7F 16.00
3	2	70	7 1/2	13	3 1/2	12	SE32-3L7F 19.50
2	3	70	9	18	3 1/2	14	SE23-3L7F 26.00
1	4	100	9	20	3 1/2	18	SE14-3L10F 29.50
5	5	100	9	20	3 1/2	18	SE05-3L10F 32.50
6	6	70	7 1/2	11	3 1/2	10	SE60-3L7F 15.50
5	1	70	7 1/2	13	3 1/2	12	SE51-3L7F 18.50
4	2	70	7 1/2	13	3 1/2	12	SE42-3L7F 21.50
3	3	100	9	20	3 1/2	18	SE33-3L10F 28.00
2	4	100	9	20	3 1/2	18	SE24-3L10F 32.00
1	5	100	9	22	3 1/2	24	SE15-3L10F 34.50
6	6	100	9	22	3 1/2	24	SE06-3L10F 37.50

\*Change F to S for surface mounting.

All s.p. branches will be furnished with 15-amp., calibration breakers and all d.p. branches will be furnished with 35 amp., calibration, individual trip breakers, unless order calls for other capacities (20, 25, or 35-amp., s.p. instead of 15 amp. and 15, 20, 25, or 50-amp., d.p. instead of 35 amp.) in which case no extra charge will be made, unless increased capacity main bus bar (100 amp., maximum) is required.

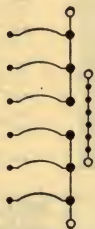
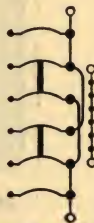
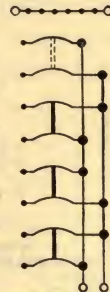
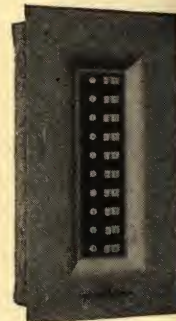


## FA Circuit Breaker Panelboards

## Type A.C. Load Centers



No. LC060-3L7F

With All S.P. or S.P.  
and 1 D.P. BranchWith S.P. and 2  
D.P. BranchesWith S.P. and 3  
or More D.P. or  
All D.P. Branches

No. LC100-3L7F

**BASE.** Made of Sections of Moulded Material.

**MAINS.** Lugs Only, with Insulated, groundable Solid Neutral.

**BRANCHES.** Type A.C. 120 Volt Circuit Breakers. 15 Ampere, S.P. for 2-Wire Solid Neutral Circuits and 35 Amperes, D.P. Individual Trip, for 3-Wire Solid Neutral Circuits.

**BOX.** Code Thickness B Galvanized Steel.

**COVER.** Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting, F, unless Surface Mounting, S, is Ordered.

### 2-Wire 120 Volt, A.C. Solid Neutral Feeder With Main Lugs

No. of BRANCHES				INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
To- tal	15 Amp. S.P.	35 Amp. D.P.	Mains Amp.	Width	Ht.	Depth			
2	2	..	35	7 1/2	7	3 1/2	6	LC020-2L3F	\$12.00
3	3	..	35	7 1/2	9	3 1/2	8	LC030-2L3F	15.60
4	4	..	35	7 1/2	9	3 1/2	8	LC040-2L3F	15.60

### 3-Wire, 115-230 Volt, A.C. Solid Neutral Feeder With Main Lugs

No. of BRANCHES				INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
To- tal	15 Amp. S.P.	35 Amp. D.P.	Mains Amp.	Width	Ht.	Depth			
2	2	..	70	7 1/2	7	3 1/2	6	LC020-3L7F	\$13.00
	1	1	70	7 1/2	9	3 1/2	8	LC011-3L7F	15.60
	..	2	70	7 1/2	9	3 1/2	8	LC002-3L7F	15.60
3	3	..	70	7 1/2	9	3 1/2	8	LC030-3L7F	15.60
	2	1	70	7 1/2	9	3 1/2	8	LC021-3L7F	15.60
	1	2	70	7 1/2	11	3 1/2	10	LC012-3L7F	18.20
	..	3	70	9	16	3 1/2	12	LC003-3L7F	19.50
4	4	..	70	7 1/2	9	3 1/2	8	LC040-3L7F	15.60
	3	1	70	7 1/2	11	3 1/2	10	LC031-3L7F	16.90
	2	2	70	7 1/2	11	3 1/2	10	LC022-3L7F	19.50
	1	3	70	9	18	3 1/2	14	LC013-3L7F	20.80
	..	4	70	9	18	3 1/2	14	LC004-3L7F	23.40
5	5	..	70	7 1/2	11	3 1/2	10	LC050-3L7F	16.90
	4	1	70	7 1/2	11	3 1/2	10	LC041-3L7F	18.20
	3	2	70	7 1/2	13	3 1/2	12	LC032-3L7F	20.80
	2	3	70	9	18	3 1/2	14	LC023-3L7F	22.10
	..	5	100	9	20	3 1/2	18	LC005-3L10F	46.80
6	6	..	70	7 1/2	11	3 1/2	10	LC060-3L7F	18.20
	5	1	70	7 1/2	13	3 1/2	12	LC051-3L7F	19.50
	4	2	70	7 1/2	13	3 1/2	12	LC042-3L7F	22.10
	3	3	100	9	20	3 1/2	18	LC033-3L10F	44.20
	2	4	100	9	20	3 1/2	18	LC024-3L10F	45.50
	..	6	100	9	22	3 1/2	20	LC006-3L10F	50.70

### 3-Wire, 120-230 Volt, A.C. Solid Neutral Feeder With Main Lugs

No. of BRANCHES				INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
To- tal	15 Amp. S.P.	35 Amp. D.P.	Mains Amp.	Width	Ht.	Depth			
7	7	..	70	7 1/2	13	3 1/2	12	LC070-3L7F	\$19.50
	6	1	70	7 1/2	13	3 1/2	12	LC061-3L7F	22.10
	5	2	100	9	20	3 1/2	18	LC052-3L10F	44.20
	4	3	100	9	20	3 1/2	18	LC043-3L10F	45.50
	..	7	100	9	24	3 1/2	22	LC007-3L10F	55.90
8	8	..	70	7 1/2	13	3 1/2	12	LC080-3L7F	22.10
	7	1	100	9	20	3 1/2	18	LC071-3L10F	44.20
	6	2	100	9	20	3 1/2	18	LC062-3L10F	45.50
	5	3	100	9	22	3 1/2	20	LC053-3L10F	47.40
	4	4	100	9	22	3 1/2	20	LC044-3L10F	50.70
	..	8	100	9	26	3 1/2	25	LC008-3L20F	59.80
10	10	..	100	9	18	3 1/2	16	LC100-3L10F	45.50
	8	2	100	9	20	3 1/2	22	LC082-3L10F	50.70
	6	4	100	9	24	3 1/2	22	LC064-3L10F	55.90
12	12	..	100	9	20	3 1/2	18	LC120-3L10F	50.70
	10	2	100	9	24	3 1/2	20	LC102-3L10F	55.90
	8	4	100	9	26	3 1/2	25	LC084-3L10F	58.50
14	14	..	100	9	22	3 1/2	20	LC140-3L10F	55.90
	12	2	100	9	24	3 1/2	22	LC122-2L10F	58.50
16	16	..	100	9	24	3 1/2	22	LC160-3L10F	58.50

### 4-Wire, 120-208 Volt, A.C. Solid Neutral Feeder With Main Lugs

No. of BRANCHES				INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
To- tal	15 Amp. S.P.	35 Amp. D.P.	Mains Amp.	Width	Ht.	Depth			
6	6	..	70	7 1/2	13	3 1/2	12	LC060-4L7F	\$41.60
9	9	..	70	7 1/2	15	3 1/2	16	LC090-4L7F	47.40
10	10	..	70	9	20	3 1/2	16	LC100-4L7F	50.70
12	12	..	70	9	20	3 1/2	18	LC120-4L7F	53.30
15	15	..	70	9	24	3 1/2	20	LC150-4L7F	58.50
16	16	..	70	9	24	3 1/2	22	LC160-4L7F	97.90

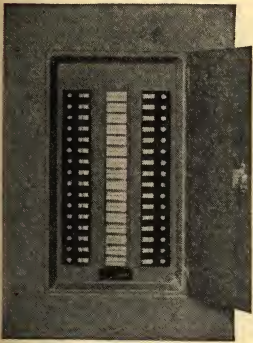
All items are listed as standard by Underwriters' Laboratories as panelboards suitable for use as service equipment.

All single pole branches will be furnished with 15 ampere, calibration breakers and all double pole branches will be furnished with 35 ampere, calibration, individual trip breakers, unless order calls for other capacities (20, 25, or 35 ampere, single pole instead of 15 ampere and 15, 20, 25, or 50 ampere, double pole instead of 35 ampere) in which case no extra charge will be made, unless increased capacity main bus bar (100 ampere, maximum) is required.

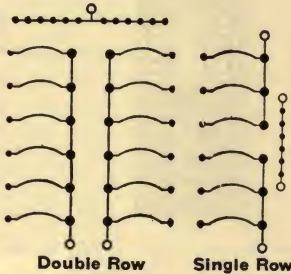


# FA Safety Type NAC1B-3 Circuit Breaker Panelboards and Cabinets

Type A.C. One Pole Breaker—Solid Neutral



Type NAC1B-3L



Double Row

Single Row

**BASE.** Made of Sections of Moulded Material.  
**MAINS.** 3-Wire, 115-230 Volt, Solid Neutral, for A.C. Feeder Systems Only.  
**BRANCHES.** \*15-Amp., 120 Volt, S.P., Type A.C. Thermag Circuit Breaker for 115 Volt, 2-Wire Solid Neutral Circuits.  
**BOX.** Code Thickness Galvanized Steel. Gutters as Noted.  
**FRONT.** Code Thickness Furniture Steel. Rust-Proof and Pearl Grey Finish. Flush Mounting unless Surface Is Ordered.

## Main Cable Lugs Only—Solid Neutral

Single Row—3-Inch Gutters

No. Branches	Main Bus Bar	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
	Amperes	Width	Ht.	Depth	
4	70	12	12½	4	26 NAC1B04-3L07 \$65.00
6	70	12	14½	4	30 NAC1B06-3L07 74.00
8	70	12	16½	4	34 NAC1B08-3L07 83.00
10	70	12	18½	4	38 NAC1B10-3L07 92.00
†12	100	12	20½	4	45 NAC1B12-3L10 101.00
†14	100	12	22½	4	50 NAC1B14-3L10 110.00
†16	100	12	24½	4	55 NAC1B16-3L10 120.00
†18	100	12	26½	4	60 NAC1B18-3L10 129.00

Double Row—4-Inch Gutters

No. Branches	Main Bus Bar	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
	Amperes	Width	Ht.	Depth	
†12	100	19	18½	4¾	58 NAC1B12-3L10 \$101.00
†14	100	19	18½	4¾	59 NAC1B14-3L10 111.00
†16	100	19	21½	4¾	67 NAC1B16-3L10 120.00
†18	100	19	21½	4¾	68 NAC1B18-3L10 129.00
20	100	19	21½	4¾	69 NAC1B20-3L10 138.00
22	200	19	24½	4¾	76 NAC1B22-3L20 147.00
24	200	19	24½	4¾	77 NAC1B24-3L20 156.00
26	200	19	27½	4¾	85 NAC1B26-3L20 165.00
28	200	19	30½	4¾	86 NAC1B28-3L20 174.00
30	200	19	30½	4¾	94 NAC1B30-3L20 183.00
32	200	19	30½	4¾	95 NAC1B32-3L20 192.00
34	200	19	33½	4¾	98 NAC1B34-3L20 202.00
36	200	19	33½	4¾	103 NAC1B36-3L20 211.00
38	200	19	33½	4¾	104 NAC1B38-3L20 220.00
40	200	19	36½	4¾	105 NAC1B40-3L20 229.00

## Main Automatic Circuit Breaker—Solid Neutral

Single Row—3-Inch Gutters

No. Branches	Main Bus Bar	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
	Amperes	Width	Ht.	Depth	
4	50	12	14½	4	30 NAC1B04-3AB05 \$79.00
6	50	12	16½	4	34 NAC1B06-3AB05 88.00
8	50	12	18½	4	38 NAC1B08-3AB05 98.00
10	50	12	20½	4	42 NAC1B10-3AB05 107.00

Double Row—4-Inch Gutters

No. Branches	Main Bus Bar	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
	Amperes	Width	Ht.	Depth	
12	100	19	30½	5½	85 NAC1B12-3AB10 \$142.00
14	100	19	33½	5½	96 NAC1B14-3AB10 151.00
16	100	19	33½	5½	96 NAC1B16-3AB10 160.00
18	100	19	33½	5½	96 NAC1B18-3AB10 169.00
20	100	19	36½	5½	103 NAC1B20-3AB10 178.00
22	200	19	42½	7	155 NAC1B22-3AB20 289.00
24	200	19	42½	7	155 NAC1B24-3AB20 298.00
26	200	19	45½	7	162 NAC1B26-3AB20 307.00
28	200	19	48½	7	170 NAC1B28-3AB20 316.00
30	200	19	48½	7	170 NAC1B30-3AB20 325.00
32	200	19	48½	7	170 NAC1B32-3AB20 334.00
34	200	19	51½	7	177 NAC1B34-3AB20 343.00
36	200	19	51½	7	177 NAC1B36-3AB20 352.00
38	200	19	51½	7	177 NAC1B38-3AB20 361.00
40	200	19	54½	7	185 NAC1B40-3AB20 371.00

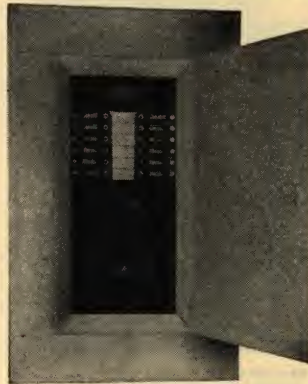
\*Prices are based on 15-amp. s.p. breakers; 20, 25, 35, and 50-amp. s.p. breakers supplied at same prices except when increased capacity bus bars are required.

†Furnished in single row type, unless two-row is specified.

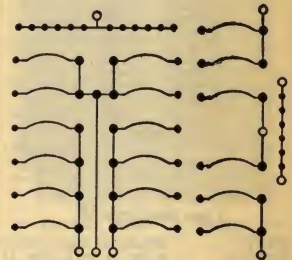
For each d.p. breaker substituted for not more than two pair of s.p. breakers, add \$1.00 each. D.p. breakers have individual trip.

# FA Safety Type NAC1B-4 Circuit Breaker Panelboards and Cabinets

Type A.C. One Pole Breaker—Solid Neutral



Type NAC1B-4AB



Double Row

Single Row

**BASE.** Made of Sections of Moulded Material.  
**MAINS.** 4-Wire, 3-Phase, 120-208 V., Solid Neutral.  
**BRANCHES.** \*15 Amp., 120 V., S.P. Type A.C. Thermag Circuit Breaker for 120 V., 2-Wire, Solid Neutral Circuits.  
**BOX.** Code Thickness Galvanized Steel. Gutters as Noted.  
**FRONT.** Code Thickness Furniture Steel. Rust-Proof and Pearl Grey Finish. Flush Mounting unless Surface Is Ordered.

## Main Cable Lugs Only—Solid Neutral

Single Row—3-Inch Gutters

No. Branches	Main Bus Bar	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
	Amperes	Width	Ht.	Depth	
6	70	12	16½	4	30 NAC1B06-4L07 \$81.00
9	70	12	20½	4	34 NAC1B09-4L07 96.00
†12	70	12	22½	4	45 NAC1B12-4L07 108.00
†14	70	12	24½	4	50 NAC1B14-4L07 117.00
†16	100	12	26½	4	55 NAC1B16-4L10 126.00

Double Row—4-Inch Gutters

No. Branches	Main Bus Bar	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
	Amperes	Width	Ht.	Depth	
†12	70	19	18½	4¾	58 NAC1B12-4L07 \$108.00
†14	70	19	18½	4¾	59 NAC1B14-4L07 117.00
†16	100	19	21½	4¾	67 NAC1B16-4L10 126.00
18	100	19	21½	4¾	68 NAC1B18-4L10 135.00
20	100	19	21½	4¾	69 NAC1B20-4L10 143.00
22	100	19	24½	4¾	76 NAC1B22-4L10 153.00
24	100	19	24½	4¾	77 NAC1B24-4L10 162.00
26	100	19	27½	4¾	85 NAC1B26-4L10 172.00
28	100	19	30½	4¾	86 NAC1B28-4L10 181.00
30	100	19	30½	4¾	94 NAC1B30-4L10 190.00
32	200	19	30½	4¾	95 NAC1B32-4L20 199.00
34	200	19	33½	4¾	98 NAC1B34-4L20 208.00
36	200	19	33½	4¾	103 NAC1B36-4L20 217.00
38	200	19	33½	4¾	104 NAC1B38-4L20 226.00
40	200	19	36½	4¾	105 NAC1B40-4L20 235.00

## Main Automatic Circuit Breaker—Solid Neutral

Double Row—4-Inch Gutters

No. Branches	Main Bus Bar	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
	Amperes	Width	Ht.	Depth	
4	50	19	24½	4¾	30 NAC1B04-4AB05 \$94.00
6	50	19	24½	4¾	34 NAC1B06-4AB05 103.00
8	50	19	27½	4¾	38 NAC1B08-4AB05 112.00
10	50	19	27½	4¾	42 NAC1B10-4AB05 121.00
12	50	19	27½	4¾	85 NAC1B12-4AB05 130.00
14	50	19	30½	4¾	94 NAC1B14-4AB05 139.00
16	100	19	36½	5½	103 NAC1B16-4AB10 178.00
18	100	19	36½	5½	103 NAC1B18-4AB10 187.00
20	100	19	39½	5½	110 NAC1B20-4AB10 196.00
22	100	19	39½	5½	110 NAC1B22-4AB10 205.00
24	100	19	39½	5½	110 NAC1B24-4AB10 215.00
26	100	19	42½	5½	117 NAC1B26-4AB10 224.00
28	100	19	45½	5½	125 NAC1B28-4AB10 234.00
30	100	19	45½	5½	125 NAC1B30-4AB10 242.00
32	200	19	51½	7	177 NAC1B32-4AB20 373.00
34	200	19	54½	7	185 NAC1B34-4AB20 382.00
36	200	19	54½	7	185 NAC1B36-4AB20 391.00
38	200	19	54½	7	185 NAC1B38-4AB20 400.00
40	200	19	57½	7	190 NAC1B40-4AB20 410.00

\*Prices are based on 15-amp. s.p. breakers; 20, 25, 35, and 50-amp. s.p. breakers supplied at same prices except when increased capacity bus bars are required.

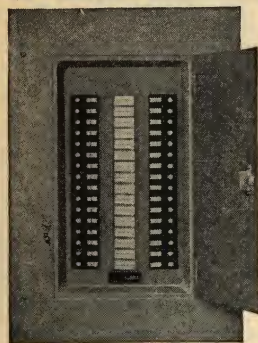
†Furnished in single row type, unless two-row is specified.

For each d.p. breaker substituted for not more than two pair of s.p. breakers, add \$1.00 each. D.p. breakers have individual trip.

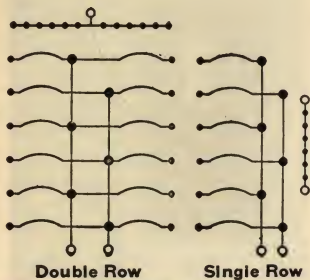


## FA Safety Type NAC12B-3 Circuit Breaker Panelboards and Cabinets

Type A.C. One and Two Pole Breaker—Solid Neutral



Type NAC12B-3L



**BASE.** Made of Sections of Moulded Material.  
**MAINS.** 3-Wire, 115-230 V., Solid Neutral; for A.C. Feeder Systems Only.  
**BRANCHES.** \*15 Amp., 120-V., S.P., Type A.C. Thermag Circuit Breaker for 115-V., 2-Wire Solid Neutral Circuits. Main Bus Bar Connections Permit Adjacent Pairs of Circuit Breakers to be Used for 3-Wire, Solid Neutral Circuits.  
**BOX.** Code Thickness Galvanized Steel. Gutters as Noted.  
**FRONT.** Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface Is Ordered.

### Main Cable Lugs Only—Solid Neutral

Single Row—3-Inch Gutters						
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each	
4	70	12 14½ 4	26	NAC12B04-3L07	\$70.00	
6	70	12 16½ 4	30	NAC12B06-3L07	82.00	
8	70	12 18½ 4	34	NAC12B08-3L07	94.00	
10	70	12 20½ 4	38	NAC12B10-3L07	105.00	
†12	100	12 22½ 4	45	NAC12B12-3L10	117.00	
†14	100	12 24½ 4	50	NAC12B14-3L10	129.00	
†16	100	12 26½ 4	55	NAC12B16-3L10	140.00	

Double Row—4-Inch Gutters					
†12	100	19	18½	4¾	58 NAC12B12-3L10 \$117.00
†14	100	19	18½	4¾	59 NAC12B14-3L10 129.00
†16	100	19	21½	4¾	67 NAC12B16-3L10 140.00
18	100	19	21½	4¾	68 NAC12B18-3L10 152.00
20	100	19	21½	4¾	69 NAC12B20-3L10 164.00
22	200	19	24½	4¾	76 NAC12B22-3L20 175.00
24	200	19	24½	4¾	77 NAC12B24-3L20 187.00
26	200	19	27½	4¾	85 NAC12B26-3L20 199.00
28	200	19	30½	4¾	86 NAC12B28-3L20 211.00
30	200	19	30½	4¾	94 NAC12B30-3L20 222.00
32	200	19	30½	4¾	95 NAC12B32-3L20 234.00
34	200	19	33½	4¾	98 NAC12B34-3L20 246.00
36	200	19	33½	4¾	103 NAC12B36-3L20 257.00
38	200	19	33½	4¾	104 NAC12B38-3L20 269.00
40	200	19	36½	4¾	105 NAC12B40-3L20 281.00

### Main Automatic Circuit Breaker—Solid Neutral

Double Row—4-Inch Gutters							
4	50	19	21½	4¾	30	NAC12B04-3AB05	\$84.00
6	50	19	21½	4¾	34	NAC12B06-3AB05	96.00
8	50	19	21½	4¾	38	NAC12B08-3AB05	108.00
10	50	19	24½	4¾	42	NAC12B10-3AB05	120.00
12	100	19	30½	5½	85	NAC12B12-3AB10	157.00
14	100	19	30½	5½	96	NAC12B14-3AB10	169.00
16	100	19	33½	5½	96	NAC12B16-3AB10	181.00
18	100	19	33½	5½	96	NAC12B18-3AB10	192.00
20	100	19	33½	5½	103	NAC12B20-3AB10	204.00
22	200	19	42½	7	155	NAC12B22-3AB20	317.00
24	200	19	42½	7	155	NAC12B24-3AB20	329.00
26	200	19	45½	7	162	NAC12B26-3AB20	341.00
28	200	19	48½	7	170	NAC12B28-3AB20	352.00
30	200	19	48½	7	170	NAC12B30-3AB20	364.00
32	200	19	48½	7	170	NAC12B32-3AB20	376.00
34	200	19	51½	7	177	NAC12B34-3AB20	387.00
36	200	19	51½	7	177	NAC12B36-3AB20	399.00
38	200	19	51½	7	177	NAC12B38-3AB20	411.00
40	200	19	54½	7	185	NAC12B40-3AB20	422.00

\*Prices are based on 15-amp. s.p. breakers; 20, 25, 35, and 50-amp. s.p. breakers supplied at same prices except when increased capacity bus bars are required.

†Furnished in single row type, unless two row is specified.

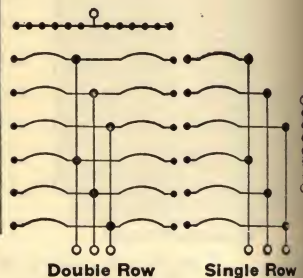
For each d.p. breaker substituted for a pair of s.p. breakers, add \$1.00 each, d.p. breakers have individual trip.

## FA Safety Type NAC12B-4 Circuit Breaker Panelboards and Cabinets

Type A.C. One and Two Pole Breaker—Solid Neutral



Type NAC12B-4AB



**BASE.** Made of Sections of Moulded Material.  
**MAINS.** 4-Wire, 3-Phase, 120-208 V., Solid Neutral.  
**BRANCHES.** \*15 Amp., 120 V., S.P., Type A.C. Thermag Circuit Breaker for 120 V., 2-Wire, Solid Neutral Circuits. Main Bus Bar Connections Permit Adjacent Pairs of Circuit Breakers to be Used for 3-Wire, Solid Neutral Circuits.  
**BOX.** Code Thickness Galvanized Steel. Gutters as Noted.  
**FRONT.** Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface Is Ordered.

### Main Cable Lugs Only—Solid Neutral

Single Row—3-Inch Gutters							
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
6	70	12	16½	4	30	NAC12B06-4L07	\$88.00
9	70	12	20½	4	34	NAC12B09-4L07	107.00
†12	70	12	22½	4	45	NAC12B12-4L07	123.00
†14	70	12	24½	4	50	NAC12B14-4L07	135.00
†16	100	12	26½	4	55	NAC12B16-4L10	147.00

Double Row—4-Inch Gutters						
†12	70	19	18½	4¾	58	NAC12B12-4L07 \$124.00
†14	70	19	21½	4¾	59	NAC12B14-4L07 135.00
†16	100	19	21½	4¾	67	NAC12B16-4L10 147.00
18	100	19	21½	4¾	68	NAC12B18-4L10 159.00
20	100	19	24½	4¾	69	NAC12B20-4L10 170.00
22	100	19	24½	4¾	76	NAC12B22-4L10 182.00
24	100	19	24½	4¾	77	NAC12B24-4L10 194.00
26	100	19	30½	4¾	85	NAC12B26-4L10 205.00
28	100	19	30½	4¾	86	NAC12B28-4L10 217.00
30	100	19	30½	4¾	94	NAC12B30-4L10 229.00
32	200	19	33½	4¾	95	NAC12B32-4L20 240.00
34	200	19	33½	4¾	98	NAC12B34-4L20 252.00
36	200	19	33½	4¾	103	NAC12B36-4L20 264.00
38	200	19	36½	4¾	104	NAC12B38-4L20 276.00
40	200	19	36½	4¾	105	NAC12B40-4L20 287.00

### Main Circuit Breaker—Solid Neutral

Double Row—4-Inch Gutters						
6	50	19	24½	4¾	34	NAC12B06-4AB05 \$110.00
8	50	19	24½	4¾	38	NAC12B08-4AB05 122.00
10	50	19	27½	4¾	42	NAC12B10-4AB05 134.00
12	50	19	27½	4¾	85	NAC12B12-4AB05 146.00
14	50	19	27½	4¾	94	NAC12B14-4AB05 157.00
16	100	19	33½	5½	103	NAC12B16-4AB10 199.00
18	100	19	33½	5½	103	NAC12B18-4AB10 211.00
20	100	19	33½	5½	110	NAC12B20-4AB10 222.00
22	100	19	36½	5½	110	NAC12B22-4AB10 234.00
24	100	19	36½	5½	110	NAC12B24-4AB10 246.00
26	100	19	39½	5½	117	NAC12B26-4AB10 257.00
28	100	19	42½	5½	125	NAC12B28-4AB10 269.00
30	100	19	42½	5½	125	NAC12B30-4AB10 281.00
32	200	19	48½	7	177	NAC12B32-4AB20 415.00
34	200	19	51½	7	185	NAC12B34-4AB20 426.00
36	200	19	51½	7	185	NAC12B36-4AB20 438.00
38	200	19	51½	7	185	NAC12B38-4AB20 450.00
40	200	19	54½	7	190	NAC12B40-4AB20 461.00

\*Prices are based on 15-amp. s.p. breakers; 20, 25, 35, and 50-amp. s.p. breakers supplied at same prices except when increased capacity bus bars are required.

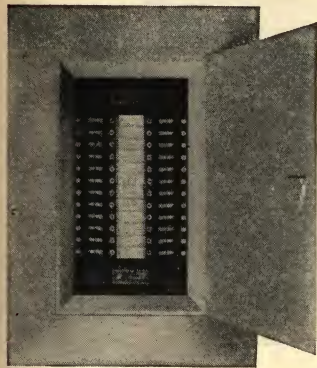
†Furnished in single row type, unless two row is specified.

For each d.p. breaker substituted for a pair of s.p. breakers, add \$1.00 each. D.p. breakers have individual trip.

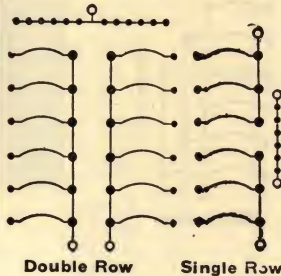


# FA Safety Type NA1B-3 Circuit Breaker Panelboards and Cabinets

One Pole Breaker—Solid Neutral



Type NA1B-3L



Double Row

Single Row

**PANELBOARD.** Made of Sections of Moulded Material.  
**BRANCHES.** \*15 Amp., 125 V., S.P. Dublbrak Type Thermal Circuit Breakers for 125 V., 2-Wire, Solid Neutral Circuits.

**MAINS.** 3-Wire, 125-250 V., Solid Neutral.  
**BOX.** Code Thickness Galvanized Steel, Gutters as Noted.  
**FRONT.** Code Thickness Furniture Steel, Rust-Proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.

## Main Cable Lugs Only—Solid Neutral

### Single Row—3-Inch Gutters

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth	
4	50	12	12 1/2	4	26 NA1B04-3L05 \$81.00
6	50	12	14 1/2	4	30 NA1B06-3L05 97.00
8	50	12	16 1/2	4	34 NA1B08-3L05 114.00
10	50	12	18 1/2	4	38 NA1B10-3L05 131.00

### Double Row—4-Inch Gutters

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth	
12	100	19	21 1/2	4 3/4	58 NA1B12-3L10 \$148.00
14	100	19	21 1/2	4 3/4	59 NA1B14-3L10 165.00
16	100	19	24 1/2	4 3/4	67 NA1B16-3L10 182.00
18	100	19	24 1/2	4 3/4	68 NA1B18-3L10 199.00
20	100	19	24 1/2	4 3/4	69 NA1B20-3L10 216.00
22	200	19	27 1/2	4 3/4	76 NA1B22-3L20 233.00
24	200	19	27 1/2	4 3/4	77 NA1B24-3L20 250.00
26	200	19	30 1/2	4 3/4	85 NA1B26-3L20 266.00
28	200	19	30 1/2	4 3/4	86 NA1B28-3L20 283.00
30	200	19	33 1/2	4 3/4	94 NA1B30-3L20 300.00
32	200	19	33 1/2	4 3/4	95 NA1B32-3L20 317.00
34	200	19	33 1/2	4 3/4	98 NA1B34-3L20 334.00
36	200	19	36 1/2	4 3/4	103 NA1B36-3L20 351.00
38	200	19	36 1/2	4 3/4	104 NA1B38-3L20 368.00
40	200	19	36 1/2	4 3/4	105 NA1B40-3L20 385.00

## Main Automatic Circuit Breaker—Solid Neutral

### Single Row—3-Inch Gutters

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth	
4	50	12	14 1/2	4	30 NA1B04-3AB05 \$95.00
6	50	12	16 1/2	4	34 NA1B06-3AB05 112.00
8	50	12	18 1/2	4	38 NA1B08-3AB05 129.00
10	50	12	20 1/2	4	42 NA1B10-3AB05 146.00

### Double Row—4-Inch Gutters

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth	
12	100	19	30 1/2	5 1/2	85 NA1B12-3AB10 \$188.00
14	100	19	33 1/2	5 1/2	94 NA1B14-3AB10 205.00
16	100	19	33 1/2	5 1/2	95 NA1B16-3AB10 222.00
18	100	19	33 1/2	5 1/2	96 NA1B18-3AB10 239.00
20	100	19	36 1/2	5 1/2	103 NA1B20-3AB10 256.00
22	200	19	42 1/2	7	155 NA1B22-3AB20 374.00
24	200	19	42 1/2	7	155 NA1B24-3AB20 391.00
26	200	19	45 1/2	7	162 NA1B26-3AB20 408.00
28	200	19	48 1/2	7	169 NA1B28-3AB20 425.00
30	200	19	48 1/2	7	169 NA1B30-3AB20 442.00
32	200	19	48 1/2	7	169 NA1B32-3AB20 459.00
34	200	19	51 1/2	7	175 NA1B34-3AB20 476.00
36	200	19	51 1/2	7	176 NA1B36-3AB20 493.00
38	200	19	51 1/2	7	177 NA1B38-3AB20 510.00
40	200	19	54 1/2	7	190 NA1B40-3AB20 526.00

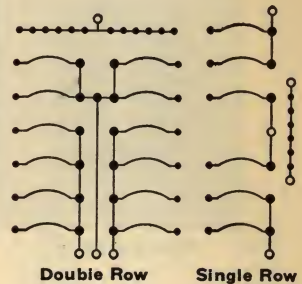
\*Prices are based on 15-amp. breakers, 20 and 25-amp. breakers supplied at same prices except when increased capacity bus bars are required; 35 and 50-amp. breakers, \$1.50 extra per circuit plus extra list for increased mains, if required.

# FA Safety Type NA1B-4 Circuit Breaker Panelboards and Cabinets

One Pole Breaker—Solid Neutral



Type NA1B-4AB



Double Row

Single Row

**PANELBOARD.** Made of Sections of Moulded Material.  
**BRANCHES.** \*15 Amp., 125 V., S.P. Dublbrak Type Thermal Circuit Breakers for 120 V., 2-Wire, Solid Neutral Circuits.

**MAINS.** 3-Phase, 4-Wire; 120-208 V., Solid Neutral.  
**BOX.** Code Thickness Galvanized Steel, Gutters as Noted.  
**FRONT.** Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.

## Main Cable Lugs Only—Solid Neutral Single Row—3-Inch Gutters

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth	
6	50	12	16 1/2	4	35 NA1B06-4L05 \$104.00
9	50	12	19 1/2	4	40 NA1B09-4L05 130.00

### Double Row—4-Inch Gutters

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth	
12	50	19	21 1/2	4 3/4	58 NA1B12-4L05 \$155.00
14	50	19	24 1/2	4 3/4	67 NA1B14-4L05 172.00
16	100	19	24 1/2	4 3/4	68 NA1B16-4L10 188.00
18	100	19	24 1/2	4 3/4	69 NA1B18-4L10 205.00
20	100	19	27 1/2	4 3/4	76 NA1B20-4L10 222.00
22	100	19	27 1/2	4 3/4	77 NA1B22-4L10 239.00
24	100	19	27 1/2	4 3/4	78 NA1B24-4L10 256.00
26	100	19	30 1/2	4 3/4	85 NA1B26-4L10 273.00
28	100	19	33 1/2	4 3/4	94 NA1B28-4L10 290.00
30	100	19	33 1/2	4 3/4	95 NA1B30-4L10 307.00
32	200	23 1/2	33 1/2	4 3/4	96 NA1B32-4L20 324.00
34	200	23 1/2	36 1/2	4 3/4	103 NA1B34-4L20 341.00
36	200	23 1/2	36 1/2	4 3/4	104 NA1B36-4L20 357.00
38	200	23 1/2	36 1/2	4 3/4	105 NA1B38-4L20 374.00
40	200	23 1/2	39 1/2	4 3/4	111 NA1B40-4L20 391.00
42	200	23 1/2	39 1/2	4 3/4	112 NA1B42-4L20 408.00

## Main Automatic Circuit Breaker—Solid Neutral

### Double Row—4-Inch Gutters

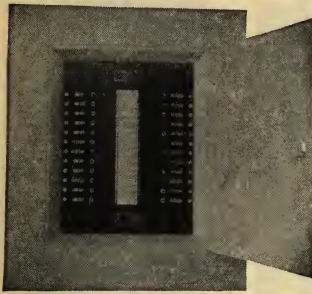
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth	
4	50	19	24 1/2	4 3/4	67 NA1B04-4AB05 \$109.00
6	50	19	24 1/2	4 3/4	68 NA1B06-4AB05 126.00
8	50	19	27 1/2	4 3/4	76 NA1B08-4AB05 143.00
10	50	19	27 1/2	4 3/4	77 NA1B10-4AB05 160.00
12	50	19	27 1/2	4 3/4	78 NA1B12-4AB05 177.00
14	50	19	30 1/2	4 3/4	85 NA1B14-4AB05 194.00
16	100	19	36 1/2	5 1/2	110 NA1B16-4AB10 240.00
18	100	19	36 1/2	5 1/2	112 NA1B18-4AB10 257.00
20	100	19	39 1/2	5 1/2	122 NA1B20-4AB10 274.00
22	100	19	39 1/2	5 1/2	123 NA1B22-4AB10 291.00
24	100	19	39 1/2	5 1/2	124 NA1B24-4AB10 308.00
26	100	19	42 1/2	5 1/2	133 NA1B26-4AB10 325.00
28	100	19	45 1/2	5 1/2	142 NA1B28-4AB10 342.00
30	100	19	45 1/2	5 1/2	143 NA1B30-4AB10 359.00
32	200	23 1/2	51 1/2	7	183 NA1B32-4AB20 498.00
34	200	23 1/2	54 1/2	7	190 NA1B34-4AB20 515.00
36	200	23 1/2	54 1/2	7	190 NA1B36-4AB20 532.00
38	200	23 1/2	54 1/2	7	190 NA1B38-4AB20 549.00
40	200	23 1/2	57 1/2	7	200 NA1B40-4AB20 565.00
42	200	23 1/2	57 1/2	7	200 NA1B42-4AB20 582.00

\*Prices are based on 15-amp. breakers, 20 and 25-amp. breakers supplied at same prices except when increased capacity bus bars are required; 35 and 50-amp. breakers, \$1.50 extra per circuit plus extra list for increasing mains, if required.



## FA Safety Type NA1BS-4 Circuit Breaker Panelboards and Cabinets

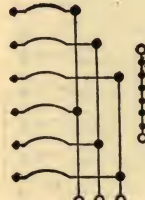
One Pole Breaker—Connected A-B-C Sequence



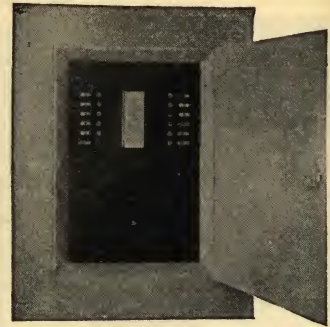
Type NA1BS-4L



Double Row



Single Row



Type NA1BS-4AB

**PANELBOARD.** Made of Sections of Moulded Material.**BRANCHES.**

\*15 Amp., 125 V. S.P., Dublbrak Type Thermal Circuit Breakers for 120 V., 2-Wire, Solid Neutral Circuits. Connected A-B-C sequence.

**MAINS.**

3-Phase, 4-Wire, 120-208 V., Solid Neutral. "Sequence Bussing".

**BOX.**

Code Thickness Galvanized Steel, Gutters, as noted.

**FRONT.**

Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.

It is standard practice to assemble 3-phase, 4-wire lighting and appliance branch circuit panelboards so that all branch circuits on each phase are grouped together.

Ordinarily this scheme of connection meets all requirements, and since it is possible to make panelboards of this type somewhat narrower, a saving of space is effected. When panelboards are mounted on columns in industrial plants, the matter of additional width might be objectionable.

However, specifications occasionally specify the adjacent circuit branches to be connected in the sequence of phase A, B, and C, repeating this connection all the way from the top to the bottom of the panelboard.

The cost of the A, B, C, sequence arrangement is slightly higher than that of the group-phase arrangement, because a wider box is required and branch circuits require copper connecting straps between the main bus bar and circuit branches.

## Main Cable Lugs Only—Solid Neutral

## Single Row—3-Inch Gutters

No. Branches	Main Bus Bar Amps.	Width	INSIDE BOX DIMEN. (AND MARKINGS, IN.) Ht. Depth	Approx. Wt. Lb.	No.	Each
6	50	12	16½ 4	70	NA1BS06-4L050	\$112.00
9	50	12	19½ 4	71	NA1BS09-4L050	140.00

## Double Row—4-Inch Gutters

No. Branches	Main Bus Bar Amps.	Width	INSIDE BOX DIMEN. (AND MARKINGS, IN.) Ht. Depth	Approx. Wt. Lb.	No.	Each
12	50	23½	21½ 4¾	72	NA1BS12-4L05	168.00
14	50	23½	24½ 4¾	85	NA1BS14-4L05	185.00
16	100	23½	24½ 4¾	86	NA1BS16-4L10	203.00
18	100	23½	24½ 4¾	87	NA1BS18-4L10	220.00
20	100	23½	27½ 4¾	96	NA1BS20-4L10	239.00
22	100	23½	27½ 4¾	97	NA1BS22-4L10	257.00
24	100	23½	27½ 4¾	98	NA1BS24-4L10	276.00
26	100	23½	30½ 4¾	107	NA1BS26-4L10	293.00
28	100	23½	30½ 4¾	108	NA1BS28-4L10	309.00
30	100	23½	30½ 4¾	109	NA1BS30-4L10	326.00
32	200	23½	33½ 4¾	120	NA1BS32-4L20	343.00
34	200	23½	36½ 4¾	130	NA1BS34-4L20	360.00
36	200	23½	36½ 4¾	132	NA1BS36-4L20	377.00
38	200	23½	36½ 4¾	133	NA1BS38-4L20	394.00
40	200	23½	39½ 4¾	142	NA1BS40-4L20	413.00
42	200	23½	39½ 4¾	143	NA1BS42-4L20	432.00

## Main Automatic Circuit Breaker—Solid Neutral

## Double Row—4-Inch Gutters

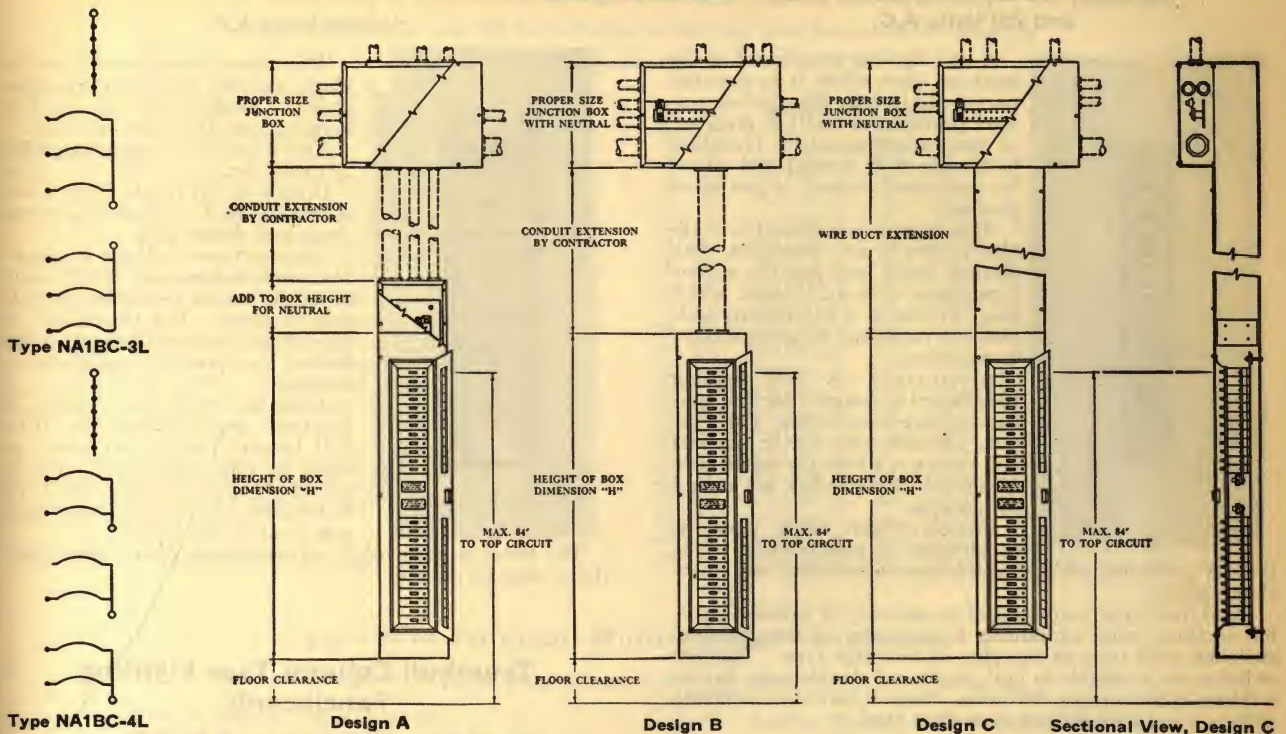
No. Branches	Main Bus Bar Amps.	Width	INSIDE BOX DIMEN. (AND MARKINGS, IN.) Ht. Depth	Approx. Wt. Lb.	No.	Each
4	50	23½	21½ 4¾	70	NA1BS04-4AB05	\$118.00
6	50	23½	21½ 4¾	71	NA1BS06-4AB05	135.00
8	50	23½	24½ 4¾	80	NA1BS08-4AB05	152.00
10	50	23½	24½ 4¾	81	NA1BS10-4AB05	169.00
12	50	23½	24½ 4¾	82	NA1BS12-4AB05	190.00
14	50	23½	27½ 4¾	90	NA1BS14-4AB05	208.00
16	100	23½	33½ 5½	110	NA1BS16-4AB10	255.00
18	100	23½	33½ 5½	111	NA1BS18-4AB10	273.00
20	100	23½	36½ 5½	120	NA1BS20-4AB10	291.00
22	100	23½	36½ 5½	121	NA1BS22-4AB10	309.00
24	100	23½	36½ 5½	122	NA1BS24-4AB10	328.00
26	100	23½	39½ 5½	130	NA1BS26-4AB10	345.00
28	100	23½	39½ 5½	131	NA1BS28-4AB10	361.00
30	100	23½	39½ 5½	132	NA1BS30-4AB10	378.00
32	200	23½	48½ 7	175	NA1BS32-4AB20	517.00
34	200	23½	51½ 7	182	NA1BS34-4AB20	534.00
36	200	23½	51½ 7	182	NA1BS36-4AB20	551.00
38	200	23½	51½ 7	182	NA1BS38-4AB20	568.00
40	200	23½	54½ 7	190	NA1BS40-4AB20	588.00
42	200	23½	54½ 7	190	NA1BS42-4AB20	606.00

\*Prices are based on 15-amp. breakers, 20 and 25-amp. breakers supplied at same prices except when increased capacity bus bars are required; 35 and 50-amp. breakers, \$1.50 extra per circuit, plus extra list for increased main, if required.



## FA Industrial Column Type NA1BC Circuit Breaker Panelboards and Cabinets

## One Pole Breaker



**PANELBOARD.** Made of Sections of Moulded Material.

**BRANCHES.** \*15 Amp., 125 V. S.P. Dualbrak Type Thermal Circuit Breakers for 115 or 120 V., 2-Wire, Solid Neutral Circuits.

**MAINS.** Lugs Only with Solid Neutral. For 3-Wire, 115-230 V., or 4-Wire, 3 Ph., Solid Neutral Type for Surface Mounting Only.

**BOX.** Code Thickness Galvanized Steel with Side and Rear Gutters. Pearl Gray Finish. Flanged Door Feeder Systems.

**JUNCTION BOX.** Code Thickness Galvanized Steel. Neutral Plate Included. Size and Design as Shown Above.

Designed to be mounted between the flanges of a 10-inch H column; it may also be used to advantage in any other location where the available space will not accommodate a standard width panelboard.

**Design A** has the neutral plate located in an extension of the panelboard box. This extension has a removable screw cover which is separate from the panelboard front. A junction box for mounting on the ceiling directly above the panelboard location is furnished at extra cost.

**Design B** is the same as Design A, except that the neutral plate is mounted in the junction box on the ceiling. In both

designs, A and B, the contractor must furnish one or more riser conduits between the junction box and the panelboard.

**Design C** is similar to Design B, except that the connection between the junction box and the panelboard box is made by means of a wire duct instead of riser conduits.

Wire and cable duct is furnished extra as follows:

		36 to 76 Inches				
Length.....	In.	36	46	56	66	76
Each.....		\$23.00	25.00	26.00	29.00	30.00
		86 to 126 Inches				
Length.....	In.	86	96	106	116	126
Each.....		\$33.00	36.00	39.00	42.00	47.00

## 3-Wire—125/250 V., Solid Neutral

No. Branches	Main Bus Bar Amperes	†OUTSIDE BOX DIMEN. AND MARKING, IN.			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	50	8	28	5	40	NA1BC04-3L05	\$81.00
6	50	8	28	5	40	NA1BC06-3L05	98.00
8	50	8	28	5	45	NA1BC08-3L05	114.00
10	50	8	28	5	45	NA1BC10-3L05	131.00
12	100	8	28	5	45	NA1BC12-3L10	148.00
14	100	8	32	5	50	NA1BC14-3L10	165.00
16	100	8	32	5	50	NA1BC16-3L10	182.00
18	100	8	36	5	55	NA1BC18-3L10	199.00
20	100	8	36	5	55	NA1BC20-3L10	216.00
22	200	8	40	5	65	NA1BC22-3L20	233.00
24	200	8	40	5	65	NA1BC24-3L20	250.00

## 3-Phase—4-Wire—120/208 V., Solid Neutral

No. Branches	Main Bus Bar Amperes	†OUTSIDE BOX DIMEN. AND MARKING, IN.			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
6	50	8	30	5	50	NA1BC06-4L05	\$104.00
9	50	8	30	5	50	NA1BC09-4L05	130.00
12	50	8	30	5	50	NA1BC12-4L05	155.00
15	50	8	36	5	55	NA1BC15-4L05	181.00
18	50	8	36	5	55	NA1BC18-4L05	205.00
21	100	8	42	5	65	NA1BC21-4L10	231.00
24	100	8	42	5	65	NA1BC24-4L10	256.00
27	100	8	48	5	75	NA1BC27-4L10	282.00
30	100	8	48	5	75	NA1BC30-4L10	307.00
...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...

\*Prices are based on 15-amp. breakers, 20 and 25-amp. breakers supplied at same prices except when increased capacity bus bars are required; 35 and 50-amp. breakers, \$1.50 extra per circuit, plus extra list for increased main.

†Junction Box, 18 inches wide, 12 inches high, 5 inches deep, add \$20. to prices.

‡When Design A is specified add to box height as follows: 4 to 24 branches, 6 inches; 26 to 30 branches, 10 inches. No additional charge.



## Trumbull Unit Lighting Panelboards

125 Volts, 125-250 Volts A.C. or D.C.,  
and 250 Volts A.C.



A unit lighting panelboard of the sectional type, which is an essential part of the interior distribution system, provides for multiple grouping of many small circuits or branches; facilitates their control and allows for convenient renewal of protective devices.

This type of panelboard is available in two types: Standard, with 20-inch width box, and the narrow type panel with a 12½-inch width box. The latter is particularly suitable for mounting in areas limited or restricted.

**APPLICATION.**—A unit lighting panelboard is designed for low voltage lighting distribution, 125 volts d.c., 125-250 volts a.c. or d.c. and 250 volts a.c. where the capacity in all branch circuits does not exceed 30 amperes.

**CONSTRUCTION.**—This panel is constructed of standardized parts, thereby providing additional features of flexibility and interchangeability.

Dead front type, consisting of an assembly of moulded bakelite sections, each containing a maximum of four tumbler switches, with fuses of the plug or cartridge type. Tumbler switches are available in both single and double pole, having a rating of 30 amperes, 250 volts. Panel is furnished complete with box and trim of code gage sheet steel.

## Trumbull Circuit Breaker Lighting Panelboards

125 Volts D.C., 125-250 Volts  
or 250 Volts A.C.



A circuit breaker lighting panelboard is particularly adaptable when automatic overload protection and flexibility are important factors of the installation.

This type of panelboard incorporates the Type AT Circuit Breaker with improved electrical and mechanical features.

**APPLICATION.**—This panelboard is designed for low voltage, branch circuit lighting and power distribution, 125 volts d.c., 125-250 volts or 250 volts a.c. where the capacity of any branch circuit does not exceed 50 amperes, although one subfeed up to 225 amperes can be furnished.

**CONSTRUCTION.**—Breakers are assembled on a heavy black enamel steel back plate, to accommodate the mounting of either 1, 2 or 3-pole breakers of 15, 20, 25, 35 or 50-ampere rating. This provides a feature of interchangeability which may be desirable at some later date to accommodate changes within the electrical wiring system.

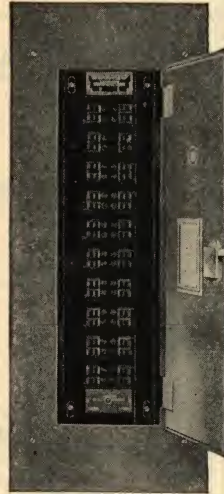
Breakers are calibrated and sealed at the factory to prevent unauthorized tampering or changes.

Panelboard boxes are 4½ inches deep, with the exception of where main breakers are of 100 or 225 amperes, frame size, which require a box 5¾ inches deep.

This panelboard is also available in the narrow type construction for use in areas where space may be a limiting factor.

## Trumbull Multi-Breaker Lighting Panelboards

115-230 Volts A.C.



This type of panelboard is particularly suitable for restricted space, usually encountered in modern homes, stores and office buildings.

**APPLICATION.**—Designed for 120-240 volts a.c.

Branch circuit breakers are available in 15, 20, 25, 35 and 50-ampere, single and double-pole.

**CONSTRUCTION.**—Panel is assembled with molded unit blocks, each of which houses a number of unit pole breakers. The entire unit is rivet sealed with metal cover at the factory to prevent unauthorized changes.

Available with two types of breakers: one, utilizing the Type MB breaker, which can house as many as four single pole units in one block, and the other the Type M breaker, which houses two single pole units in one block.

The latter is particularly advantageous where added flexibility may be desired.

## Trumbull Column Type Lighting Panelboards

Single-Phase, 115-230 Volts A.C., 3-Phase,  
4-Wire 115-208 Volts A.C.



A new type of panelboard, which has been particularly designed for use in factory buildings where it may be desirable to assemble panelboards in the web of H columns.

**APPLICATION.**—Available for single-phase, 120-240 volts a.c., 3-phase, 4-wire 120-208 volts a.c. with branch circuits ranging from 15 to 50 amperes inclusive, single and double pole.

**CONSTRUCTION.**—This type of panelboard incorporates the use of Type M breaker, consisting of 2 unit pole breakers, assembled in a moulded unit block and rivet sealed to prevent any tampering. This panel is furnished in a 7¼-inch wide box designed for an 8-inch beam.

Boxes furnished with blank ends unless knockout information accompanies order. Fronts are furnished for flush or surface mounting; specify when ordering.

**Lighting Panelboards (except Column Type)**  
furnished with Dual Purpose Front; suitable for  
either flush or surface mounting. Standard drill-  
ing furnished on all Lighting Panelboard  
Boxes unless otherwise specified on order.

**Write for complete information regarding additions for special features.**



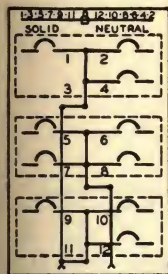
## Type NM1B Trumbull Compact Multi-Breaker Panelboards

3-Wire Mains, 120-240 Volts, A.C.; 2-Wire Branches, 120 Volts, A.C.

15-Ampere, Single-Pole Type MB Multi-Breaker in One Leg; Solid Neutral Bar in Other Leg

## Schedule L

For Panels having all double-pole breakers or combinations of single and double poles, convert to total number of single poles and obtain price of panel, then add \$1.00 for each double-pole substituted for two single poles.



These panels may contain from 2 to 18 double circuits. No panel may contain more than four poles of 35 or 50-ampere capacity which might be in the form of two double-pole 35 or 50-ampere circuits, four 35 or 50-ampere single pole circuits, one 35 or 50-ampere double-pole circuit or two 35 or 50-ampere single pole circuits. For panelboards involving more 35 or 50-ampere poles refer to Type NMM.

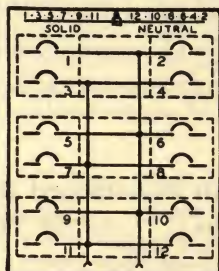
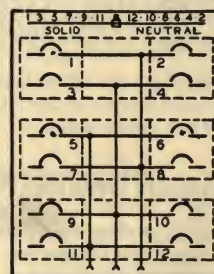
Standard drilling furnished on all lighting panelboard boxes unless otherwise specified on order. Blank box ends will be furnished on all special panelboard boxes unless drilling accompanies order.

Solderless lugs furnished in standard mains.

No. S.P. Mains Cir. Amp.	Mains with Lugs Only			Mains with Circuit Breaker		
	No.	Each	Box No.	No.	Each	Box No.
4 50	NM1B04-3L	\$50.	MB-18	NM1B04-3AB	\$61.	MB-27
6 50	NM1B06-3L	57.	MB-18	NM1B06-3AB	68.	MB-27
8 50	NM1B08-3L	64.	MB-18	NM1B08-3AB	75.	MB-27
10 50	NM1B10-3L	71.	MB-21	NM1B10-3AB	82.	MB-27
12 100	NM1B12-3L	78.	MB-24	NM1B12-3AB	109.	MB-30
14 100	NM1B14-3L	85.	MB-24	NM1B14-3AB	116.	MB-30
16 100	NM1B16-3L	92.	MB-24	NM1B16-3AB	123.	MB-30
18 100	NM1B18-3L	99.	MB-27	NM1B18-3AB	130.	MB-36
20 100	NM1B20-3L	106.	MB-27	NM1B20-3AB	137.	MB-36
22 200	NM1B22-3L	113.	MB-27	NM1B22-3AB	222.	MB-51
24 200	NM1B24-3L	120.	MB-27	NM1B24-3AB	229.	MB-51
26 200	NM1B26-3L	127.	MB-30	NM1B26-3AB	236.	MB-51
28 200	NM1B28-3L	134.	MB-30	NM1B28-3AB	243.	MB-51
30 200	NM1B30-3L	141.	MB-33	NM1B30-3AB	250.	MB-54
32 200	NM1B32-3L	148.	MB-33	NM1B32-3AB	257.	MB-54
34 200	NM1B34-3L	155.	MB-36	NM1B34-3AB	264.	MB-57
36 200	NM1B36-3L	162.	MB-36	NM1B36-3AB	271.	MB-57
38 200	NM1B38-3L	169.	MB-39	NM1B38-3AB	278.	MB-60
40 200	NM1B40-3L	176.	MB-39	NM1B40-3AB	285.	MB-60
42 200	NM1B42-3L	183.	MB-42	NM1B42-3AB	292.	MB-63

## Type NMM Trumbull Multi-Breaker Panelboards

15-Ampere, Single-Pole Type M Multi-Breaker in One Leg; Solid Neutral Bar in Other Leg

3-Wire Mains, 120-240 Volts  
2-Wire Branches, 120 Volts4-Wire Mains, 3-Phase, 120-208 Volts  
2-Wire Branches, 120 Volts

No. Cap. S.P. Mains Cir. Amp.	Mains with Lugs Only			Mains with Circuit Breaker		
	No.	Each	Box No.	No.	Each	Box No.
4 50	NMM04-3L	\$54.	51200	NMM04-3AB	\$65.	51202
6 50	NMM06-3L	63.	51201	NMM06-3AB	74.	51203
8 50	NMM08-3L	72.	51201	NMM08-3AB	83.	51203
10 50	NMM10-3L	81.	51201	NMM10-3AB	92.	51203
12 100	NMM12-3L	90.	51201	NMM12-3AB	121.	51203
14 100	NMM14-3L	99.	51202	NMM14-3AB	130.	51204
16 100	NMM16-3L	108.	51202	NMM16-3AB	139.	51204
18 100	NMM18-3L	117.	51203	NMM18-3AB	148.	51205
20 100	NMM20-3L	126.	51203	NMM20-3AB	157.	51205
22 200	NMM22-3L	135.	51203	NMM22-3AB	244.	61209
24 200	NMM24-3L	144.	51203	NMM24-3AB	253.	61209
26 200	NMM26-3L	153.	51204	NMM26-3AB	262.	61209
28 200	NMM28-3L	162.	51204	NMM28-3AB	271.	61209
30 200	NMM30-3L	171.	51205	NMM30-3AB	280.	61210
32 200	NMM32-3L	180.	51205	NMM32-3AB	289.	61210
34 200	NMM34-3L	189.	51205	NMM34-3AB	298.	61211
36 200	NMM36-3L	198.	51205	NMM36-3AB	307.	61211
38 200	NMM38-3L	207.	51206	NMM38-3AB	316.	61211
40 200	NMM40-3L	216.	51206	NMM40-3AB	325.	61211
42 200	NMM42-3L	225.	51207	NMM42-3AB	334.	61212

No. Cap. S.P. Mains Cir. Amp.	Mains with Lugs Only			Mains with Circuit Breaker		
	No.	Each	Box No.	No.	Each	Box No.
6 50	NMM06-4L	\$68.	51201	NMM06-4AB	\$85.	51203
8 50	NMM08-4L	77.	51201	NMM08-4AB	94.	51203
10 50	NMM10-4L	86.	51201	NMM10-4AB	103.	51203
12 50	NMM12-4L	95.	51201	NMM12-4AB	112.	51203
14 50	NMM14-4L	104.	51202	NMM14-4AB	121.	51204
16 100	NMM16-4L	113.	51202	NMM16-4AB	153.	51204
18 100	NMM18-4L	122.	51203	NMM18-4AB	162.	51205
20 100	NMM20-4L	131.	51203	NMM20-4AB	171.	51205
22 100	NMM22-4L	140.	51203	NMM22-4AB	180.	51205
24 100	NMM24-4L	149.	51203	NMM24-4AB	189.	51205
26 100	NMM26-4L	158.	51204	NMM26-4AB	198.	51206
28 100	NMM28-4L	167.	51204	NMM28-4AB	207.	51206
30 100	NMM30-4L	176.	51205	NMM30-4AB	216.	51207
32 200	NMM32-4L	185.	51205	NMM32-4AB	319.	61210
34 200	NMM34-4L	194.	51205	NMM34-4AB	328.	61211
36 200	NMM36-4L	203.	51205	NMM36-4AB	337.	61211
38 200	NMM38-4L	212.	51206	NMM38-4AB	346.	61211
40 200	NMM40-4L	221.	51206	NMM40-4AB	355.	61211
42 200	NMM42-4L	230.	51207	NMM42-4AB	364.	61212

Prices shown are for 15, 20, 25, 35 and 50-ampere rating. For each double-pole breaker when substituted for two single-poles, add \$1.00.

Universal fronts. Standard drilling furnished on all lighting panelboard boxes unless otherwise specified on order. Blank box ends will be furnished on all special panelboard boxes unless drilling accompanies order.

Solderless lugs furnished in standard mains.



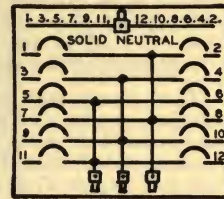
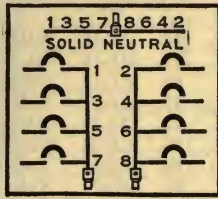
Type NAB Trumbull Circuit Breaker Panelboards

15-Ampere, Single-Pole Type AT Breaker in One Leg; Solid Neutral Bar in Other Leg

Schedule L-3

3-Wire Mains, 115-230 Volts  
2-Wire Branches, 115 Volts

4-Wire Mains, 3-Phase, 120-208 Volts  
2-Wire Branches, 115 Volts



No. Cirs.	Mains Amp.	Mains with Lugs Only			Mains with Circuit Breaker		
		No.	Each	Box No.	No.	Each	Box No.
4	50	NAB304L	\$62.	51200	NAB304AB	\$73.	51202
6	50	NAB306L	75.	51201	NAB306AB	86.	51203
8	50	NAB308L	88.	51201	NAB308AB	99.	51203
10	50	NAB310L	101.	51202	NAB310AB	112.	51204
12	100	NAB312L	114.	51202	NAB312AB	145.	61206
14	100	NAB314L	127.	51203	NAB314AB	158.	61207
16	100	NAB316L	140.	51203	NAB316AB	171.	61207
18	100	NAB318L	153.	51204	NAB318AB	194.	61208
20	100	NAB320L	166.	51204	NAB320AB	197.	61208
22	200	NAB322L	179.	51205	NAB322AB	288.	61211
24	200	NAB324L	192.	51205	NAB324AB	301.	61211
26	200	NAB326L	205.	51206	NAB326AB	314.	61212
28	200	NAB328L	218.	51206	NAB328AB	327.	61212
30	200	NAB330L	231.	51207	NAB330AB	340.	61213
32	200	NAB332L	244.	51207	NAB332AB	353.	61213
34	200	NAB334L	257.	51208	NAB334AB	366.	61214
36	200	NAB336L	270.	51208	NAB336AB	379.	61214
38	200	NAB338L	283.	51209	NAB338AB	392.	61215
40	200	NAB340L	296.	51209	NAB340AB	405.	61215
42	200	NAB342L	309.	51210	NAB342AB	418.	61216

No. Cirs.	Mains Amp.	Mains with Lugs Only			Mains with Circuit Breaker		
		No.	Each	Box No.	No.	Each	Box No.
4	50	NAB404L	\$67.	51200	NAB404AB	\$84.	51202
6	50	NAB406L	80.	51201	NAB406AB	97.	51203
8	50	NAB408L	93.	51201	NAB408AB	110.	51203
10	50	NAB410L	106.	51202	NAB410AB	123.	51204
12	50	NAB412L	119.	51202	NAB412AB	136.	51204
14	50	NAB414L	132.	51203	NAB414AB	149.	51205
16	100	NAB416L	145.	51203	NAB416AB	185.	61207
18	100	NAB418L	158.	51204	NAB418AB	198.	61208
20	100	NAB420L	171.	51204	NAB420AB	211.	61208
22	100	NAB422L	184.	51205	NAB422AB	224.	61209
24	100	NAB424L	197.	51205	NAB424AB	237.	61209
26	100	NAB426L	210.	51206	NAB426AB	250.	61210
28	100	NAB428L	223.	51206	NAB428AB	263.	61210
30	100	NAB430L	236.	51207	NAB430AB	276.	61211
32	200	NAB432L	249.	51207	NAB432AB	383.	61213
34	200	NAB434L	262.	51208	NAB434AB	396.	61214
36	200	NAB436L	275.	51208	NAB436AB	409.	61214
38	200	NAB438L	288.	51209	NAB438AB	422.	61215
40	200	NAB440L	301.	51209	NAB440AB	435.	61215
42	200	NAB442L	314.	51210	NAB442AB	448.	61216

Prices are for 15-ampere breakers; 20 and 25-ampere breakers supplied at same price except increased mains should be added where necessary. For each 35 and 50 ampere breaker, add \$1.00 per single-pole.

Trumbull Circuit Breaker Panelboards

Type ABH, for Lighting and Power Circuits  
Up to 50 Amperes

230 Volts, A.C. or 125-250 Volts, D.C., Maximum

Includes main lugs or main breakers (either 2 or 3 wires), top and bottom gutters with respective section of bus, box and front to circuit edges. Remaining equipment for complete panelboard included in branch circuit prices.

Type of Main	MAIN BUS CAPACITY, AMPERES			
	50	100	225	400
Lugs in Mains, 2-Pole.	\$30.	\$30.	\$30.	\$42.
Lugs in Mains, 3-Pole.	35.	35.	35.	47.
Main Breaker, 2-Pole..	41.	61.	139.	...
Main Breaker, 3-Pole..	52.	75.	169.	...

Branch Circuits

No. of Poles.....	Breaker			Space Only		
	1	2	3	1	2	3
15, 20, 25-Amp. each	\$6.50	.....	\$3.00	.....	.....	.....
35 and 50-Amp. each	7.50	.....	3.00	.....	.....	.....
15, 20, 25, 35, 50-Amps.....each	.....	\$14.50	\$23.00	.....	\$4.00	\$5.00

Solid Neutral Bar

225 Amperes or Less.....each	\$6.00
400 Amperes.....each	18.00

Standard drilling furnished on all lighting panelboard boxes unless otherwise specified on order.

Blank box ends will be furnished on all special panelboard boxes unless drilling accompanies order.

Solderless lugs furnished in standard mains.

Trumbull Panelboard Box Sizes

51200 Series

No.	DIMENSIONS, INCHES		
	Width	Height	Depth
51200	\$6.00 20	16 1/2	4 1/2
51201	6.50 20	19 1/2	4 1/2
51202	7.00 20	22 1/2	4 1/2
51203	8.00 20	25 1/2	4 1/2
51204	9.00 20	28 1/2	4 1/2
51205	10.00 20	31 1/2	4 1/2
51206	11.00 20	34 1/2	4 1/2
51207	12.00 20	37 1/2	4 1/2
51208	13.00 20	40 1/2	4 1/2
51209	15.00 20	43 1/2	4 1/2
51210	17.00 20	46 1/2	4 1/2
51211	19.00 20	49 1/2	4 1/2
51212	21.00 20	52 1/2	4 1/2
51213	24.00 20	55 1/2	4 1/2
51214	27.00 20	58 1/2	4 1/2

61200 Series

No.	DIMENSIONS, INCHES		
	Width	Height	Depth
61200	\$6.00 20	16 1/2	5 3/4
61201	6.50 20	19 1/2	5 3/4
61202	7.00 20	22 1/2	5 3/4
61203	8.00 20	25 1/2	5 3/4
61204	9.00 20	28 1/2	5 3/4
61205	10.00 20	31 1/2	5 3/4
61206	11.00 20	34 1/2	5 3/4
61207	12.00 20	37 1/2	5 3/4
61208	13.00 20	40 1/2	5 3/4
61209	15.00 20	43 1/2	5 3/4
61210	17.00 20	46 1/2	5 3/4
61211	19.00 20	49 1/2	5 3/4
61212	21.00 20	52 1/2	5 3/4
61213	24.00 20	55 1/2	5 3/4
61214	27.00 20	58 1/2	5 3/4
61215	32.00 20	61 1/2	5 3/4
61216	37.00 20	64 1/2	5 3/4

MB Series

51215	32.00 20	61 1/2	4 1/2	MB-18	\$4.50 15	18	4 1/2
51216	37.00 20	64 1/2	4 1/2	MB-21	5.00 15	21	4 1/2
				MB-24	5.50 15	24	4 1/2
				MB-27	6.00 15	27	4 1/2
				MB-30	6.50 15	30	4 1/2
				MB-33	7.00 15	33	4 1/2
				MB-36	7.50 15	36	4 1/2
				MB-39	8.00 15	39	4 1/2
51251	\$3.00 12 1/2	12	4 1/2	MB-42	9.00 15	42	4 1/2
51252	3.20 12 1/2	15	4 1/2	MB-51	10.00 15	51	4 1/2
51253	3.40 12 1/2	18	4 1/2	MB-54	10.50 15	54	4 1/2
				MB-57	11.00 15	57	4 1/2
51254	3.60 12 1/2	21	4 1/2	MB-60	11.50 15	60	4 1/2
51255	3.90 12 1/2	24	4 1/2	MB-63	12.00 15	63	4 1/2



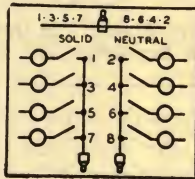
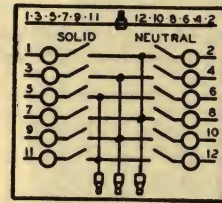
## Trumbull Switch and Fuse Lighting Panelboards

## Standard Type

30-Ampere, Single-Pole Fused Tumbler Switch in One Leg; Solid Neutral in Other Leg

3-Wire Mains, 125-250 Volts  
2-Wire Branches, 125 Volts

Schedule L

4-Wire Mains, 3-Phase, 125-250 Volts  
2-Wire Branches, 125 VoltsMains with Lugs Only  
\*Single DoorMains with Lugs Only  
\*Single Door

No. Cir.	Cap. Mains Amp.	Box No.	Plug Fuses No.	Cart Fuses No.	Each	Approx. Ship. Wt. Lb.
4	60	51200	NTP304L	NTC304L	\$48.00	48
8	60	41201	NTP308L	NTC308L	60.00	58
12	60	51202	NTP312L	NTC312L	72.00	66
16	100	51203	NTP316L	NTC316L	84.00	74
20	100	51204	NTP320L	NTC320L	96.00	87
24	200	51205	NTP324L	NTC324L	108.00	90
28	200	51206	NTP328L	NTC328L	120.00	102
32	200	51207	NTP332L	NTC332L	132.00	106
36	200	51208	NTP336L	NTC336L	144.00	125
40	200	51209	NTP340L	NTC340L	156.00	134

No. Cir.	Cap. Mains Amp.	Box No.	Plug Fuses No.	Cart Fuses No.	Each	Approx. Ship. Wt. Lb.
4	60	51200	NTP404L	NTC404L	\$53.00	48
8	60	51201	NTP408L	NTC408L	65.00	58
12	60	51202	NTP412L	NTC412L	77.00	66
16	60	51203	NTP416L	NTC416L	89.00	74
20	100	51204	NTP420L	NTC420L	101.00	87
24	100	51205	NTP424L	NTC424L	113.00	90
28	100	51206	NTP428L	NTC428L	125.00	102
32	200	51207	NTP432L	NTC432L	137.00	106
36	200	51208	NTP436L	NTC436L	149.00	125
40	200	51209	NTP440L	NTC440L	161.00	134

## Mains with Safety Fuse (Swing Wa)

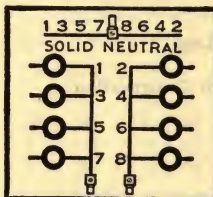
4	60	51203	NTP304SWF	NTC304SWF	\$59.00	67
8	60	51204	NTP308SWF	NTC308SWF	71.00	77
12	60	51205	NTP312SWF	NTC312SWF	83.00	82
16	100	51206	NTP316SWF	NTC316SWF	106.00	87
20	100	51207	NTP320SWF	NTC320SWF	118.00	97
24	200	51209	NTP324SWF	NTC324SWF	158.00	107
28	200	51210	NTP328SWF	NTC328SWF	170.00	117
32	200	51211	NTP332SWF	NTC332SWF	182.00	143
36	200	51212	NTP336SWF	NTC336SWF	194.00	153
40	200	51213	NTP340SWF	NTC340SWF	206.00	163

## Mains with Safety Fuse (Swing Wa)

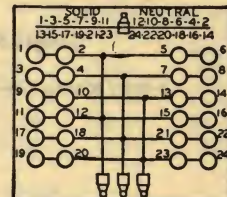
4	60	51203	NTP404SWF	NTC404SWF	\$70.00	67
8	60	51204	NTP408SWF	NTC408SWF	82.00	77
12	60	51205	NTP412SWF	NTC412SWF	94.00	82
16	60	51206	NTP416SWF	NTC416SWF	106.00	87
20	100	51207	NTP420SWF	NTC420SWF	134.00	97
24	100	51208	NTP424SWF	NTC424SWF	146.00	107
28	100	51209	NTP428SWF	NTC428SWF	158.00	117
32	200	51211	NTP432SWF	NTC432SWF	211.00	143
36	200	51212	NTP436SWF	NTC436SWF	223.00	153
40	200	51213	NTP440SWF	NTC440SWF	235.00	163

## Plug Fuse Type

Single Plug Fuse in One Leg; Solid Neutral in Other Leg—Single Door Construction

3-Wire Mains, 125-250 Volts  
2-Wire Branches, 125 Volts

Mains with Lugs Only

4-Wire Mains, 3-Phase, 125-250 Volts  
2-Wire Branches, 125 Volts

Mains with Lugs Only

No.	Each	No. Cir.	Cap. Mains Amp.	Box No.	Approx. Ship. Wt. Lb.
NP316L	\$60.00	16	100	51201	56
NP324L	72.00	24	200	51202	63
NP332L	96.00	32	200	51203	68
NP340L	96.00	40	200	51204	85

## Mains with Safety Fuse (Swing Wa)

NP308SWF	\$59.00	8	60	51203	65
NP316SWF	82.00	16	100	51204	75
NP324SWF	122.00	24	200	51206	84
NP332SWF	134.00	32	200	51207	94
NP340SWF	146.00	40	200	51208	105

No.	Each	No. Cir.	Cap. Mains Amp.	Box No.	Approx. Ship. Wt. Lb.
NP416L	\$65.00	16	60	51201	56
NP424L	77.00	24	100	51202	63
NP432L	89.00	32	200	51203	68
NP440L	101.00	40	200	51204	85

## Mains with Safety Fuse (Swing Wa)

NP408SWF	\$70.00	8	60	51203	65
NP416SWF	82.00	16	60	51204	75
NP424SWF	110.00	24	100	51205	84
NP432SWF	163.00	32	200	51207	94
NP440SWF	175.00	40	200	51208	105

\*For door-in-door, add \$16 to price, and add suffix D to number.

Numbers and price include combined panel, barriers, code gage steel cabinet and tumbler switches. Fuses not included.

Standard drilling furnished on all lighting panelboard boxes unless otherwise specified on order. Blank box ends will be furnished on all special panelboard boxes unless drilling accompanies order. Solderless lugs standard in the mains.

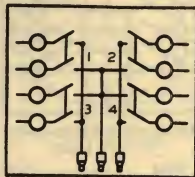


## Trumbull Switch and Fuse Lighting Panelboards

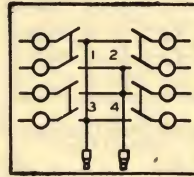
Schedule L

## Standard Type

30-Ampere, Double-Pole Fused Tumbler Switches, No Neutral Bar

3-Wire Mains, 125-250 Volts  
2-Wire Branches, 125 VoltsMains with Lugs Only  
\*Single Door

No. Cir.	Cap. Mains Amp.	Box No.	Plug Fuses No.	Cart Fuses No.	Each
4	60	51201	TP304L	TC304L	\$61.00
6	60	51202	TP306L	TC306L	71.00
8	60	51203	TP308L	TC308L	81.00
10	60	51204	TP310L	TC310L	91.00
12	60	51205	TP312L	TC312L	101.00
14	100	51206	TP314L	TC314L	111.00
16	100	51207	TP316L	TC316L	121.00
18	100	51208	TP318L	TC318L	131.00
20	100	51209	TP320L	TC320L	141.00

2-Wire Mains, 125 Volts  
2-Wire Branches, 125 VoltsMains with Lugs Only  
\*Single Door

No. Cir.	Cap. Mains Amp.	Box No.	Plug Fuses No.	Cart Fuses No.	Each
4	60	51201	TP204L	TC204L	\$56.00
6	60	51202	TP206L	TC206L	66.00
8	100	51203	TP208L	TC208L	76.00
10	100	51204	TP210L	TC210L	86.00
12	200	51205	TP212L	TC212L	96.00
14	200	51206	TP214L	TC214L	106.00
16	200	51207	TP216L	TC216L	116.00
18	200	51208	TP218L	TC218L	126.00
20	200	51209	TP220L	TC220L	136.00

Mains with Safety Fuse (Swing-Wa)  
\*Single Door

4	60	51204	TP304SWF	TC304SWF	\$72.00
6	60	51205	TP306SWF	TC306SWF	82.00
8	60	51206	TP308SWF	TC308SWF	92.00
10	60	51207	TP310SWF	TC310SWF	102.00
12	60	51208	TP312SWF	TC312SWF	112.00
14	100	51209	TP314SWF	TC314SWF	133.00
16	100	51210	TP316SWF	TC316SWF	143.00
18	100	51211	TP318SWF	TC318SWF	153.00
20	100	51212	TP320SWF	TC320SWF	163.00

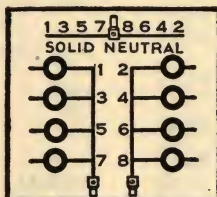
Mains with Safety Fuse (Swing Wa)  
\*Single Door

4	60	51204	TP204SWF	TC204SWF	\$73.00
6	100	51205	TP206SWF	TC206SWF	99.00
8	100	51206	TP208SWF	TC208SWF	109.00
10	100	51207	TP210SWF	TC210SWF	119.00
12	200	51209	TP212SWF	TC212SWF	170.00
14	200	51210	TP214SWF	TC214SWF	180.00
16	200	51211	TP216SWF	TC216SWF	190.00
18	200	51212	TP218SWF	TC218SWF	200.00
20	200	51213	TP220SWF	TC220SWF	210.00

## Narrow Plug Fuse Type

## Single Fuse in One Leg; Solid Neutral in Other Leg

3-Wire Mains, 125-250 Volts; 2-Wire Branches, 125 Volts—Single Door Construction



Mains with Lugs Only

No. ....	NRP3G04	NRP3G08	NRP3G12	NRP3G16	NRP3G20
Each. ....	.....	.....	.....	.....	.....
No. of Circuits. ....	4	8	12	16	20
Capacity Mains. .... amperes	60	60	60	100	100
Box No. ....	51251	51252	51253	51254	51255

\*For door-in-door, add \$16 to prices, and add suffix D to number.

Number and price includes combined panel, barriers, code gage steel cabinet and tumbler switches. Fuses not included in price.

Standard drilling furnished on all lighting panelboard boxes unless otherwise specified on order.

Blank box ends will be furnished on all special panelboard boxes unless drilling accompanies order. Solderless lugs standard in the mains.



## Trumbull Lighting and Power Distribution Panels

## Convertible Circuit Breakers—Converti-Fuse—Swing-Wa

600 Volts and Less, A.C. or D.C.

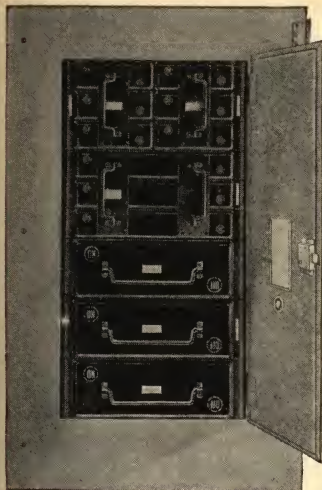
Single-Phase or D.C.—2 or 3-Wire

Service 3-Phase—3-Phase 3-Wire or 3-Phase 4-Wire

## Schedule L

**Converti-Fuse Panelboard.** Designed for 600-volt service. Branch circuits are available in 1, 2, or 3-pole, from 30 to 400 amperes, inclusive. Consists of an assembly of unit bakelite sections mounted on a steel back plate, or channel iron construction depending on size of panel. Has dead front design, interchangeable individual base sections and removable caps, and solderless lugs in mains.

**Swing-Wa Panelboard.** Designed for 600 volts a.c. service. Branch circuits can be furnished in 2 or 3-pole, 30 to 400 amperes, inclusive. Individual units are enclosed in protective steel compartments and allow for the maximum of interchangeability, flexibility, and rearrangement of circuits. Furnished with an operating handle, full floating contacts, thermostatic contact reinforcements, and solderless lugs in mains.



Converti-Fuse



Swing-Wa

Table 1—Mains with Lugs Only

Largest Branch, Amperes	Size of Mains, Amperes				
	200 (225)	400	600	800	1200
200 (225) and Less.....	\$40.00	\$50.00	\$70.00	\$90.00	\$125.00
400.....		70.00	90.00	115.00	150.00
600.....			110.00	150.00	190.00

**Mains Other than Lugs.** Select proper rating and add as branch circuit price, Tables 2B, 3B or 2C, 3C or 2S, 3S.

## Convertible Circuit Breakers—Branch Circuits

Table 2B

250 Volts, A.C. Maximum—125/250 Volts, D.C.

TRIP RATING Frame Amperes		Branch Circuit			Space Only			Branch Circuit			Space Only		
		Single-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit	Single-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit
50AT	15-20-25	\$9.00	.....	.....	\$4.00	.....	.....	.....	.....	.....	.....	.....	.....
50AT	35-50	10.00	.....	.....	4.00	.....	.....	.....	.....	.....	.....	.....	.....
100AT	15-20-25-35-50	.....	\$19.00	\$27.00	.....	\$5.00	\$7.00	\$34.00	\$43.00	\$5.00	\$7.00	.....	.....
100ATB	15-20-25-35-50	.....	23.00	31.00	.....	5.00	7.00	.....	.....	.....	.....	.....	.....
100ATB	70-90-100	.....	33.00	44.00	.....	5.00	7.00	44.00	55.00	5.00	7.00	.....	.....
225AT	125-150-175-200-225	.....	113.00	141.00	.....	16.00	24.00	133.00	168.00	16.00	24.00	.....	.....
400AT	250-275-300-325-350-400	.....	280.00	360.00	.....	30.00	40.00	300.00	387.00	30.00	40.00	.....	.....
600AT	450-500-550-600	.....	325.00	420.00	.....	30.00	40.00	345.00	447.00	30.00	40.00	.....	.....

Table 2C

250 Volts Maximum

Ampere Capacity	*Double Branch			Space Only			*Double Branch			Space Only		
	Single-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit	Single-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit	Single-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit	Single-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit
30-30	†\$10.00	†\$10.00	†\$14.00	†\$4.00	†\$4.00	†\$4.00	\$18.00	\$22.00	\$26.00	\$4.00	\$4.00	\$4.00
60-60	†10.00	†12.00	†17.00	†4.00	†6.00	†8.00	18.00	22.00	26.00	4.00	6.00	8.00
100-100	†11.00	†21.00	†31.00	†4.00	†6.00	†8.00	.....	.....	.....	.....	.....	.....
Ampere Capacity	Single Branch			Space Only			Single Branch			Space Only		
	Single-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit	Single-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit	Single-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit	Single-Pole Per Circuit	2-Pole Per Circuit	3-Pole Per Circuit
100	\$11.00	\$21.00	\$31.00	\$8.00	\$12.00	\$16.00	\$30.00	\$40.00	\$50.00	\$8.00	\$12.00	\$16.00
200	22.00	44.00	66.00	17.00	16.00	24.00	70.00	90.00	110.00	12.00	16.00	24.00
400	60.00	110.00	160.00	30.00	40.00	40.00	120.00	170.00	220.00	30.00	40.00	40.00

\*Price is per circuit but must be priced in pairs. Circuits 30, 60, or 100 amperes can be asorted in pairs, with the largest unit governing the price. Applies to Tables 2C, 3C, 2S and 3S.

†For 250-volt panel only with 30, 60, or 100-ampere main or branch circuits only, and main busses not over 600 amperes, deduct \$10.00 from prices.

## Table 2S and 3S—Swing-Wa—Branch Circuits

For Swing-Wa construction, add 10 per cent to branch circuit Converti-Fuse prices in Tables 2C and 3C. Limited to 2 and 3-pole branch circuits only.

Table 4—Solid Neutral

Ampere Rating.....	200 (225)	400	600	800	1200
Each.....	\$14.00	\$18.00	\$25.00	\$33.00	\$42.00

Table 5—Double, Feed-Thru or Sub-Feed Lugs

No. of Bus Bars	Ampere Rating				
	200 (225) Each	400 Each	600 Each	800 Each	1200 Each
2	\$10.00	\$20.00	\$35.00	\$50.00	\$60.00
3	13.00	24.00	40.00	55.00	65.00

**Blank Box Ends** (removable) are furnished as standard unless knockout information accompanies order.

**Panelboards** furnished with dual purpose front, suitable

for either flush or surface mounting.

**Solderless Lugs** in main busses are standard. Furnished in branch circuits when requested at no additional charge.



# Trumbull Circuit Breaker Distribution Power Panelboards

Schedule L



Used for automatic overload current protection for heavy duty light and power distribution.  
**Application.**—Available for 125-250 volts a.c. and d.c. systems and 600 volts a.c. Branch circuits are available from 15 to 600 amperes inclusive, 2 and 3-pole.

**Construction.**—Sectionalized type with breakers mounted on steel back plates, making it possible to provide space in the cabinet for future additional circuits, or to interchange circuits. The larger size circuit breakers above 50-ampere frame equipped with removable trips units, thus allowing in certain instances desirable changes in capacity without removing the unit itself. Because of standard breaker dimensions, it is also possible to interchange units of different poles or capacities. Solderless lugs standard in mains.

**Note.**—Panelboards furnished with dual purpose front, suitable for either flush or surface mounting. Boxes without knockouts unless arrangement specified on order. Base price includes main lugs (either single or 3-phase), top and bottom gutter, with respective sections of bus, box and front to circuit edge. Remaining equipment for complete panelboard included in circuit prices.

**Main Breakers.**—Figure same as branch circuit from circuit prices after adding base price considering main breaker as largest branch circuit. X=1 $\frac{3}{8}$  inches.

Dimensions		
Box Width.....	inches	28
Box Depth.....	inches	9 $\frac{1}{2}$
Gutter Width.....	inches	5

## Trumbull Special Features

The following special features are available on all panelboards unless indicated otherwise:

*Increased Gage Over Standard, Maximum 10 Gage: Box Only or Front Only..... each	\$15.00	*Special Front or Door Arrangements: Non-Standard Door-In-Door with 1 Door Over Interior and Additional Door Exposing Wiring Gutter..... set	\$20.00
*Increased Gutters Over Standard: For Each 12-In. Increase (or Fraction Thereof) in Length (Ends)..... each	20.00	Double or Split Doors, One Above the Other. each	20.00
†For Each 5-In. Increase (Or Fraction Thereof) in Width (Sides)..... each	20.00	One Front with Two Doors, in Place of 2 individual Fronts, to Cover 2 Boxes Side by Side..each	20.00
†For Increased Depth Up to 8-In. Max. on Lighting Panels, or 14-In. Max. on Distribution Panels..... each	20.00	*Finishes, Hot Dipped Galvanized: Box Only or Front Only, Up to 20x48 In...each	50.00
*Weatherproof Cabinets: †Single Door, Width Less Than 20 In..... each	45.00	Box and Front, Up to 20x48 In..... per set	75.00
†Single Door, Width Over 20 In..... each	60.00	Box Only or Front Only, Up to 30x48 In...each	100.00
†Door Back of Door, Width less than 20 In. each	60.00	Box and Front, Up to 30x48 In..... per set	130.00
†Door Back of Door, Over 20 In..... each	90.00	*Finishes, Cadmium Plated: Box Only or Front Only, Up to 20x48 In...each	20.00
*Dust-Resisting Cabinet, Felt or Rubber Gaskets for Door and Front Only: Boxes, Not over 20 In. Wide..... each	30.00	Box and Front, Up to 20x48 In..... per set	35.00
Boxes, Over 20 In. Wide..... each	40.00	Box Only or Front Only, Up to 30x48 In...each	45.00
*Mounting Only any Standard Wall-Mounted Wiring Device (Pilot Lamps, Tumbler Switches) in Front of Box (Device Not Included): First Device..... each	10.00	Box and Front, Up to 30x48 In..... per set	70.00
Additional Devices..... each	5.00	*Special Paint (Special Paint is any Finish Except Aluminum, Black, Brown, Crystallac, Gray, Green, or Prime Coat): Box, Front, or Both..... each	30.00
Mounting Only Instruments (Time Clocks, etc.) (Device not included): Drilling Only, No Increase in Box Size.....	20.00	*Galvanized Sheet Steel Front..... each	20.00
		*Glass Door Panel in Steel or Wood Frame. per door	45.00
		Directory, Special Frame..... each	3.00
		Directory, Glass..... No Extra Charge	
		Spring Door Hinges, Bommer, Brass or Iron..... per pair	4.00

\*Deduct 25 per cent when individual order calls for duplicate cabinets with same special features, or when a quantity of ten or more assorted panelboards is involved.

†Not Applicable to column type.

Continued



## Trumbull Special Features

Concluded

### Special Locking Arrangements:

Vault Handle & 3-Point Catch, when Not Std. set.....	\$15.00
Extra Lock on Inner Door of Door-In-Door Panel.....each	2.50
Special Locks (Corbin No. 2510-2520, Yale No. 511-511S).....each	14.00
Special Locks (Corbin No. 2720, Yale No. R272, R274-5101S).....each	7.00
Master Keying (Applies Only to Above Locks) Only with other Locks of Same Type Number.....add per lock	1.00

Panelboard interiors and fronts to fit existing boxes. Panelboards furnished without boxes to take care of old installations. No credit will be allowed from price of complete panelboard for omitting box. Price of panel interior and special front will be price of complete standard panelboard having desired interior, providing existing box is same depth as Trumbull standard for the one being ordered. If existing box is shallower or deeper than Trumbull standard, extra charges are made as follows:

Panel Interior and Front to Fit Existing Box Which is Shallower.....add to complete panel	\$35.00
Panel Interior and Front to Fit Existing Box Which is Deeper.....add to complete panel	10.00

### Circuit Breakers In Mains—Column Type Panelboards Additions for Main Lugs

Ampere Capacity.....	50	100	200
2-Pole.....	\$15.00	\$33.00	\$118.00
3-Pole.....	23.00	44.00	Not Available

### Remote Control Switches

Complete installation except push-button controls.

Ampere Capacity	Mech. Held		Elec. Held	
	2-Pole Each	3-Pole Each	2-Pole Each	3-Pole Each
\$30	\$71.00	\$85.00	Not Available	
30	121.00	139.00	\$87.00	\$95.00
60	145.00	169.00	115.00	130.00
75	169.00	193.00	Not Available	
100	189.00	213.00	139.00	163.00
150	277.00	311.00	227.00	273.00
200	328.00	375.00	247.00	302.00

### Increased Main Bus Capacity—Lighting Types

Amps. to Amps.	No. of Poles	Lugs Only		Swing-Wa Each	Circuit Breaker Each
		2-Pole Each	3-Pole Each		
60 (or 50) 100	2	\$10.00	\$16.00	\$25.00	
	3	10.00	21.00	28.00	
60 (or 50) 200 (225)	2	10.00	44.00	96.00	
	3	10.00	62.00	122.00	
100 200 (225)	2	10.00	33.00	83.00	
	3	10.00	46.00	99.00	

### Sub-Feeds—Lighting Panelboards—Limit, One Per Board

Amperes	Lugs Only		Swing-Wa		Circuit Brks.	
	2-Pole Each	3-Pole Each	2-Pole Each	3-Pole Each	2-Pole Each	3-Pole Each
50 or 60	\$6.00	\$6.00	\$15.00	\$22.00	\$15.00	\$23.00
100	6.00	6.00	24.00	36.00	33.00	44.00
200	6.00	6.00	55.00	83.00	118.00	141.00

### Split Bus and Meter Loop—Lighting Panelboards

Amperes	2 Hot Bus Bars		3 Hot Bus Bars
	Each	Each	Each
200 and Below	\$15.00		\$20.00

### Split Bus and Meter Loop—Distribution Panelboards

225 and Below	\$25.00	\$30.00
400	30.00	35.00
600	35.00	40.00
800	50.00	55.00
1200	60.00	65.00

\*Limited to lighting panelboards.

†Not available on NM1B.

### Copper Density, 800 Amperes per Square Inch:

Lighting Panelboards, Main Busses Only.....each	\$10.00
Distribution Panelboards, Main Busses Only.....each	25.00
Cadmium or Silver Plated Connecting Straps and Bus Bars.....per pole	.60

Main Lugs, Location Top and Bottom . . . no extra charge  
Neutral Bar, Lighting Panelboards: Omission . . . no credit  
Non-Automatic Circuit Breakers:

Mains Only . . . . .	Use automatic circuit breaker prices
Main or Sub-Feed Switch, Unfused . . . . .	use fusible switch prices
For tumbler switch and fuse lighting panelboards requiring some fusible only branches, figure panelboards on basis of total number of branches, and for each fuse only branch. Deduct . . . . .	each \$1.00
For Tumbler switch and fuse lighting panelboards requiring 3-way tumbler switches in panel. Add . . . . .	pair \$25.00
For 2-phase, 5-wire, lugs only in mains, lighting panelboards, use price of single-phase, 3-wire panelboard with equivalent number of branches and add \$15.	
Handle Lock-Off . . . . .	each \$1.00

Space for Future Circuits: Where space only is desired figure total number of branches, including spaces, and deduct as follows:

Type NTP or NTC, for 4 Single Poles (1 Unit).....each	\$6.00
Type TP or TC, for 2 Two-Poles (1 Unit).....each	6.00
Type NM1B-NMM and NMMXX, for Each Space.	1.00
Type NQ, for Each Space.....	2.00
Type NAB, for Each Space.....	3.00
Type NP or NRP . . . . .	No Deduction

Multi-Breaker Units Only: Replacement and exchange; write for information and prices.

For 2/2-wire, 250-volt tumbler switch panelboards: use the same price as corresponding 125-volt panelboard.

For lighting panelboards having 3/3-wire, 125-250-volt solid neutral branches use list price of 2/2-wire, 250-volt panelboard and add for neutral bar . . . . . \$6.00

For 3/2-wire, tumbler switch panelboards for use on 3/2-wire, 3-phase to single-phase, use price corresponding to TC3 panel for maximum 250-volt or TP3 for 125-volt service.

For lighting panelboards for use on 2-phase, 5-wire, 125-250-volt solid neutral service, use price of 3-wire single-phase, 125-250-volt solid neutral service panel of equivalent number of branches, and add . . . . . \$15.00

For lighting panelboards of the NTP and NTC types, having combinations of single and double-pole branches, convert to total number of single poles and add \$1.50 for each double-pole substituted for each two single poles.

For circuit breaker panels having combination tumbler switched and some fusible only branches requiring only one door opening, prices should be determined by figuring the panel as occupying the same space as an equivalent panel with tumbler switches in all branches less a deduction of \$1.50 each for each single-pole or \$2.50 for each double-pole tumbler switch omitted.

Where number of circuits requires a box larger than standard, figure as two or more separate and distinct panels plus appropriate additions for special features. Panels can be furnished in one box or separate boxes. Add for sub-feed lugs for inter-connecting panels. Tie cables are not included. Where tie bus bars must be furnished, refer to your nearest supply house.

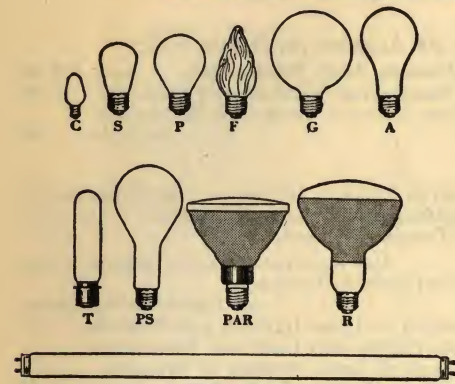


## G-E Lamps

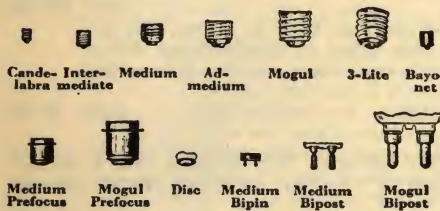
## Bulb and Base Designations

## How to Order Lamps

Lamps should be ordered by the lamp ordering abbreviations as listed. Each abbreviation is complete without any other specifications except that the correct voltage must be supplied. Abbreviations which are complete without voltage include the series lamps listed in lumens and amperes, fluorescent lamps, and



## BASE DESIGNATIONS



the lamp numbers for S (Sunlight) lamps, H (Mercury) lamps, glow lamps, miniature (auto, flashlight, etc.) lamps, photoflash, photoflood, and photographic enlarger lamps.

Orders for lamps not specifically listed will require the complete specifications, as follows:

Specification	Multiple Lamps	Series Lamps
Size.....	150 Watts	2500 Lumens
Volts or Amps.	120 Volts	15 Amperes
Bulb.....	A-19, PS-30, G-25, etc.	PS-25 PS-40, etc.
Base.....	Med. Screw, Mogul Screw, Candelabra Screw, etc.	
Finish.....	Clear, Inside, Frosted, White Bowl, Daylight, etc.	
Service.....	Projection, Train, etc.	Street Lighting

## Special Lamps

Any lamp requiring a change in construction from the standard, in voltage, bulb shape or finish, basing or special etching will take a special price, which may be obtained upon application. All orders for special lamps except special etching may be filled either short or in excess, within the limits of 10 per cent, except that on orders for ten lamps or less there will not be any shortage or excess. Orders for lamps with special etching may be filled either short or in excess by 5 per cent; on orders for less than forty lamps the shortage or excess may equal but not exceed two lamps.

## Discount Schedule for Purchasers

A standard package of large lamps is defined as a package, as packed by manufacturer, of that standard package quantity designated for each lamp in the manufacturer's price schedule, and the lamps in such a standard package may not be of different specifications.

## To Purchasers without Contract

Minimum list value for immediate delivery to one point.	
Less than \$5.00.....	No discount
\$5.00.....	discount 20%
\$15.00 or a Standard Package*.....	discount 25%

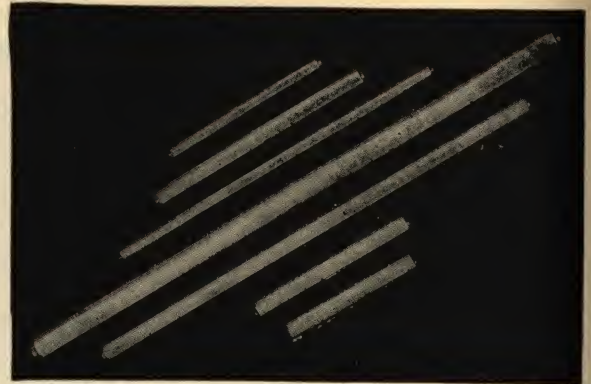
## To Purchasers under Contract

Basis of Form E or CE Contract	DISCOUNT, PER CENT	Basis of Form E or CE Contract	DISCOUNT, PER CENT
\$15.00 or less		\$15.00 or less	
More		More	
\$300.00	26	\$20,000.00	35
600.00	28	35,000.00	36
1500.00	30	65,000.00	37
3500.00	32	100,000.00	38
7500.00	33	150,000.00	39
15000.00	34	200,000.00	40

\*On a purchase of \$15 or more list value or on a purchase of less than \$15 list value which includes standard package. Discount is for immediate delivery to one point.

†On purchases of broken packages amounting to less than \$15 list value. Discount is for immediate delivery to one point.

## G-E Fluorescent Lamps



Fluorescent lamps are for use only with specially designed auxiliary equipment to produce proper electrical values. Recommended for use only with equipment providing good power factor. This type of equipment assures maximum use from the wiring system. Certain counter balanced equipment provides good power factor with the added advantage of providing more constant light.

## Miniature Bipin Base \*

## \*Rated Average Life—2500 Hours

Approx. Lamp Length	BULB	Color	Lamp Ordering Abbrev.	Diam. Inches	Std. Pkg. Qty.	Each
6 9	T-5	4500 White	F 6T 5/45W	5/8	24	\$.75
6 6		Daylight	F 6T 5/D	5/8	24	.75
6 6		3500° White	F 6T 5/W	5/8	24	.75
8 12	T-5	4500 White	F 8T 5/45W	5/8	24	.85
8 8		Daylight	F 8T 5/D	5/8	24	.85
8 8		3500° White	F 8T 5/W	5/8	24	.85
13 21	T-5	4500 White	F13T 5/45W	5/8	24	.95

## Medium Bipin Base

## \*Rated Average Life—2500 Hours

Lamp Length	Size	Color	Lamp Ordering Abbrev.	Diam. Inches	Std. Pkg. Qty.	Each
14 15	T-12	4500 White	F14T12/45W	1 1/2	24	\$.75
14 14		3500° White	F14T12/W	1 1/2	24	.75
\$15 18	T-8	4500 White	F15T8/45W	1 1/2	24	.62
15 15		Daylight	F15T 8/D	1	24	.62
15 15		3500° White	F15T 8/W	1	24	.62
15 15		Soft White	F15T 8/SW	1	24	.72
15 18	T-12	4500 White	F15T12/45W	1 1/2	24	.75
15 15		Daylight	F15T12/D	1 1/2	24	.75
15 15		3500° White	F15T12/W	1 1/2	24	.75
15 15		Soft White	F15T12/SW	1 1/2	24	.85
20 24	T-12	4500 White	F20T12/45W	1 1/2	24	.75
20 20		Daylight	F20T12/D	1 1/2	24	.75
20 20		3500° White	F20T12/W	1 1/2	24	.75
20 20		Soft White	F20T12/SW	1 1/2	24	.85
\$30 36	T-8	4500 White	F30T8/45W	1	24	.75
30 30		Daylight	F30T 8/D	1	24	.75
30 30		3500° White	F30T 8/W	1	24	.75
30 30		Soft White	F30T 8/SW	1	24	.85
\$40 48	T-12	4500 White	F40T12/45W	1 1/2	24	1.00
40 40		Daylight	F40T12/D	1 1/2	24	1.00
40 40		3500° White	F40T12/W	1 1/2	24	1.00
40 40		Soft White	F40T12/SW	1 1/2	24	1.15
40 40		4500 White	F40T12/45W/IS/H1 1/2	1 1/2	24	1.20

## Mogul Bipin Base

## \*Rated Average Life—3000 Hours

Lamp Length	Size	Color	Lamp Ordering Abbrev.	Diam. Inches	Std. Pkg. Qty.	Each
100 60	T-17	4500 White	F100T17/45W	2 3/8	12	\$2.30
100 100		Daylight	F100T17/D	2 3/8	12	2.30
100 100		3500° White	F100T17/W	2 3/8	12	2.30
100 100		Soft White	F100T17/SW	2 3/8	12	2.50

\*Life under specified test Conditions.

†For total, add auxiliary watts.

§Blue (F15T8/B), green (F15T8/G), and pink (F15T8/PK), 77 cents. Gold (F15T8/GO) and red (F15T8/R), 87 cents.

||Blue (F20T12/B), green (F20T12/G), pink (F20T12/PK), 90 cents. Gold (F20T12/GO) and red (F20T12/R), \$1.00.

¶Blue (F30T8/B), green (F30T8/G), and pink (F30T8/PK), 90 cents. Gold (F30T8/GO) and red (F30T8/R), \$1.00.

\*\*Blue (F40T12/B), green (F40T12/G), pink (F40T12/PK), \$1.25. Gold (F40T12/GO) and red (F40T12/R), \$1.35.



## G-E Slimline Fluorescent Lamps



G-E slimline fluorescent lamps are recommended for their decorative value as well as for lighting.

For store lighting, industrial lighting, showcases, and decoration as architectural elements.

Available in diameters of  $\frac{3}{4}$  or 1 inch; lamp lengths are 42, 64, 72, and 96 inches. Furnished for multiple operation.

When ordering, specify lamp ordering abbreviation.

## Single Pin Base

\*Rated Average Life—2500 Hours

Approx. Lamp Watts	Bulb Length Inches	Size	Color	Lamp Ordering Abbrev.	Std. Pkg. Qty.	Each
16-25	42	T-6	4500 White	F42T6/45W	24	\$1.55
24-39	64	T-6	4500 White	F64T6/45W	24	1.75
22-38	72	T-8	4500 White	F72T8/45W	12	2.00
29-51	96	T-8	4500 White	F96T8/45W	12	2.70

\*Life under specified test conditions.

## G-E Circline Fluorescent Lamps

Used in commercial and industrial applications as well as in residential floor and table lamps. Color, 3500 white.



Has 4-pin base.

Rated average life under specified test conditions, 2500 hours.

Standard package, 12.

## 32 Watts—12-Inch Lamps

T-10 bulb. Lamp ordering abbreviation, FC12T10/W. Each..... \$1.75

22 Watts—8 $\frac{1}{4}$ -Inch Lamps

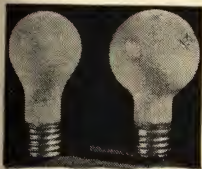
T-9 bulb. Lamp ordering abbreviation FC8T9/W. Each..... \$1.70

A 16-inch diameter lamp is contemplated.

## G-E Three-Lite Lamps

## 3-Contact

115, 120 and 125 Volts



PS-25, G-30

Has two separate filaments in a single bulb.

Burn base down.

Each filament of different wattage may be lighted separately or in combination with the other to produce three levels of illumination.

## Mogul Screw Base

No. of Watts	Each	Bulb	Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
50-100-150	\$ .44	PS-25, Inside Frosted...	50/150	60
100-200-300	.55	G-30, Inside Frosted Indirect.....	100/300	60

## Medium Screw Base

No. of Watts	Each	Bulb	Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
30- 70-100	\$ .27	A-21, Inside Frosted...	30/100	120
50-100-150	.33	PS-25, Inside Frosted...	50/150M	60

## G-E General Lighting Service Lamps

115, 120 and 125 Volts



A-15 A-19 A-19 A-21 PS-25 PS-35

For ordinary use in homes, stores, offices, schools and factories. The light maintenance, particularly in the lamps of higher wattage, is best when lamps are burned vertically, base up.

Finishes: clear, inside frosted for diffusion; white bowl for open type equipment.

## Medium Screw Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
15	.11	A-15, Inside Frosted.....	15A15	120
25	.11	A-19, Inside Frosted.....	25A	120
40	.11	A-19, Inside Frosted.....	40A	120
50	.11	A-19, Inside Frosted.....	50A	120
60	.11	A-19, Inside Frosted.....	60A	120
75	.15	A-21, Inside Frosted.....	75A	120
100	.15	A-21, Inside Frosted.....	100A	120
150	.20	PS-25, Inside Frosted.....	150	60
150	.20	PS-25, Clear.....	150/CL	60
150	.25	PS-25, Inside White Bowl....	150/WB	60
200	.27	PS-30, Clear.....	200	60
200	.27	PS-30, Inside Frosted.....	200/IF	60
200	.32	PS-30, Inside White Bowl....	200/WB	60
300	.40	PS-30, Clear (750 Hours).....	300M	60
300	.45	PS-30, Inside Frosted (750 Hrs.)	300M/IF	60

## Mogul Screw Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
300	\$ .65	PS-35, Clear (1000 Hours)....	300	24
300	.70	PS-35, Inside Frosted (1000 Hours).....	300/IF	24
300	.70	PS-35, Inside White Bowl (1000 Hours).....	300/WB	24
500	.95	PS-40, Clear.....	500	24
500	1.00	PS-40, Inside Frosted.....	500/IF	24
500	1.00	PS-40, Inside White Bowl....	500/WB	24
750	2.90	PS-52, Clear.....	750	6
750	3.05	PS-52, Inside Frosted.....	750/IF	6
1000	3.10	PS-52, Clear.....	1000	6
1000	3.30	PS-52, Inside Frosted.....	1000/IF	6
1500	4.75	PS-52, Clear.....	1500	6

## G-E Vibration and Rough Service Lamps

## Medium Screw Base

115, 120 and 125 Volts



A-19 A-23

**Rough service lamp** withstands severe shock and bumps, as with extension cords.

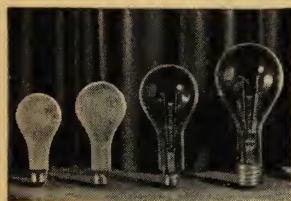
**Vibration service lamp** designed to withstand high frequency vibration such as is produced by high-speed machinery.

## Rough Service

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
50	\$ .25	A-19, Inside Frosted.....	50A/RS	120
100	.35	A-23, Inside Frosted.....	100A/RS	120
<b>Vibration Service</b>				
50	\$ .20	A-19, Inside Frosted.....	50A/VS	120
100	.35	A-23, Inside Frosted.....	100A23/28	120



## G-E Daylight Lamps



115, 120 and 125 Volts

Due to its blue color, this lamp emits a whiter light which is a partial step toward natural daylight.

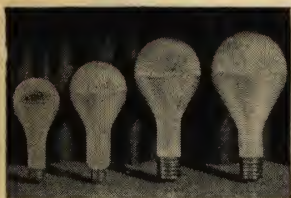
Has many industrial and commercial applications.

A-23 PS-25 PS-30 PS-35

Medium Screw Base			Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
No. of Watts	Each	Bulb		
10	\$.30	S-14, Clear	10S14/D	120
25	.30	A-19, Clear	25A/D	120
60	.25	A-19, Inside Frosted	60A/D	120
100	.25	A-23, Inside Frosted	100A/D	120
150	.40	PS-25, Clear	150/DCL	60
150	.45	PS-25, Inside Frosted	150/D	60
200	.70	PS-30, Clear	200/D	60
200	.75	PS-30, Inside Frosted	200/DIF	60
Mogul Screw Base				
300	\$1.10	PS-35, Clear	300/D	24
500	1.85	PS-40, Clear	500/D	24

## G-E Silvered Bowl Lamps

115, 120 and 125 Volts



PS-25 PS-30 PS-35 PS-40

For indirect lighting applications. The permanent coating of mirror silver on the bowl is a highly efficient reflecting surface, built right into the lamp itself. The silver is protected from peeling or tarnishing by coatings of copper and aluminum.

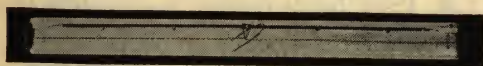
Medium Screw Base			Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
No. of Watts	Each	Bulb		
60	\$.24	A-19, Inside Frosted	60A/SB	120
100	.28	A-23, Inside Frosted	100A/SB	120
*150	.45	PS-25, Inside Frosted	150/SB	60
*200	.67	PS-30, Inside Frosted	200/SBIF	60
Mogul Screw Base				
*300	\$1.20	PS-35, Inside Frosted	300/SBIF	24
*500	1.70	PS-40, Inside Frosted	500/SBIF	24

\*Should be used only in porcelain sockets and in fixtures so designed that the temperatures of the lamp and fixture do not exceed limits for satisfactory operation.

## G-E Lumiline Lamps

Disc Base

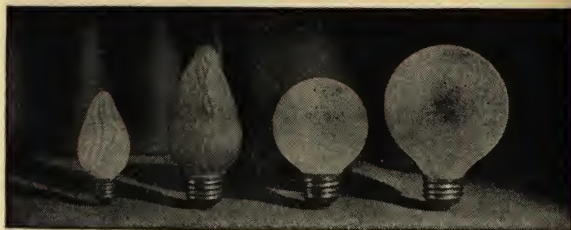
115, 120 and 125 Volts



Provides continuous lines of clear or colored light of low brightness. Ideally suited to modern decorative concepts for built-in illumination or application decoration; for lighted displays, niches, mirrors, etc.

No. of Watts	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	Over-all Lgth. In.	No. in Std. Pkg.	Each
30	T-8, Clear	L30	17 <sup>3</sup> / <sub>4</sub>	24	\$.95
30	T-8, Inside Frosted	L30/IF	17 <sup>3</sup> / <sub>4</sub>	24	.95
30	T-8, White	L30/W	17 <sup>3</sup> / <sub>4</sub>	24	1.05
30	T-8, Straw	L30/ST	17 <sup>3</sup> / <sub>4</sub>	24	1.05
40	T-8, Clear	L40	11 <sup>3</sup> / <sub>4</sub>	24	.83
40	T-8, Inside Frosted	L40/IF	11 <sup>3</sup> / <sub>4</sub>	24	.83
40	T-8, White	L40/W	11 <sup>3</sup> / <sub>4</sub>	24	.93
40	T-8, Straw	L40/ST	11 <sup>3</sup> / <sub>4</sub>	24	.93
60	T-8, Clear	L60	17 <sup>3</sup> / <sub>4</sub>	24	.95
60	T-8, Inside Frosted	L60/IF	17 <sup>3</sup> / <sub>4</sub>	24	.95
60	T-8, White	L60/W	17 <sup>3</sup> / <sub>4</sub>	24	1.05
60	T-8, Straw	L60/ST	17 <sup>3</sup> / <sub>4</sub>	24	1.05

## G-E Flame Shape and Round Bulb Lamps

Outside Coated  
115, 120, and 125 Volts

F-10 F-15 G-18 1/2 G-25

Adapted to many decorative uses in homes, clubs, lobbies, and public buildings where the bulb shape is related to the artistic design of the luminaire.

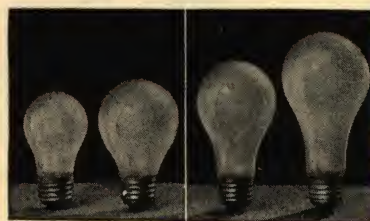
Outside coated lamps are not recommended for outdoor use.

Candelabra Base			Lamp Ordering Abbrev. (Ex. Volts)	Std. Pkg.
Watts	Each	Bulb and Finish		
15	\$.20	F-10*	15FC/*	60
Medium Base				
25	\$.16	F-15*	25F/*	120
25	.30	G-18 1/2, White	25G18 1/2/W	120
40	.35	G-25, White	40G/W	60

\*Colors: flament (FT), white (W), ivory (V). Substitute color symbol in place of \* in ordering abbreviation, thus, 15FC/V.

## G-E Country Home Lamps

Medium Screw Base—30 Volts



Medium Screw Base			Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
No. of Watts	Each	Bulb		
15	\$.20	A-17, Inside Frosted	15A	120
25	.20	A-19, Inside Frosted	25A	120
50	.20	A-21, Inside Frosted	50A21	120
100	.33	A-23, Inside Frosted	100A	120

Designed for battery-generator sets as used on farms.

When ordering, specify Country Home.

## G-E Floodlight and Spotlight Lamps

115, 120 and 125 Volts



G-30 G-40 G-40

Floodlight and spotlight lamps may be burned in any position from vertical base down to horizontal.

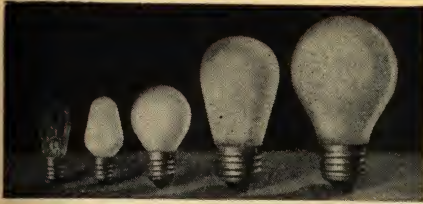
## Floodlight Service

For use in floodlighting equipment designed to give a narrow beam of light which can be projected a relatively long distance.

Medium Screw Base			Lamp Ordering Abbrev. (Ex. Volts)	Light Center Length Inches	No. in Std. Pkg.
No. of Watts	Each	Bulb			
250	\$1.15	G-30, Clear	250G/FL	3	24
Mogul Screw Base					
500	\$2.10	G-40, Clear	500G/FL	4 1/4	12
1000	5.00	G-40, Clear	1M/G40FL	5 1/4	12
Spotlight Service					
A properly adjusted mirror adds up to 50 per cent to the light in the beam.					
Medium Screw Base					
100	\$.80	P-25, Clear	100P25SP	3	60
250	1.15	G-30, Clear	250G/SP	3	24
400	1.75	G-30, Clear	400G/SP	3	24
Mogul Screw Base					
1000	\$5.00	G-40, Clear	1M/G40SP4 1/4	4 1/4	12



## G-E Display Lighting Lamps

115, 120 and  
125 Volts

Inside colored lamps particularly adaptable to exposed lamp signs and colorful displays where lamps

themselves are visible and form display pattern.

## Medium Screw Base

No. of Watts	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.	Each
7½	S-11, Outside Coated White.	7½S/W	120	\$ .11
7½	S-11, Outside Coated Red...	7½S/R	120	.11
10	S-14, Clear.....	10S14	120	.14
10	S-14, Inside Frosted.....	10S14/1F	120	.14
*10	S-14, Inside Colored.....	10S14/*	120	.19
†25	A-19, Inside Colored.....	25A/†	120	.19
‡25	A-19, Outside Coated.....	25A/‡	120	.16
25	A-19, White.....	25A/W	120	.16
60	A-19, White.....	60A/W	120	.16

## Candelabra Screw Base

No. of Watts	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.	Each
6	S-6, Clear.....	6S6	120	\$ .16
†7	C-7, Clear.....	7C7	120	.11

## Intermediate Screw Base

No. of Watts	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.	Each
10	S-11, Clear.....	10S11N	120	\$ .15
10	S-11, Inside Col. White.....	10S11N/W	120	.20

\*Furnished in red (R), blue (B), green (G), yellow (Y), amber-orange (AO). Substitute color symbol in place of \* in ordering abbreviation, thus : 10S14/R.

†Furnished in 120 volts.

‡Furnished in red (R), blue (B), green (G), yellow (Y), amber-orange (AO), flamentint (FT), ivory (IV). Substitute color symbol in place of ‡ in abbreviation, thus : 25A/R.

§Furnished in red (OR), blue (OB), green (OG), amber-orange (OAO), flamentint (OFT), ivory (OV). Substitute color symbol in place of § in abbreviation, thus : 25A/OR.

## G-E Natural Colored Lamps

## Medium Screw Base

115, 120 and 125 Volts



The four lamps in natural colored, clear glass bulbs cover a large percentage of present demands.

Prices are for the manufacturers standard colored glass only.

No. of Watts Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.	Each
S-14	A-19	A-21		
10 \$ .40	S-14, Amber or Blue.....	10S14/N*	120	
10 .50	S-14, Green.....	10S14/NG	120	
10 .50	S-14, Ruby.....	10S14/NR	120	
25 .40	A-19, Amber or Blue.....	25A/N*	120	
25 .50	A-19, Green.....	25A/NG	120	
25 .50	A-19, Ruby.....	25A/NR	120	
40 .40	A-21, Amber or Blue.....	40A/N*	120	
40 .55	A-21, Green.....	40A/NG	120	
40 .55	A-21, Ruby.....	40A/NR	120	
60 .45	A-21, Amber or Blue.....	60A21/N*	120	
60 .60	A-21, Green.....	60A21/NG	120	
60 .60	A-21, Ruby.....	60A21/NR	120	

Blue shade does not include daylight blue or photographic blue. Green comes in one shade only. Substitute color symbol in place of \* in ordering abbreviation, thus : 10S14/NA.

Ruby and amber colors furnished in light shade. Dark shade, used in photographic work, can be furnished at same price.

## G-E Tubular Bulb Lamps

115, 120, and 125 Volts

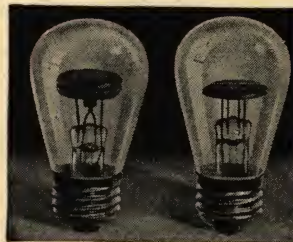
This low wattage tubular lamp is used for show-case lighting, in shallow-depth displays, and in small trough-like reflectors.

## Intermediate Screw Base

No. of Watts Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
25 \$ .38	T-6½, Clear.....	25T6½	60
25 \$ .27	T-10, Clear.....	25T10	60
25 .30	T-10, Inside Frosted.....	25T10/IF	60
25 .65	T-10, Reflector; Light Inside Frosted.....	25T10/RFL	60
40 .65	T-10, Reflector; Light Inside Frosted.....	40T10/RFL	60
40 .95	T-8, Clear.....	40T8	24
40 .33	T-10, Clear.....	40T10	60

## G-E Clear Neon Glow Lamps

105-125 Volts



NE-40

NE-34



NE-30

NE-45

**Screw Base Lamps.** Required series resistor mounted within base. See values marked IN in column, Series Resistance. Lamps may be applied to higher circuit voltages by use of suitable external resistors—information on request.

**Bayonet Base Lamps.** External means must be provided to limit current to normal amount. External resistors, to be supplied by users, should be of the values marked EX in column, Series Resistance, for rated volts.

Average useful life approximately 3000 hours except NE-2 which is in excess of 25,000 hours when operated with 200,000 ohms series resistance on 105-125 volts.

Packed 10 in unit package, except No. NE-2 which is packed 100 in unit package.

Watts (Nominal)	Bulb	Base	Order Designation	Maximum Overall Length Inches	APPROXIMATE STARTING VOLTAGE A.C.D.C.	Series Resistance Ohms	Each
3	S-14	Medium Screw.....	NE-40	3½	60 85	2200 IN	\$ .60
3	S-14	Sk. D. C. Bay. Cand.	NE-42	3¼	60 85	2200 EX	.65
2	S-14	Medium Screw.....	NE-34	3½	60 85	3500 IN	.50
2	S-14	Sk. D. C. Bay. Cand.	NE-36	3¼	60 85	3500 EX	.55
1	G-10	Medium Screw....	NE-30	2½	60 85	4800 IN	.40
1	G-10	D. C. Bay. Cand...	NE-32	2½	60 85	4800 EX	.45
†1	G-10	Medium Screw....	NE-56	2½	60 85	40500 IN	.40
¼	T-4½	Cand. Screw.....	NE-58	1½	65 90	100000 IN	.40
¼	T-4½	D. C. Bay. Cand...	NE-16	1½	..	30000 EX	.42
¼	T-4½	Cand. Screw.....	NE-45	1½	65 90	30000 IN	.40
¼	T-4½	D. C. Bay. Cand...	NE-48	1½	65 90	30000 EX	.35
½	T-2	Unbared (Wire Term)	NE-2	1½	65 90	200000 EX	.08
½	T-3½	S. C. Bay. Min....	NE-51	1½	65 90	200000 EX	.10
¼	T-4½	D. C. Bay. Cand...	NE-17	1½	55 70	30000 EX	.45
¼	T-4½	Cand. Screw.....	NE-57	1½	55 70	30000 IN	.40

Nos. NE-34 and NE-40 are supplied with red sprayed finish at additional charge of 5 cents each.

\*Applies to new lamp.

†210-250 volts.

‡The 1½-inch dimension is for glass parts only; the lamp has wire terminals which extend 1½ inch.

||Designed for 67-87 volts, d.c. (D.C. operating voltage at 1.5 milliamperes, 53-65 volts).

¶D.C. starting voltage is for lamps connected so that center electrode is negative.



## G-E Projector and Reflector Lamps

115, 120 and 125 Volts

PAR-38,  
Projector SpotPAR-38,  
Projector FloodR-40,  
Reflector

The projector flood and spot lamps may be used indoors or outdoors, wherever reflectors must be free from the effects of weather, vapor, dust and deterioration. Made of hard glass.

The reflector flood and spot lamps provide a concentrated beam for feature store and window displays, or a spread beam for floodlighting interiors and operations. Not for outdoor use.

## Projector Lamps

## Spot Lamp—Medium Skirted Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
*150	\$1.55	PAR-38.....	150PAR/SP	12

## Flood Lamp—Medium Skirted Base

*150	\$1.55	PAR-38.....	150PAR/FL	12
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## Reflector Lamps

## Spot Lamp—Medium Screw Base

†150	\$1.05	R-40, Light Inside Frosted.	150R/SP	24
*†300	1.55	R-40, Light Inside Frosted.	300R/SP	24

## Flood Lamp—Medium Screw Base

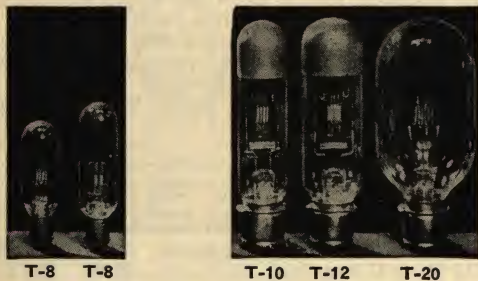
†150	\$1.05	R-40, Inside Frosted.	150R/FL	24
*†300	1.55	R-40, Inside Frosted.	300R/FL	24

\*Should be burned only in porcelain sockets.

†May not give satisfactory performance if any accessory lighting equipment is attached to, or touches, glass bulb.

## G-E Projection and Stereopticon Lamps

115, 120 and 125 Volts



T-8 T-8

T-10 T-12 T-20

Characterized by extreme concentration of light source.

## Single Contact Bayonet Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	Rated Life Hours	Max. Overall Lgth. In.	Aver. Light Ctr. Lgth. In.	No. in Std. Pkg.
100	\$ .55	T-8, Clear	100T8/108SC	50	3 1/8	†1 3/8	24
150	1.30	T-8, Clear	150T8/70	25	3 3/8	†1 3/8	24

## Medium Prefocus Base

*300	2.70	T-10	300T10P	25	5 3/4	†2 3/16	24
*500	3.50	T-10	500T10P	25	5 3/4	†2 3/16	24
500	2.20	T-20, Clear	500T20P	50	5 3/4	†2 3/16	6
*750	4.10	T-12	750T12P	25	5 3/4	†2 3/16	24
*1000	6.00	T-12	IM/T12P	10	5 3/4	†2 3/16	24

## Mogul Prefocus Base

1000	\$4.75	T-20, Clear	IM/T20P	50	9 1/2	†3 1/16	12
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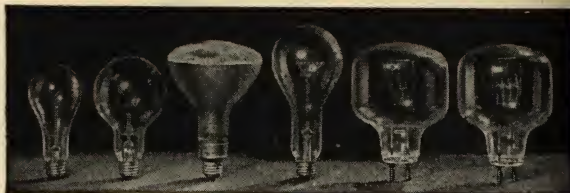
\*Clear bulb with opaque end.

†Light center length is distance from center of light source to top of base pins.

†Light center length is distance from center of light source to top of base fin.

## G-E Infrared Industrial Lamps

115-125 Volts (Design Volts 115)



A-23 G-30 R-40 PS-30 T-40 T-40

For service other than illumination. Speeds up drying and surface heating processes, by radiation. Used in drying photographic prints, industrial and automotive finishes, food products, localized heating, surface moisture, motor and transformer windings, blueprints, pottery, etc.

## Medium Base

For average installation of tunnel or gang set-up methods. Used in practically any commercial drying reflector.

Watts	Each	Bulb and Finish	Lamp Ordering Abbrev. (Ex. Volts)	Std. Pkg.
100	\$ .45	A-23 Clear	100A23/50	120
250	1.00	G-30 Clear	250G30/34	60
250	.85	PS-30 Clear	250PS30/32	60

## Medium Skirted Base

This reflector drying lamp fits into many specialty jobs not otherwise readily equipped.

125	\$ .70	G-30 Clear	125G30	60
125	1.15	R-40 Light I.F.	125R40	24
250	.80	G-30 Clear	250G30	60
250	1.25	R-40 Light I.F.	250R40/4	24
375	1.50	R-40 Light I.F.	375R40	24

## Medium Bipost Base

For use where higher heat densities are required or space is limited.

500	\$5.50	*T-40 Clear	500T40	12
1000	7.00	*T-40 Clear	1M/T40	12

## With 6-Inch Pigtail Terminals Spot-Welded to Medium Bipost Base

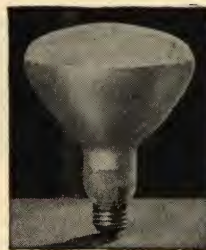
1000	\$7.00	*T-40 Clear	1M/T40/3	12
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\*Heat-resisting glass bulb.

## G-E Reflector Infra-Red Heat Lamps

## Medium Base

115-125 Volts (Design Volts 115)



R40/1 and R40/9 similar in construction. The R40/9 is less bright and easier on the eyes. The R40/10 has built-in red filter to further reduce brightness; is more rugged and has special glass providing protection against breakage by splashing water.

Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
250	\$1.10	R-40 Light Inside Frosted	250R40/1	24
250	1.70	R-40 Light Inside Frosted	250R40/9	24
250	2.95	R-40 Red Bowl	250R40/10	24

Schedule of discounts to purchasers without contract does not apply to this lamp. A discount of 25 per cent of list will be allowed on non-contract purchases of one or more standard packages of this lamp.

## G-E Home Appliance Lamps

115, 120, and 125 Volts

Furnished with D.C. bayonet candelabra base. Standard package, 60.

When ordering, specify voltage.

No. ....	15T7DC	25T8DC
Each. ....	\$ .25	.25
Watts. ....	15	25
Type Bulb. ....	T-7 Clear	T-8 Clear



## G-E Photoflash Lamps



SM 5 6 11 22B 22 31 50

### No. SM Speed Midget Lamps

Has swift, low-intensity flash, for all-around near-distance pictures, in proper reflectors. Stops action on open flash about as effectively as a 1/200th second shutter setting.

Total light, 5,500 lumen seconds. For battery flashing only.

B-11 clear bulb, single contact bayonet base.

No. SM, Packed 8 in a carton, 120 in a case. ....each \$.14

### No. 5 Synchro-Press Lamps

For all-around flash pictures in proper reflectors. Split-second flash for synchronized use with between-the-lens shutters. For battery flashing only. Total light, 16,000 lumen seconds. B-11 clear bulb, single contact bayonet base.

No. 5, Packed 8 in a carton, 120 in a case. ....each \$.14

### No. 5B Synchro-Press Lamps

Same construction as No. 5, with blue filter coating for correct reproduction with daylight type color film. For daylight film without filter or to supplement daylight in outdoor color shots. For battery flashing only. Total light, 7,000 lumen seconds. B-11 blue bulb, single contact bayonet base.

No. 5B, Packed 8 in a carton, 120 in a case. ....each \$.18

### No. 6 Focal Plane Lamps

For use with most focal plane shutters. Same size, and uses same reflectors as No. 5. Flash on batteries only. Total light output, 15,000 lumen seconds. Bulb, B-11, clear.

No. 6, Packed 8 in a carton, 120 in a case. ....each \$.16

### No. 11 Synchro-Press Lamps

A small, general purpose lamp for open-flash shots, and for accurate synchronizers in press and amateur use, with between-the-lens shutters. For battery flashing only. Total light, 28,000 lumen seconds. A-15 clear bulb, medium screw base.

No. 11, Packed 8 in a carton, 120 in a case. ....each \$.14

### No. 22 Synchro-Press Lamps

For use with front-shutter cameras. Filled with shredded foil, which increases total light output, giving a broad peak to compensate for errors in synchronization. Operates on 3 to 125 volts. Total light 60,000 lumen seconds. A-19 clear bulb, medium screw base.

No. 22, Packed 6 in a carton, 120 in a case. ....each \$.16

### No. 22B Synchro-Press Lamps

Old No. 21B. For press use and between-the-lens shutter synchronizers. Has blue filter coating for correct rendition with outdoor type of film.

Voltages, from 3 to 125. Total light output, 26,000 lumen seconds. Bulb, A-19, clear.

No. 22B, Packed 6 in a carton, 120 in a case. ....each \$.22

### No. 31 Focal Plane Lamps

For high shutter speed synchronization with focal plane shutters for 4x5-inch negative size and less. Peak of illumination provides ample light on the subject during the full time the shutter is open. For battery flashing only.

Total light, 75,000 lumen seconds. A-21 clear bulb, medium screw base.

No. 31, Packed 6 in a carton, 60 in a case. ....each \$.25

### No. 50 Photoflash Lamps

For commercial photography, particularly color work. Contains shredded foil. Voltages, from 3 to 125. Total light output, 93,000 lumen seconds. Bulb, A-21, clear.

No. 50, Packed 6 in a carton, 60 in a case. ....each \$.23

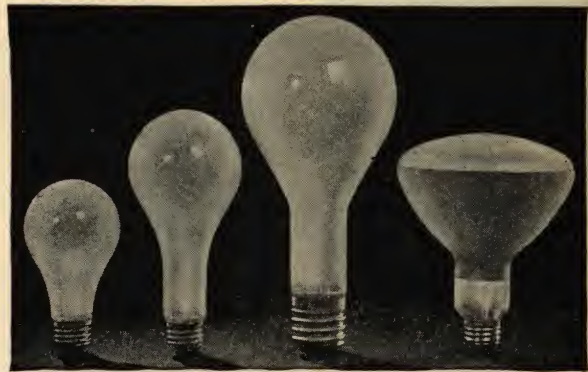
### No. 50B Photoflash Lamps

Similar to No. 50 except that the blue filter coating is carefully matched to the color characteristics of daylight color emulsions. Has 30 millisecond peak, synchronizes at 1/25 second. Operates on 3 to 125 volts d.c. or a.c. Has medium screw base. Bulb, A-21.

No. 50B, Packed 6 in a carton, 60 in a case. ....each \$.29

## G-E Photoflood Lamps

115-120 Volts, A.C. or D.C.



No. 1

No. 2

No. 4

No. RFL2

### Nos. 1 and B1 Lamps

Same size as a standard 60-watt lamp, drawing 250 watts at 115 volts (2.2 amperes), yet photographically equal to as much as 750 watts in standard lighting lamps.

As many as six of these lamps may be safely used on one regular house lighting circuit.

Rated life, 3 hours at 115 volts.

A-21 bulb, inside frosted, medium screw base.

Packed 6 in a carton, 60 in a case.

No. 1. ....each \$.16

No. B1, Blue. ....each .30

### Nos. 2 and B2 Lamps

Same size as a standard 150-watt lighting lamp, drawing 500 watts at 115 volts (4.4 amperes), yet photographically equal to as much as 1500 watts in standard lighting lamps.

Three of these lamps may be safely used on one regular house lighting circuit. Rated life, 6 hours at 115 volts.

PS-25 bulb, inside frosted, medium screw base.

Packed 6 in a carton, 60 in a case.

No. 2. ....each \$.30

No. B2, Blue. ....each .60

### Nos. 4 and B4 Lamps

Same size and shape as the regular 300-watt general service lamp with mogul screw base. Draws 1000 watts at 115 volts (8.7 amperes).

Twice as effective photographically as the regular 1000-watt lamp. Rated life, 10 hours at 115 volts.

PS-35 bulb, inside frosted, mogul screw base.

Packed 1 in a carton, 24 in a case.

No. 4. ....each \$1.20

No. B4, Blue. ....each 1.75

### No. RFL2 Lamps

Gives a smooth 60° controlled beam. Highly reflective inside surface of mirror aluminum in reflector-shaped bulb 5 inches in diameter, 6½ inches overall.

R-40 bulb, inside frosted, medium screw base.

Packed 1 in a carton, 24 in a case.

No. RFL2. ....each \$.95

### No. RSP2 Reflector Photospots

Identical in size, shape, wattage, life and color temperature with No. RFL2. Ideal for highlighting, backlighting and edgelighting. Its light has been squeezed into a beam of approximately 20°—resulting in a punch of light more than seven times more powerful than that of No. RFL2.

R-40 bulb, inside frosted, medium screw base.

Packed 1 in a carton, 24 in a case.

No. RSP2. ....each \$1.10

## G-E Photographic Enlarger Lamps

115-125 Volts, A.C. or D.C.

Medium Screw Base

No.	Each	Watts	Bulb	Life Hrs.	Case Qty.	Car- ton Qty.
*111	\$.44	75	S-11, White.....	25	120	6
211	.33	75	A-21, White.....	100	60	6
212	.33	150	A-21, White.....	100	60	6
213	.33	250	A-21, White.....	3	60	6
302	1.00	500	PS-30, White.....	100	24	1

\*Single contact bayonet base.



## G-E Sunlight Lamps



S-1

S-4



RS

**\*No. S-4—Admedium Screw Base**

Emits characteristic blue-green light of mercury spectrum. Because of lower current requirements, 100 watts, it permits the use of smaller, lighter fixtures.

Has A-21, bulb, clear. Standard package, 6.

No. S-4.....each \$11.00

**\*No. S-1—Mogul Screw Base**

Has approximately the same ultraviolet potency as the No. S-4, but delivers a larger proportion of visible light and more infra-red energy or heat. Total input, 400 watts.

Has PS-22 inside frosted bulb. Standard package, 6.

No. S-1.....each \$4.75

**No. RS—Medium Screw Base**

Has self-contained reflector and operates directly from 110-125 volt house current with no auxiliary ballast required. Total input, 275 watts.

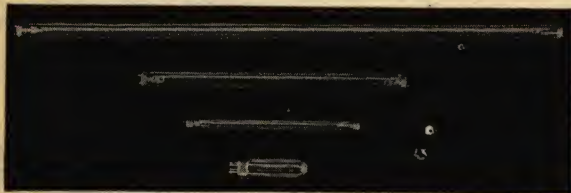
Has R-40 inside frosted bulb. Standard package, 6.

No. RS.....each \$9.95

\*Operate on a.c. only, with proper auxiliary equipment.

Schedule of discounts to purchasers without contract does not apply to this lamp. A discount of 25 per cent of list will be allowed on non-contract purchases of one or more standard packages of this lamp.

## G-E Germicidal Lamps



Short-wave ultraviolet energy, known as far ultraviolet, will kill air-borne bacteria, if the bacteria are exposed to a sufficient intensity for a long enough time.

The lamps listed, for small wattage consumption, produce potent ultraviolet, germ-killing radiation.

Should be used only in properly designed, correctly installed fixtures, to shield eyes and skin from direct exposure.

**Medium Bipin Base**

Watts	Each	Bulb (9741 Glass)	Ultra- violet Output Watts	Lamp Ordering Abbreviation	Std. Pkg.
15	\$4.50	T-8, Clear	2.9	G15T8	24
30	6.75	T-8, Clear	7.2	G30T8	24

**Miniature Bipin Base**

Watts	Each	Bulb	Ultra- violet Output Watts	Lamp Ordering Abbreviation	Std. Pkg.
8	\$4.25	T-5, Clear	1.5	G8T5	24

## G-E White Night Light Lamps

**Candelabra Screw Base**

120 Volts

Designed for small plug-in receptacles to be used as night lights in homes. C-7 bulb.

Packed 120 in a standard package.

No. of Watts.....	7
Each.....	\$ .13
Lamp Ordering Abbreviation (Except Volts).....	7C7/W

## G-E H (Mercury) Lamps

G-E H lamps produce almost twice as many lumens per watt as incandescent lamps. Designed for use on standard lighting circuits with special auxiliary equipment designed to produce correct lamp starting and operating values.

When used in combination with equal lumens of incandescent light, objectives are seen in the approximate daylight colors. Several minutes are required for mercury lamps to come up to full brilliance.

**Type H-1**, 400 watts, consists of an interior arc tube, containing the electrodes and mercury, enclosed within an outer tubular



H-1



H-4

bulb which makes the lamp less subject to the effects of surrounding temperature.

**Type H-4**, 100 watts, is sometimes referred to as a capillary lamp, because the arc discharge takes place within a small capsule-like tube of quartz. The outer bulb serves merely as a protective container.

**Type H-9**, 3000 watts, consists of a single tube 48 inches long. Its light output of 120,000 lumens is more than any other lamp used in industrial lighting. Particularly recommended for high ceiling interiors.

	Mogul Screw Base	Adm. Base	S.C. Term Base
No. ....	†A-H1	A-H4	A-H9
Each.....	\$10.50	11.50	48.00
*No. of Watts.....	400	100	3000
Outer Bulb, Clear.....	T-16	T-10	T-9½
Rated Average Lab. Life..... hours	†4000	†1000	†3000
No. in Standard Package.....	6	6	1

When No. A-H4 lamp is operated on direct current a polarity reversing switch should be installed to avoid the possibility of electrolysis in the lamps.

\*For total, add auxiliary watts.

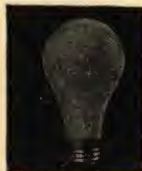
†Life under specified test conditions.

‡Burn within 10° of vertical base up.

## G-E Mine Lamps

275 and 300 Volts

Has A-19 inside frosted bulb.



Watts	Each	Volts	Lamp Ordering Abbreviation (Exc. Volts)	Std. Pkg.
50	\$ .27	275	50A19	120
50	.27	300	50A19	120

## G-E High Voltage Lamps

230 and 250 Volts

Less rugged and less efficient than 110, 125-volt lamps, but available for use in the few locations where only the higher voltage is obtainable.

**Medium Screw Base**

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex-Volts)	No. in Std. Pkg.
25	\$ .16	A-19, Inside Frosted.....	25A	120
50	.16	A-19, Inside Frosted.....	50A	120
100	.24	A-23, Inside Frosted.....	100A	120
200	.50	PS-30, Clear.....	200	60
200	.55	PS-30, Inside Frosted.....	200/IF	60

**Mogul Screw Base**

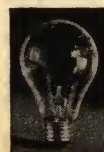
Watts	Each	Bulb	Lamp Ordering Abbrev.	No. in Std. Pkg.
300	\$ .85	PS-35, Clear.....	300	24
500	1.40	PS-40, Clear.....	500	12
750	3.50	PS-52, Clear.....	750	6
1000	3.75	PS-52, Clear.....	1000	6

## G-E Traffic Signal Lamps

**Medium Screw Base**

115, 120 and 125 Volts

Has clear bulb, a short light center length, and produces enough light to make possible a signal indication of requisite brightness.



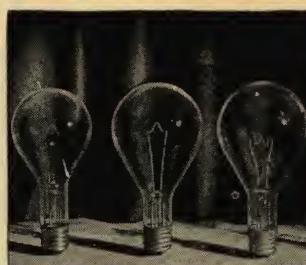
A-21

Watts	Each	Bulb	Ordering Abbrev.	Std. Pkg.
60	\$ .25	A-21, Clear	60A21/TS	120
67	.30	A-21, Clear	67A21/40	120



## G-E Street Series Lighting Lamps

### Mogul Screw Base



<b>PS-35</b>	<b>PS-40</b>	<b>PS-40</b>
	<b>6000</b>	<b>10,000 and</b>
	<b>Lumens</b>	<b>15,000 Lumens</b>

### 115, 120 and 125 Volts

## Car Lighting

### 5-In-Series—105, 110, 115, 120, 125 and 130 Volts

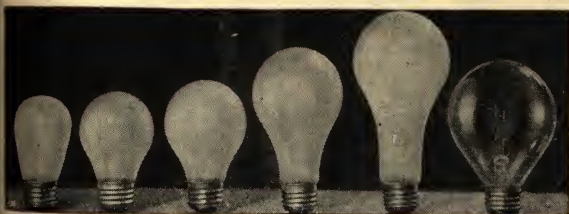
### Cutout Lamps—30 Volts

1.0	\$ .30	A-19, Inside Frosted . . . .	1A/A19	120
1.6	.35	A-21, Inside Frosted . . . .	1.6A/A21	120

\*Mogul screw base. †Amperes.

## G-E Train and Locomotive Lamps

### Medium Screw Base



S-14      A-17      A-19      A-21      A-23      P-25

**Locomotive Headlighting.** When operated at the rated voltage, in suitable headlight equipment, this lamp gives satisfactory service. Bulb must be protected from water which might strike it while hot. The 250-watt lamp is designed for road locomotives; 100-watt for switching locomotives.

## Train

Lamp  
Ordering  
Abbrev.  
(Ex. Volts)

No. in Std. Pkg.	DESCRIPTION	PRICE
1	...	...
2	...	...
3	...	...
4	...	...
5	...	...
6	...	...
7	...	...
8	...	...
9	...	...
10	...	...
11	...	...
12	...	...
13	...	...
14	...	...
15	...	...
16	...	...
17	...	...
18	...	...
19	...	...
20	...	...
21	...	...
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23	...	...
24	...	...
25	...	...
26	...	...
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33	...	...
34	...	...
35	...	...
36	...	...
37	...	...
38	...	...
39	...	...
40	...	...
41	...	...
42	...	...
43	...	...
44	...	...
45	...	...
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49	...	...
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84	...	...
85	...	...
86	...	...
87	...	...
88	...	...
89	...	...
90	...	...
91	...	...
92	...	...
93	...	...
94	...	...
95	...	...
96	...	...
97	...	...
98	...	...
99	...	...
100	...	...

No. of Watts	Each	30 and 60 Volts Bulb	Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
15	\$.20	A-17, Inside Frosted.....	15A	120
25	.20	A-19, Inside Frosted.....	25A	120
50	.20	A-21, Inside Frosted.....	50A21	120
100	.33	A-23, Inside Frosted.....	100A	120

**Locomotive Headlight**  
32 Volts

100	\$ .90	A-21, Clear.....	100A21/3	120
250	1.40	P-25, Clear.....	250P25	60

### Locomotive Cab

15	\$ .20	S-14, Inside Frosted.....	15S14/1F	120
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## G-E Aviation Lamps



A-19 G-25 T-20 T-32

Airport code beacons take the 500-watt PS-40 bulb general service lamp fitted with mogul prefocus base, while the ai way code beacons use the 200-watt PS-30 bulb general service lamp with mogul prefocus base.

### Aircraft Landing Lamps Medium Prefocus Base

No. of Watts	Each	No. of Volts	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
240	\$4.25	12	A-19, Clear	240A19	12
420	\$5.00	12	Mogul Prefocus Base G-25, Clear	420G25P	12

## Airport Floodlight Lamps

Mogul Bipost Base					
1500	\$15.00	32	T-24, Clear	1500T24	12
3000	22.00	32	T-32, Clear	3M/T32	6

## Airway and Airport Beacon Lamps

500	\$3.50	115, 120, 125	Mogul Screw Base T-20, Clear	500T20/24	12
1000	\$6.50	115, 120, 125	Mogul Bipost Base T-20, Clear	1M/T20BP	12

**Airport Floodlight and Motion Picture Lamps**  
Mogul Bipost Base

Intended for use as floodlights for airports and for motion picture and color photography. Should be burned base down. Approximate mean color temperature is 3350° K.

5000	\$23.00	115, 120, 125	T-64, Clear	5M/T64/1	1
10000	65.00	115, 120, 125	G-96, Clear	10M/G96/2	1





### G-E Sealed Beam Lamps

Made of glass with a sealed beam.  
Standard package, 8.

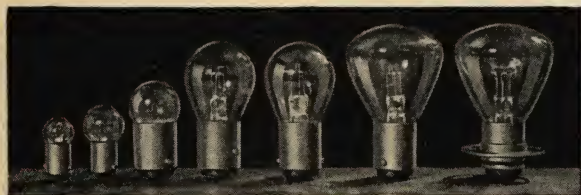
#### With 3 Contact Lugs

No.	Each	Description	Watts	Volts	Type Bulb
4030	\$1.30	Sealed Beam..	45-35	6-8	PAR-56
4430	1.70	Sealed Beam..	45-35	12-16	PAR-56

#### With Screw Terminals

No.	Each	Description	Watts	Volts	Type Bulb
4012	\$1.35	Clear Fog....	35	6-8	PAR-46
4012A	1.60	Amber Fog....	35	6-8	PAR-46
4015	1.35	Clear Fog....	35	6-8	PAR-36
4015A	1.60	Amber Fog....	35	6-8	PAR-36
4013	1.30	Tractor.....	25	6-8	PAR-46
4535	1.75	Spotlight....	30	6-8	PAR-46

### G-E Miniature Lamps



G-3 1/2 G-4 1/2 G-6 S-8 D.C. Index S-8 D.C. Bay RP-11 Bayonet RP-11 Prefocus

Unit package quantity consists of 10 lamps of the same lamp No.

#### 6-8-Volt Automobile Service

Lamp No.	Each	Candle-power	Bulb	Base
51	\$ .08	1	G-3 1/2	Min. Bay.
55	.08	2	G-4 1/2	Min. Bay.
63	.09	3	G-6	S.C. Bay.
64	.12	3	G-6	D.C. Bay.
81	.11	6	G-6	S.C. Bay.
82	.13	6	G-6	D.C. Bay.
87	.21	15	S-8	S.C. Bay.
88	.24	15	S-8	D.C. Bay.
1007	.34	32	RP-11	S.C. Prefoc.
1129	.23	21	S-8	S.C. Bay.
1130	.26	21	S-8	D.C. Bay.
1133	.25	32	RP-11	S.C. Bay.
1000	.27	32-32	RP-11	D.C. Bay.
1154	.29	21-3	S-8	D.C. Index.
1158	.26	21-3	S-8	D.C. Bay.
1323	.34	32	RP-11	S.C. Prefoc.
2330	.38	32-32	RP-11	D.C. Prefoc.
2331	.38	32-32	RP-11	D.C. Prefoc.

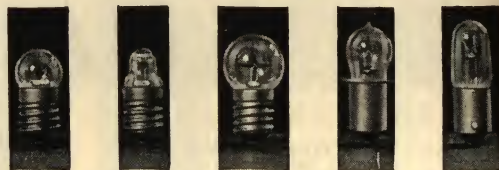
#### 12-16-Volt Automobile Service

No.	Each	Candle-power	Bulb	Base
57	\$ .15	1 1/2 Nom.	G-4 1/2	Min. Bay.
67	.13	3	G-6	S.C. Bay.
68	.13	3	G-6	D.C. Bay.
89	.15	6	G-6	S.C. Bay.
90	.15	6	G-6	D.C. Bay.
93	.25	15	S-8	S.C. Bay.
94	.25	15	S-8	D.C. Bay.
1016	.50	21-6	S-8	D.C. Index
1124	.41	32-32	RP-11	D.C. Bay.
1141	.27	21	S-8	S.C. Bay.
1142	.27	21	S-8	D.C. Bay.
1143	.33	32	RP-11	S.C. Bay.
1144	.33	32	RP-11	D.C. Bay.
1176	.44	21-6	S-8	D.C. Bay.
1327	.50	32	RP-11	S.C. Prefoc.
2336	.51	32-32	RP-11	D.C. Prefoc.

### G-E Miniature Lamps

Unit package quantity, 10 lamps of the same lamp number

For Flashlights, Handlanterns, Bicycles and Miscellaneous Service



G-3 1/2

TL-3

G-4 1/2

B-3 1/2

T-3 1/4

#### Miniature Screw Base

Lamp No.	Each	Bulb	Volts	Amps	Bead Color	No. Cells and Size
112	\$ .09	TL-3	1.1	0.22	Pink	1-AA
131	.09	G-3 1/2	1.3	0.10	White	1-D
222	.09	TL-3	2.2	0.25	White	2-A or AA
223	.09	FE-3 3/4	2.2	0.25	White	2-A or AA
233	.09	G-3 1/2	2.3	0.27	Purple	2-C
248	.10	G-5 1/2	2.4	0.80	Black	2-No. 6
35C	.10	G-5 1/2	2.4	0.80	Black	2-No. 6
14	.09	G-3 1/2	2.5	0.30	Blue	2-D
13	.09	G-3 1/2	3.8	0.30	Green	3-D
502	.10	G-4 1/2	5.0	0.15	Blue	4-F
605	.10	G-4 1/2	6.0	0.50	Brown	5-D

#### Single Contact Miniature Flange Base

Lamp No.	Each	Bulb	Volts	Amps	Color	Size
PR-4	.13	B-3 1/2	2.3	0.27	Lt. Green	2-C
PR-2	.13	B-3 1/2	2.4	0.50	Blue	2-D
PR-6	.13	B-3 1/2	2.5	0.30	Brown	2-D
PR-3	.13	B-3 1/2	3.6	0.50	Green	3-D
PR-7	.13	B-3 1/2	3.8	0.30	Pink	3-D

#### For Toy Train Service—Miniature Screw Base

Lamp No.	Each	Bulb	Volts	Amps	Color	Size
428	\$ .10	G-4 1/2	12	0.25	.....	.....
1446	.15	G-3 1/2	12	0.20	.....	.....
1447	.20	G-3 1/2	18	0.15	.....	.....
432	.10	G-4 1/2	18	0.25	.....	.....

#### For Radio Panels, Indicators and Miscellaneous Service

##### Miniature Screw Base

Lamp No.	Each	Bulb	Volts	Amps	Color	Size
41	\$ .09	T-3 1/4	2.5	0.50	White	.....
40	.09	T-3 1/4	6-8	0.15	Brown	.....
46	.09	T-3 1/4	6-8	0.25	Blue	.....
50	.10	G-3 1/2	6-8	1cp	White	.....

##### Miniature Bayonet Base

Lamp No.	Each	Bulb	Volts	Amps	Color	Size
1490	\$ .11	T-3 1/4	3.2	0.16	White	.....
44	.09	T-3 1/4	6-8	0.25	Blue	.....
47	.09	T-3 1/4	6-8	0.15	Brown	.....
1458	.15	G-5	20	0.25	White	.....

Cell Designation	AA	A	C	D	F	No. 6
Diameter.....inches	1 1/2	5/8	1 1/8	1 1/4	1 1/4	2 1/2
Height.....inches	1 7/8	1 7/8	1 3/8	2 1/4	3 1/8	6

### McGill Crescent Coloring Fluid and Frosting

Used extensively during holiday seasons to color and frost lamps, by dipping, for temporary outdoor coloring schemes; not weatherproof. Recommended for lamps up to 60 watts.

Apply all tints and shades to lighted lamps; apply frosted white to unlighted lamps—then light and let dry.

Available in amber, red, blue, pink, ruby, green, canary, violet, purple and frosted white. When ordering, specify color.

Dipping cup is included.

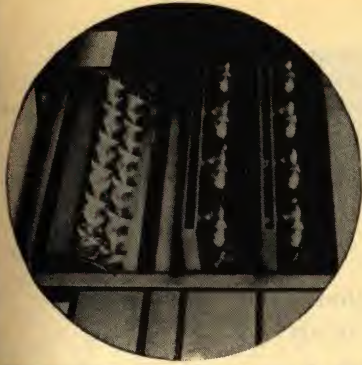


No.	Each	Size	Weight Pounds
2762	\$14.00	Gallon.....	22
2763	7.50	Half Gallon.....	18
2764	4.00	Quart.....	5
2765	2.00	Pint.....	3
2766	1.00	Half Pint.....	2

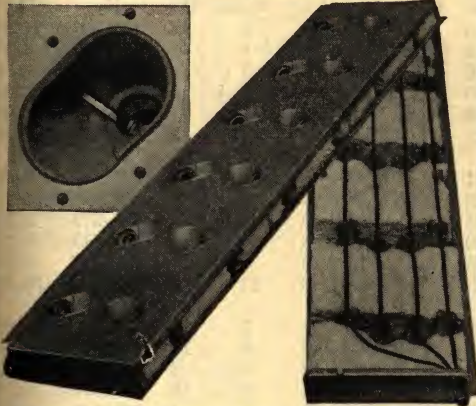


## Trumbull Raymersion Prefabricated Infra-Red Ovens

Service Temperatures Up to 600°F.



Showing Convenient Maintenance Access



Section Showing Heavy Duty Insulation. Note Unique Design of Lamp-Positioning Sockets



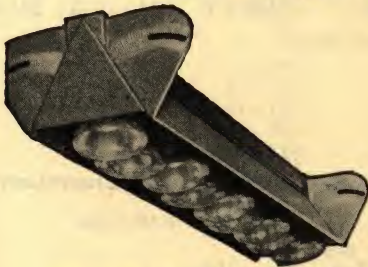
Product Fully and Uniformly Immersed in Infra-Red Radiation and Circulating Convection Heat

Raymersion Ovens provide a greater range of heating application because of their more uniform heat distribution, broad available range of controlled heating rates (properly adapted to each and every application) and the higher operating temperatures available.

**Successful High Speed Raymersion Heating Applications.** Baking synthetic enamel finishes (including gloss and wrinkle type) on fabricated steel products; preheating castings for impregnation and sealing; force drying lacquers on aluminum, steel, tern plate and wood products; baking insulating varnishes on armatures—motor and transformer windings; drying pottery, chinaware—glazes and porcelain coatings; expanding gears and bearings for shrink fitting; surface drying of cleaning solutions and rust inhibitive coatings applied to metals; evaporating water, acetone and other chemical solvents; and drying adhesives—textile coatings—heating plastics—carbonizing wool.

## Wil-Son Patent-Flex Infra-Red Ovens

Overall length, 48 inches. Width of each lamp row, 8½ inches. Lamp sockets per row, 9.



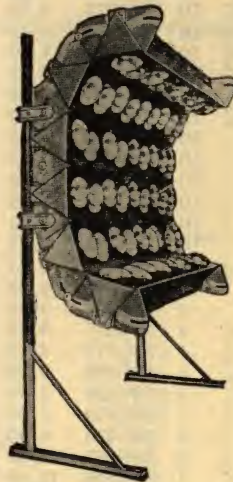
Individual Lamp Row Units

**Individual Lamp Row Units.** For special applications where no stands are required.

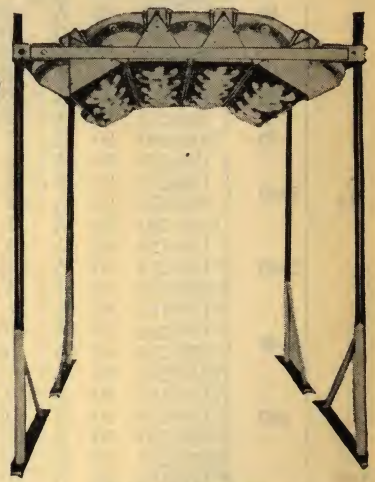
May be attached to all Wil-Son oven sections. Also used for increasing the number of lamp rows in old installations.

**Medium Size Oven Sections.** For side heating applications. Stand height, 60 inches. Length of screw down base, 24 inches. Total contour adjustment between each row, 56°.

**Straddle Oven Sections.** For up or down heating applications. Stand height, 60 inches. Length of screw down base, 24 inches (width of oven is made to fit job). Total contour adjustment between each lamp row, 56°.



Medium Size Oven Sections



Straddle Oven Sections

Individual Lamp Row Units			
Lamp Rows	No.	Each	Ship. Wt. Lb.
1	E-1-91	\$21.50	20
2	E-2-91	43.00	39
3	E-3-91	64.50	58
4	E-4-91	86.00	77
5	E-5-91	107.50	96
6	E-6-91	129.00	115
7	E-7-91	150.50	134
8	E-8-91	172.00	153
9	.....	.....	.....
10	.....	.....	.....

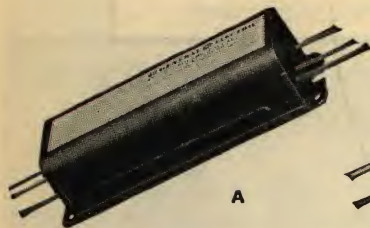
Medium Size Oven Sections			
No.	Each	Ship. Wt. Lb.	
.....	.....	.....	
M-3-91	\$86.00	88	
M-4-91	108.00	107	
M-5-91	130.00	126	
M-6-91	154.00	150	
M-7-91	176.00	169	
M-8-91	198.00	188	
M-9-91	219.00	207	
M-10-91	241.00	226	

Straddle Oven Sections			
No.	Each	Ship. Wt. Lb.	
.....	.....	.....	
S-3-91	\$105.00	99	
S-4-91	126.00	116	
S-5-91	149.00	135	
S-6-91	173.00	159	
S-7-91	195.00	178	
S-8-91	216.00	197	
S-9-91	238.00	216	
S-10-91	259.00	235	

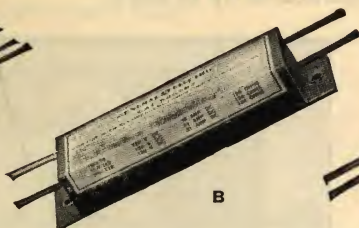


## G-E Ballasts for Fluorescent Lamps

\*60-Cycle



A



B



C



D

## Ballasts for Standard Fluorescent Lamps

Lamp Rating Watts	Circuit Voltage	Approx. Power Factor	Case Type	Weight Pounds	Std. Pkg.	No.	Each
6	110-125	45	C	1	20	58G818	\$ .90
8	110-125	45	C	1	20	58G649	.90
13	110-125	45	A	2 1/4	10	59G400	2.25
13	110-125	95	A	3	10	59G403	3.75
14	110-125	44	C	3/4	20	58G862	.65
14	110-125	85	A	1 1/2	10	58G864	2.75
2-14	110-125	44	C	1 1/2	10	58G914	1.20
15	110-125	55	C	3/4	20	58G670	.65
15	110-125	90	A	1 1/4	10	58G640	2.75
2-15	110-125	55	C	1 1/2	10	58G691	1.20
2-15	110-125	95	A	3/4	10	58G678	3.90
20	110-125	55	C	3/4	20	58G671	.65
20	110-125	90	A	1 1/4	10	58G641	2.75
2-20	110-125	55	C	1 1/2	10	58G692	1.20
2-20	110-125	95	A	3/4	10	58G679	3.90
30	199-216	60	C	1 1/2	10	58G673	1.50
30	220-250	60	C	1 1/2	10	58G672	1.50
30	110-125	90	A	3/4	10	58G644	4.25
30	199-216	90	A	2 1/2	10	58G643	3.40
30	220-250	90	A	2 1/2	10	58G642	3.40
30	110-125	55	A	2 1/2	10	58G674	2.40
30	110-125	95	A	7	10	58G980	5.30
2-30	199-216	95	A	7	10	58G981	5.30
2-30	220-250	95	A	7	10	58G982	5.30
2-30	110-125	95	A	6	10	58G940	6.30
2-30	199-216	95	A	5 1/2	10	58G941	6.30
2-30	220-250	95	A	6	10	58G942	6.30
40	110-125	60	A	2 1/2	10	58G677	2.40
40	199-216	60	C	1 1/2	10	58G676	1.50
40	220-250	60	C	1 1/2	10	58G675	1.50
40	110-125	95	A	3 3/4	10	58G647	4.25
40	199-216	95	A	2 1/2	10	58G646	3.40
40	220-250	95	A	2 1/2	10	58G645	3.40
40	†240-280	90	A	6	10	58G925	4.25
40	110-125	95	A	7	10	58G983	5.30
2-40	199-216	95	A	7	10	58G984	5.30
2-40	220-250	95	A	7	10	58G985	5.30
2-40	†240-280	95	A	7	10	58G922	5.30
2-40	110-125	95	A	6	10	58G943	6.30
2-40	199-216	95	A	5 1/2	10	58G944	6.30
2-40	220-250	95	A	6	10	58G945	6.30
3-40	110-125	95	A	11	4	59G276	9.00
3-40	199-216	95	A	9 3/4	4	59G277	8.25
3-40	220-250	95	A	9 3/4	4	59G278	8.25
100	†240-280	95	A	10 1/4	4	58G996	9.00
100	110-125	90	A	10 1/4	4	58G628	8.00
100	199-216	90	A	10 1/4	4	58G629	8.00
100	220-250	90	A	10 1/4	4	58G630	8.00
100	†240-280	90	A	10 1/4	4	58G967	8.00
2-100	110-125	95	A	14 1/2	4	58G696	12.00
2-100	199-216	95	A	14 1/2	4	58G697	12.00
2-100	220-250	95	A	14 1/2	4	58G698	12.00
2-100	†240-280	95	A	15	4	58G923	12.00

## Tulamp Ballast for 40-Watt Instant-Starting Medium or Mogul Bipin-Base Lamp

Lamp Size	Lamp Watts	Circuit Voltage	Approx. Power Factor	Case Type	Weight Pounds	Std. Pkg.	No.	Each
48T12	2-40	110-125	95	A	12	4	58G373	\$10.00
40T17								

\*G-E ballasts for fluorescent lamps are also available for 50-cycle operation, though not regularly carried in stock. Special service ballasts for certain other frequencies are also obtainable. More complete information on ballasts will be found in Publication GEA-3293 and, on accessories, in Publication 57-312.

†For Y-connected networks rated 254/440, 265/440, and 277/480 volts.

## †Ballasts for Slimline Fluorescent Lamps

110-125 Volts									
Lamp Size	Lamp Watts	Lamp Current Watts	Approx. Power Factor	Case Type	Weight Pounds	Std. Pkg.	No.	Each	
42T6	16	0.1	45	B	6	10	59G501	\$4.50	
	16		95	B	6	10	59G533	6.75	
	2-16		95	B	7	10	59G565	7.75	
	25	0.2	32	B	7 1/2	10	59G505	5.00	
	25		95	B	9	4	59G537	8.00	
	2-25		95	B	8 3/4	4	59G569	9.00	
64T6	24	0.1	45	B	7	10	59G509	5.00	
	24		95	B	6	10	59G533	6.75	
	2-24		95	B	8 1/2	4	59G573	8.75	
	39	0.2	40	B	8 1/2	10	59G513	5.75	
	39		95	B	9	4	59G537	8.00	
	2-39		95	B	11	4	59G577	10.00	
72T8	22	0.1	45	B	7	10	59G509	5.00	
	22		95	B	6	10	59G533	6.75	
	2-22		95	B	8 1/2	4	59G573	8.75	
	38	0.2	40	B	8 1/2	10	59G513	5.75	
	38		95	B	9	4	59G537	8.00	
	2-38		95	B	11	4	59G577	10.00	
96T8	29	0.1	95	B	7	10	59G557	7.50	
	2-29		95	B	10	4	59G589	9.50	
	51	0.2	95	B	10	4	59G561	9.00	
	2-51		95	B	14	4	59G593	11.00	



## Ballasts for Circline Fluorescent Lamps

110-125 Volts

Lamp Diam. In.	Lamp Watts	Approx. Power Factor	Case Type	Wt. Lb.	Std. Pkg.	No.	Each
12	32	50	D	4	10	59G420	\$3.25
12	32	50	E	3	10	59G440	2.75
12	32	90	D	6	10	59G425	6.00
12	2-32	95	D	7	10	59G424	7.50
12-8 1/4	32-22	95	D	6.5	10	59G429	7.00
§Adapter Mtg				E	.12	50	59G441 .50
¶Junction Box				D	.3	50	59G418 .20
8 1/4	22	50	C	1 1/4	20	59G419	.90
8 1/4	22	90	B	2	10	59G428	3.50

Ballasts are connected line to neutral. In no case use less than 250 volts.

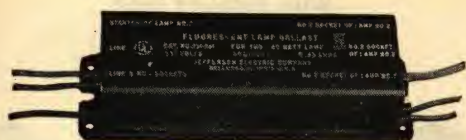
†Note that some ballasts may be used for two or more lamp sizes.

§For use with No. 59G440 only.

¶For use with all ballasts of circular construction; includes bracket for mounting.



## Jefferson Ballasts for Fluorescent Lamps



Hot Cathode Ballast with Ends Leads



Hot Cathode Ballast with End or Bottom Leads

Highest uniform quality, quiet operation, and long life.

Particularly suited to mounting on narrow wiring channels.

## Two Lamp Ballasts—High Power Factor

## With Built-In Compensator

No.	Lamp Watts	Circuit Voltage	SIZE OVERALL, INCHES			Approx. Watts Loss	Approx. Power Factor Per Cent	Approx. Weight Pounds
			Height	Width	Length			
234-701	2-15	110-125	1 $\frac{5}{16}$	1 $\frac{7}{32}$	14 $\frac{1}{2}$	8 to 9	95-100	3 $\frac{1}{2}$
234-711	2-20	110-125	1 $\frac{5}{16}$	3 $\frac{3}{32}$	14 $\frac{1}{2}$	10.0	95-100	3 $\frac{1}{2}$
234-841	2-30	110-125	2 $\frac{3}{8}$	3 $\frac{3}{32}$	9 $\frac{7}{16}$	14.5	95-100	7 $\frac{1}{4}$
234-843	2-30	220-250	2 $\frac{3}{8}$	3 $\frac{3}{32}$	9 $\frac{7}{16}$	12.5	95-100	6 $\frac{1}{2}$
234-846	2-30	199-216	2 $\frac{3}{8}$	3 $\frac{3}{32}$	9 $\frac{7}{16}$	12.0	95-100	6 $\frac{1}{2}$
234-881	2-40	110-125	2 $\frac{3}{8}$	3 $\frac{3}{32}$	9 $\frac{7}{16}$	17.5	95-100	7 $\frac{1}{4}$
234-883	2-40	220-250	2 $\frac{3}{8}$	3 $\frac{3}{32}$	9 $\frac{7}{16}$	14.5	95-100	6 $\frac{1}{2}$
234-886	2-40	199-216	2 $\frac{3}{8}$	3 $\frac{3}{32}$	9 $\frac{7}{16}$	13.5	95-100	6 $\frac{1}{2}$
234-791	*2-100	110-125	2 $\frac{3}{8}$	3 $\frac{3}{32}$	19 $\frac{3}{16}$	35.0	95-100	15 $\frac{1}{2}$
234-793	*2-100	220-250	2 $\frac{3}{8}$	3 $\frac{3}{32}$	19 $\frac{3}{16}$	35.0	95-100	15 $\frac{1}{2}$
234-796	*2-100	199-216	2 $\frac{3}{8}$	3 $\frac{3}{32}$	19 $\frac{3}{16}$	35.0	95-100	15 $\frac{1}{2}$

## Two Lamp Ballasts—High Power Factor

2 $\frac{1}{2}$ -Inch—Narrow Type

## With Built-In Compensator

No.	Lamp Watts	Circuit Voltage	Height	Width	Length	Approx. Watts Loss	Approx. Power Factor Per Cent	Approx. Weight Pounds
234-441	2-30	110-125	1 $\frac{9}{16}$	2 $\frac{1}{2}$	16 $\frac{7}{16}$	14.5	95-100	8
234-443	2-30	220-250	1 $\frac{9}{16}$	2 $\frac{1}{2}$	16 $\frac{7}{16}$	12.5	95-100	7 $\frac{1}{2}$
234-446	2-30	199-216	1 $\frac{9}{16}$	2 $\frac{1}{2}$	16 $\frac{7}{16}$	12.0	95-100	7
234-481	2-40	110-125	1 $\frac{9}{16}$	2 $\frac{1}{2}$	16 $\frac{7}{16}$	17.5	95-100	8
234-483	2-40	220-250	1 $\frac{9}{16}$	2 $\frac{1}{2}$	16 $\frac{7}{16}$	14.5	95-100	7 $\frac{1}{2}$
234-486	2-40	199-216	1 $\frac{9}{16}$	2 $\frac{1}{2}$	16 $\frac{7}{16}$	13.4	95-100	7

## Two Lamp Ballasts—Normal Power Factor

No.	Lamp Watts	Circuit Voltage	Height	Width	Length	Approx. Watts Loss	Approx. Power Factor Per Cent	Approx. Weight Pounds
234-985	2-20	110-125	1 $\frac{5}{16}$	1 $\frac{13}{16}$	6 $\frac{1}{2}$	10.0	55	1 $\frac{1}{2}$
234-986	2-20	110-125	1 $\frac{5}{16}$	1 $\frac{13}{16}$	6 $\frac{1}{2}$	10.0	55	1 $\frac{1}{2}$

## Single Lamp Ballasts—Normal Power Factor

No.	Lamp Watts	Circuit Voltage	Height	Width	Length	Approx. Watts Loss	Approx. Power Factor Per Cent	Approx. Weight Pounds
234-501	15	110-125	1 $\frac{5}{16}$	1 $\frac{7}{32}$	4 $\frac{1}{4}$	3.5 to 4.5	55	3 $\frac{1}{4}$
234-511	20	110-125	1 $\frac{5}{16}$	1 $\frac{7}{32}$	4 $\frac{1}{4}$	4.5	65	3 $\frac{1}{4}$
234-541	30	110-125	1 $\frac{5}{16}$	1 $\frac{7}{32}$	10 $\frac{1}{2}$	7.0	60	2 $\frac{3}{4}$
234-543	30	220-250	1 $\frac{5}{16}$	1 $\frac{7}{32}$	8	6.75	50	2 $\frac{1}{4}$
234-546	30	199-216	1 $\frac{5}{16}$	1 $\frac{7}{32}$	8	6.25	55	2 $\frac{1}{4}$
234-581	40	110-125	1 $\frac{5}{16}$	1 $\frac{7}{32}$	10 $\frac{1}{2}$	8.75	65	2 $\frac{3}{4}$
234-583	40	220-250	1 $\frac{5}{16}$	1 $\frac{7}{32}$	8	10.0	55	2 $\frac{1}{4}$
234-586	40	199-216	1 $\frac{5}{16}$	1 $\frac{7}{32}$	8	9.0	60	2 $\frac{1}{4}$

## Single Lamp Ballasts—High Power Factor

No.	Lamp Watts	Circuit Voltage	Height	Width	Length	Approx. Watts Loss	Approx. Power Factor Per Cent	Approx. Weight Pounds
234-601	15	110-125	1 $\frac{5}{16}$	1 $\frac{7}{32}$	9	3.5 to 4.5	90-100	1 $\frac{1}{2}$
234-611	20	110-125	1 $\frac{5}{16}$	1 $\frac{7}{32}$	9	4.5	90-100	1 $\frac{1}{2}$
234-641	30	110-125	1 $\frac{5}{16}$	1 $\frac{7}{32}$	14 $\frac{1}{2}$	7.0	90-100	3 $\frac{1}{2}$
234-643	30	220-250	1 $\frac{5}{16}$	1 $\frac{7}{32}$	10 $\frac{15}{16}$	6.75	90-100	2 $\frac{1}{2}$
234-646	30	199-216	1 $\frac{5}{16}$	1 $\frac{7}{32}$	10 $\frac{15}{16}$	6.25	90-100	2 $\frac{1}{2}$
234-681	40	110-125	1 $\frac{5}{16}$	1 $\frac{7}{32}$	15 $\frac{1}{2}$	8.75	90-100	3 $\frac{1}{2}$
234-683	40	220-250	1 $\frac{5}{16}$	1 $\frac{7}{32}$	10 $\frac{15}{16}$	10.0	90-100	2 $\frac{1}{2}$
234-686	40	199-216	1 $\frac{5}{16}$	1 $\frac{7}{32}$	10 $\frac{15}{16}$	9.0	90-100	2 $\frac{1}{2}$
234-691	100	110-125	2 $\frac{3}{8}$	3 $\frac{3}{32}$	14 $\frac{5}{16}$	25.0	90-100	11
234-693	100	220-250	2 $\frac{3}{8}$	3 $\frac{3}{32}$	14 $\frac{5}{16}$	25.0	90-100	11
234-696	100	199-216	2 $\frac{3}{8}$	3 $\frac{3}{32}$	14 $\frac{5}{16}$	25.0	90-100	10 $\frac{1}{2}$

## Three Lamp Ballasts—High Power Factor

No.	Lamp Watts	Circuit Voltage	Height	Width	Length	Approx. Watts Loss	Approx. Power Factor Per Cent	Approx. Weight Pounds
234-980	3-40	220-250	2 $\frac{3}{8}$	3 $\frac{3}{32}$	14 $\frac{5}{16}$	23.0	90-100	11
234-983	3-40	110-125	2 $\frac{3}{8}$	3 $\frac{3}{32}$	14 $\frac{5}{16}$	23.0	90-100	11

## 14-Watt Lamp Ballasts

## Two Lamps in Series with One Ballast

No.	Lamp Watts	Circuit Voltage	Height	Width	Length	Approx. Watts Loss	Approx. Power Factor Per Cent	Approx. Weight Pounds
234-989	14	110-125	2	2 $\frac{1}{2}$	2 $\frac{1}{4}$	3.5	55	1
234-990	14	110-125	2	2 $\frac{1}{2}$	2 $\frac{1}{4}$	3.5	55	1

\*No compensator necessary for 100-watt ballasts.

Nos. 234-989 and 234-990 are identical except for mounting brackets.

No. 234-989 is equipped with hickey mounting bracket.

No. 234-990 has mounting ears on either side. Ballasts for 50 cycles can be supplied; prices on application.



### G-E Fluorescent Starters Two-Contact-Glow-Switch Types



No. FS-2

Ruggedly built to withstand shock and breakage. Provides carefully timed starting which results in longer lamp life and more satisfactory operation of lamps.



No. FS-4

No.	Per 100	Description	Car-ton	Std. Pkg.
FS-2	\$30.00	For 15-Watt 18-Inch and 20-Watt 24-Inch Fluorescent Lamps.....	10	100
FS-4	30.00	For 30-Watt 36-Inch and 40-Watt 48-Inch Fluorescent Lamps.....	10	100
FS-5	40.00	For 6-Watt 9-Inch and 8-Watt 12-Inch Fluorescent Lamps.....	10	50
FS-6	80.00	For 100-Watt 60-Inch Fluorescent Lamps.....	10	50

### Four-Contact—Thermal-Switch Types



No. FS-44

Provides starting at temperatures below 50°F. May also be used on d.c. circuits in conjunction with correct ballast, inductance unit, and proper series resistance.



No. FS-64

No.	Per 100	Description	Car-ton	Std. Pkg.
FS-44	\$80.00	For 40-Watt Fluorescent Lamps.....	10	50
FS-64	80.00	For 65 and 100-Watt Fluorescent Lamps.....	10	50

### G-E Watch Dog Starters

#### Glow Switch Type—Manual Reset Button



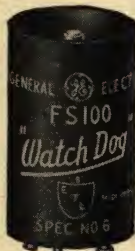
No. FS-20



No. FS-30



No. FS-40



No. FS-100

A precision lamp starter and stopper. Protects lamp throughout its burning life to start it properly and, when lamp is about to die, cuts itself out of the circuit cutting off the current from the lamp. This prevents the lamp from blinking and prolongs the life of the ballast and the starter itself. Each time the unit is lighted it preheats the electrodes within a measured time preventing the electrodes from discharging more than the minimum amount of emission material required.

Under test conditions, the life of the starter is 25,000 hours, outlasts five ordinary starters.

Manual reset button pops up when starter cuts off on dead lamp; reset by pressing when new lamp is inserted, no cooling period is required.

Representative starter socket: Nos. 78X769 or 95X299; No. FS-100 for No. 95X180 representative starter socket.

Standard package, 100.

No.	With 2 Contact Base			With 4 Contact Base
	FS-20	FS-30	FS-40	FS-100
For Lamps.....watts	15, 20	30	40	100

### G-E Fluorescent Lampholders

#### With Rotating Lock

250 Volts—660 Watts



No. 78x354



No. 78x729



No. 95x291

#### Medium Bi-Pin Lampholders

Designed for 1-inch T-8 and 1½ T-12 fluorescent lamps for either flush or surface mounting.

Wiring is protected with plastic cover plate.

Lampholders are held to reflector or wiring channel with one screw and nut. Binding screws take conductors up to size 14 solid wire. Two of these devices are required for each lamp where a separate starter socket is used.

Conventional mounting requires one No. 78x354 or No. 78x491 and No. 78x729 or No. 78x736.

Rotating lock action permits easy installation of lamp and holds lamp securely in place.

**Carton** pack is furnished with 1-inch screw and nut.

No.	Per 100	Description	*Car-ton	Std. Pkg.
78x354	\$18.00	Black Plastic, For 40-Watt 48-Inch, 30-Watt 36-Inch 20-Watt 24-Inch, 15-Watt 18-Inch, and 14-Watt 15-Inch Fluorescent Lamps.....	10	100
78x491	19.80	White Plastic, Same as above...	10	100

#### Medium Bi-Pin Combination Lampholders

Designed for use with 1-inch T-8 and 1½-inch T-12 fluorescent lamps.

Rotating lock action provides easy insertion and removal of lamps and affords safe locking action.

**Carton** pack is furnished with 1¼-inch mounting screw and nut.

No.	Per 100	Description	*Car-ton	Std. Pkg.
78x729	\$32.50	Black Plastic, for 40-Watt 48-Inch, 30-Watt 36-Inch, 20-Watt 24-Inch, and 15-Watt 18-Inch Fluorescent Lamps and FS-4, FS-30, or FS-40 Starters.....	10	100
78x736	34.30	White Plastic Lampholder, Black Plastic Starter Socket for Same Lamps and Starters as above...	10	100
95x291	34.30	White Plastic Lampholder, Black Plastic Reversed Starter Socket for Same Lamps and Starters as above.....	10	100

\*Also available in bulk pack. Screws and nuts not furnished with bulk pack unless one of the following lengths is specified: length A, 1 inch; length B, ½ inch; length C, 1¼ inch.



**G-E Medium Bi-Pin Fluorescent Lampholders****With Rotating Lock****250 Volts—660 Watts****Butt-On Types****For Surface Mounting****No. 95X311****No. 95X217**

Designed for surface mounting.

Nos. 95X168 and 95X311 require No. 4-36 mounting screws. All others have clearance holes for No. 4 screws.

Screws are not furnished.

No.	Per 100	Description	Car-ton	Std. Pkg.
95X168	\$25.00	White Plastic, Threaded Mounting Inserts for 14 to 40-Watt T-8 and T-12 Fluorescent Lamps—Two 18-Inch No. 18 .025-Inch Fixture Wire Leads, Stranded; Stripped 1/2-Inch	10	100
95X311	22.40	Black Plastic, Same as above Except Leads are No. 18 AF Fixture Wire, One 8-Inch and One 36-Inch *Long; Stripped 1/2-Inch.	10	100
95X217	24.20	White Plastic, Same as No. 95X168 Except has Eyelet Mounting Holes Instead of Threaded.	10	100
95X312	22.40	Black Plastic, Same as No. 95X217.	10	100

**For Flush Mounting****No. 78X464**

Designed for 1-inch T-8 fluorescent lamps for narrow channel wiring work, show-case lighting, and side wall fixtures. Wiring is protected with plastic cover plate. One screw mounting requires No. 6-32 screw. Screw is not furnished.

No.	Per 100	Description	Car-ton	Std. Pkg.
78X464	\$22.00	Black Plastic for 15-Watt, 18-Inch and 30-Watt, 36-Inch T-8 Fluorescent Lamps.	10	100
78X492	24.20	White Plastic, Same as above.	10	100

**No. 95X178 Weatherproof Types**

Designed for enclosed outdoor lighting equipment. Spring mounting bracket. Approved by Underwriters' Laboratories for enclosed outdoor applications such as theater marquees and display lighting. Two-hole mounting requires No. 6 screw.

Screws are not furnished.



No.	Per 100	Description	Car-ton	Std. Pkg.
97X178	\$66.00	For 14 to 40-Watt T-8 and T-12 Fluorescent Lamps—No. 18 2-Conductor 1/2-Inch POSJ Cord Lead, 10 Inches Long.	10	100

\*Can be furnished with two 18-inch leads in quantities of 1000 or more at no extra cost.

**G-E Large Bi-Pin Fluorescent Lampholders****With Rotating Lock****No. 95X102****No. 95X153**

**No. 95X102** is designed for 2 1/8-inch T-17 fluorescent lamps for either flush or surface mounting. Flush mounting requires No. 6-32 screws; surface mounting, No. 6 screws (no screws are furnished). Wiring is protected with plastic cover plate. Two tapped holes are provided for holding a mounting bracket to channel or reflector. Binding screws take conductors up to size 14 solid wire. Rotating lock action permits easy installation and removal of lamps. Two of these devices are required for each lamp where a separate starter socket is used. Conventional mounting requires one No. 95X153 and one combination lampholder and starter socket. For 250 volts, 660 watts.

**No. 95X153** is exactly the same as No. 95X102 except that it is designed for 600 volts, 660 watts.

No.	Per 100	Description	Car-ton	Std. Pkg.
95X102	\$37.80	White Plastic, with Bracket, for 65-Watt 36-Inch, and 100-Watt 60-Inch Fluorescent Lamps.	10	50
95X153	36.90	White Plastic, without Bracket, for 65-Watt 36-Inch, and 100-Watt 60-Inch Fluorescent Lamps.	10	50

**G-E Large Bi-Pin Combination Fluorescent Lampholders****With Rotating Lock****250 Volts—660 Watts****No. 95X123**

Combination lampholder and 4-contact starter socket. Starter socket will accommodate both 2-contact and 4-contact starters.

Illustration shows standard combination of lampholder and starter socket. Also furnished with the starter socket assembled in the following positions: No. 95X206 with starter socket reversed; No. 95X186 with starter socket inverted.

Mounting holes require same size screws as No. 95X153 listed above.

No.	Per 100	Description	Car-ton	Std. Pkg.
95X123	\$65.10	White Plastic Lampholder with Bracket, Black Plastic Starter Socket, for 65-Watt 36-Inch and 100-Watt 60-Inch T-17 Fluorescent Lamps and FS-6, FS-64, FS-100, or FS-102 Starters.	10	50
95X184	63.80	Same as above but without Bracket	10	50
95X186	65.10	White Plastic Lampholder with Bracket, Black Plastic Inverted Starter Socket for 65-Watt 36-Inch and 100-Watt 60-Inch T-17 Fluorescent Lamps and FS-6, FS-64, FS-100, or FS-102 Starters.	10	50
95X188	63.80	Same as above but without Bracket	10	50
95X206	63.80	White Plastic Lampholder Without Bracket, Black Plastic Reversed Starter Socket, for 65-Watt 36-Inch and 100-Watt 60-Inch T-17 Fluorescent Lamps and FS-6, FS-64, FS-100, or FS-102 Starters.	10	50



### G-E Miniature Bi-Pin Fluorescent Lampholders

250 Volts—75 Watts



No. 78X715



No. 78X723



No. 95X432

Designed for flush mounting. No starter socket is needed as starter socket is integral part of ballast.

Nos. 78X715 and 78X723 should be purchased in pairs as one each is necessary for each individual lamp.

No. 95X432 is interchangeable at either end of the lamp.

Has one hole mounting and requires No. 6-32 screws. Screws are not furnished.

No.	Per 100	Description	Car- ton	Std. Pkg.
78X715	\$32.50	Black Plastic for Miniature 6 and 8-Watt T-5 Fluorescent Lamps.....	10	50
78X723	32.50	Same as above Except Mounting Bracket is Reversed.....	10	50
95X432	27.70	Black Plastic for Miniature 6 and 8-Watt T-5 Fluorescent Lamps, Two 6-Inch No. 18 AF Fixture Wire Leads.....	10	50

### No. 95X276 G-E Miniature Bi-Pin Butt-On Type Fluorescent Lampholders

Designed for surface mounting. Leads are No. 18 stranded AF fixture wire, 6 inches long, one white and one black.



Uses No. 4 mounting screws. Screws are not furnished.

No.	Per 100	Description	Car- ton	Std. Pkg.
95X276	\$18.00	Black Plastic—Two 6-Inch Wire Leads, for Miniature 6 to 8-Watt T-5 Fluorescent Lamps....	10	100

### G-E Manual Starter Switches

Designed for use with 20-watt T-12, 15-watt T-12 or T-8, 14-watt T-12, 8-watt T-5 and 6-watt T-5 fluorescent lamps.

May also be used with 14-watt T-12, operated two-in-series with a special filament lamp as ballast.

Single hole mounting,  $1\frac{1}{32}$ -inch hole.

Black plastic base, white plastic handle.



95X266

No.	Per 100	Description	Car- ton	Std. Pkg.
95X266	\$71.50	For Two Lamps, six 6-inch No. 18 AF Fixture Wire Leads stripped $\frac{1}{2}$ -inch (2 Red, 2 Black, and 2 Blue)	10	100
95X292	68.20	For One Lamp, four 6-inch No. 18 AF Fixture Wire Leads Stripped $\frac{1}{2}$ -inch (2 Black, 2 Blue)	10	100

### G-E Medium Bi-Pin Fluorescent Lampholders

250 Volts—660 Watts

Ejector Types



No. 78X914



No. 78X915

Designed for 1-inch T-8 fluorescent lamps for narrow channel wiring work, show-case lighting, and side wall fixtures. Especially adaptable for use in show-case lighting equipment where reflector housings are close-fitting.

To be used in pairs requiring No. 6-36 screws.

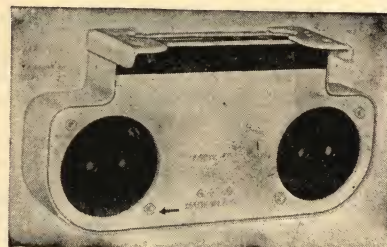
Screws are not furnished.

No.	Per 100	Description	Car- ton	Std. Pkg.
78X914		Black Plastic, Combination Lampholder and Starter Socket for 15 and 30-Watt Fluorescent Lamps and FS-2, FS-4, or FS-40 Starters.....	10	100
	\$48.40			
78X915		Black Plastic, Lampholder Only, Companion Device for above.....	10	100
	26.40			

\*Underwriters' Laboratories have approved these devices for 600-volt, 660-watt service when used in instant-starting circuits.

†Also available in bulk pack. Screws and nuts not furnished with bulk pack unless one of the following lengths is specified: length A, 1 inch; length B,  $\frac{1}{2}$ -inch; length C,  $\frac{1}{16}$ -inch.

### No. 95X498 G-E Twin Turret Lampholders



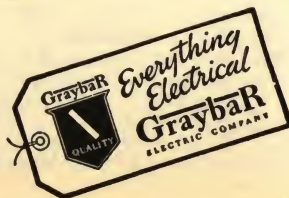
Designed for 40-watt fluorescent lamps. Made of sturdy metal and is available in white only. Accommodates either the FS 40 Watch Dog or the standard FS 4 starter.

May be mounted on any flat surface with two No. 8 mounting screws, preferably with lock washers under the screw heads.

Should be spaced  $49\frac{1}{8}$  inches  $\pm 0-\frac{1}{16}$  inches apart measuring from the back of one turret to the back of the other.

Leads should be stripped and tinned, inserted through the entrance holes and secured by screws at top.

No. ....	95X498
Per 100 .....	\$176.00
Carton .....	5
Standard Package .....	50





## G-E Slimline Fluorescent Lampholders



No. 95X637, High Voltage End

No. 95X638, Low Voltage End

Medium single pin, white plastic type for 72 or 96-inch T-8 Slimline lamps; 42 or 64-inch T-6 Slimline lamps. Binding screws are located in base.

Has two-hole mounting to flat surface using No. 8 screws. Distance from lamp center to mounting surface (bottom of lampholder),  $1\frac{1}{16}$  inches. May be spaced so that center of one lamp to center of next lamp measure 2 inches.

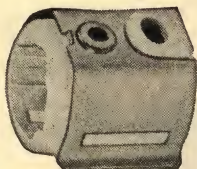
No.	Per 100	Description	Car-ton	Std. Pkg.
95X637	\$77.00	High Voltage End.....	10	100
95X638	77.00	Low Voltage End.....	10	100

## G-E Slimline Fluorescent Lampholders

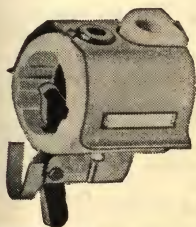
## For Narrow-Channel Lighting



No. 95X671, High Voltage End With Bracket



No. 95X672, Low Voltage End With Bracket



No. 95X672, Low Voltage End With Bracket



No. 95X670, Bracket Only

Designed for 42-inch and 64-inch T-6 Slimline fluorescent lamps. Particularly suited for narrow channel lighting.

Made of sturdy white plastic. Holds the lamps securely in position.

Has a single mounting hole which accommodates a No. 8 screw. Binding screws are conveniently located under the back cover.

One No. 95X671 lampholder and one No. 95X672 or 95X683 lampholder make up a pair for one lamp. No. 95X672 is furnished with a trigger ejector for easy lamp removal or insertion even in extremely narrow channels.

No. 95X670 bracket is available for mounting to the reflector, and is made so that the lampholder can be snapped into the bracket after its assembly to the reflector. One bracket should be ordered for each lampholder.

No.	Per 100	Description	Car-ton	Std. Pkg.
95X671	\$70.40	Slimline Lampholder, High Voltage End.....	10	100
95X672	81.40	Slimline Lampholder, with Lamp Ejector, Low Voltage End.....	10	100
95X683	63.80	Slimline Lampholder, without Lamp Ejector, Low Voltage End.....	10	100
95X670	4.80	Separate Bracket Only.....	10	100

## G-E Separate Starter Sockets

250 Volts—660 Watts



No. 78X769



No. 95X299

Designed for use where it is desired to locate the starter at a distance from the lampholder. Sockets are black plastic with reinforced plastic base.

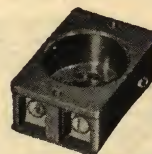
For varying height of starter sockets, use spacer No. 78X770.

No. 95X299 is a companion device to Butt-On type lampholders.

No.	Per 100	Description	Car-ton	Std. Pkg.
78X769		Black Plastic for 2-Contact Starters. Fits FS-2, FS-4, FS-5, FS-30 and FS-40 Starters Only (*1-Inch Mounting Screws Furnished).....	10	100
	\$14.50			
95X299		Butt-On Type Black Plastic—Two 6-Inch No. 18 Stranded Type AF Fixture Wire Leads, Stripped $\frac{3}{4}$ -Inch, for 2-Contact Starters FS-2, FS-4, FS-5, FS-30, and FS-40 (Requires No. 4 Screws—Not Furnished)	10	100
	18.00			
78X770	1.10	Starter Socket Spacer.....	100	1000

## No. 95X180 Separate Starter Sockets

250 Volts—660 Watts



Designed for use where it is desired to locate the starter at a distance from the lampholder.

Black plastic starter socket with reinforced plastic base.

Furnished with  $*1\frac{1}{16}$ -inch mounting screws.

No.	Per 100	Description	Car-ton	Std. Pkg.
95X180		Black Plastic for 4-Contact Starters FS-44, FS-64, and FS-100 and 2-Contact Starters FS-6 and FS-102.....	10	50
	\$26.80			

\*Also available in bulk pack. Screws and nuts are not furnished with bulk pack unless one of the following lengths is specified: length A, 1 inch; length B,  $\frac{1}{2}$ -Inch; length C,  $1\frac{1}{16}$ -inch.



## Hubbell Fluorescent Lamp Starters and Sockets

660 Watts, 250 Volts



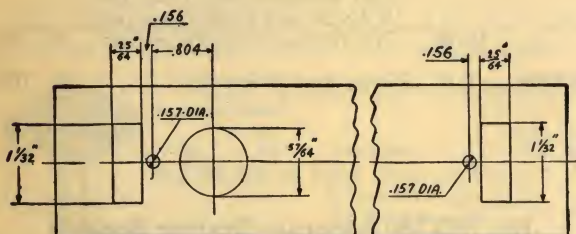
No. FS-2 Starter No. FS-4 Starter No. 2942

A new development makes the essential starting switch and condenser of a fluorescent lamp auxiliary replaceable. Heretofore, the switch and condenser, assembled with a choke coil, comprised a complete auxiliary unit.

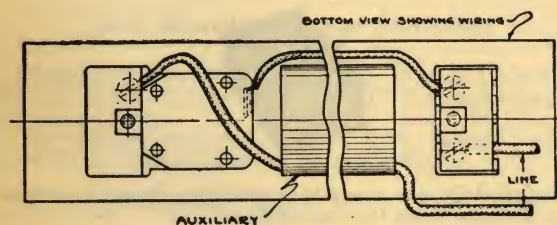
Now, the switch and condenser are mounted in a small aluminum container fitted with contacts. This unit, designated as a starter, fits into the socket of the lampholders. When mounted, the starter projects through a reflector or channel surface immediately below the lamp.

The starter is inserted and locked in contact by a slight turn in a clockwise direction. Reversing the procedure removes the starter.

Auxiliaries are required.



Suggested Mounting Dimensions



Wiring Diagram

### Starters

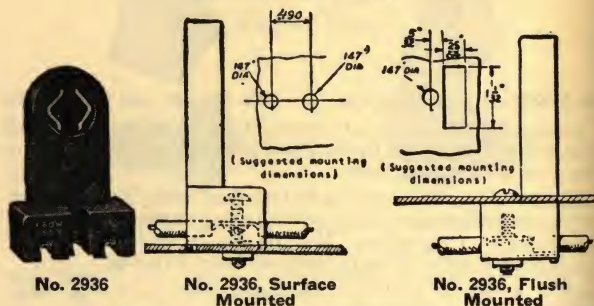
No.	Per 100	Description	Color	Cár-ton	Std. Pkg.	Wt. Lb.
FS-2	\$30.00	For 15 or 20-Watt Lamps.	Aluminum	10	100	4
FS-4	30.00	For 30 or 40-Watt Lamps.	Aluminum	10	100	4

### Lampholders and Starter Sockets

2942	\$32.50	Twist-Turn Contacting...	Black	10	100	10
2943	34.30	Twist-Turn Contacting...	*White	10	100	10

\*Only the lampholder is white. Starter socket is black.

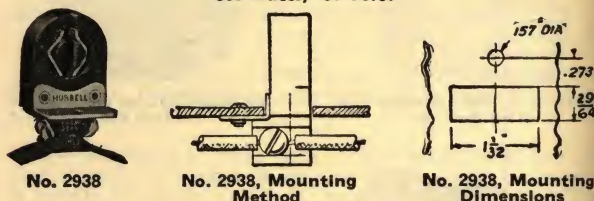
## Hubbell Fluorescent Lampholders Twist Turn Contacting Flush or Surface Mounting 660 Watts, 250 Volts



Designed for 1 and 1½-inch fluorescent lamps, and may be used for either flush or surface mounting. Wiring is protected with insulation cover plate. Lampholder is held to reflector or wiring channel with one screw and nut. Wiring grooves take conductors up to size 14, solid wire. Casing of lampholder is of molded black or white bakelite.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
2936	\$18.00	Black .....	10	100	6
2937	19.80	White .....	10	100	6

### Flush Mounting—For Narrow Channel Wiring 660 Watts, 250 Volts



Designed for use exclusively with a 1-inch fluorescent lamp. Particularly suitable for narrow channel wiring work, showcase lighting and side-wall fixtures. Built for flush mounting. Wiring is protected with sheet insulation cover plate. One screw mounting provides easy and rapid assembly. Available in black or white bakelite.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
2938	\$22.00	Black .....	10	100	6
2939	24.20	White .....	10	100	6

## Bryant Fluorescent Lamp Starters



No. FS2 and FS4



No. FS4-NA

### For Standard Size Lamps

No.	Per 100	For Lamps Watts	Center	Std. Pkg.	Wt., Lb.
FS2	\$30.00	15 and 20	10	100	2
FS4	30.00	30 and 40	10	100	2

### For Mogul Size Lamps

FS6	\$80.00	100		50	3
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### No. FS5 for Midget Size Lamps

Sockets for No. FS5 starters are built into the ballast unit for these small lamps. For separate starter socket, use No. 4309.

FS5	\$40.00	4, 6, 8	10	50	2
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### No-Blink Starters

Prevents annoying blinking and flickering of lamps when they have reached end of normal life.

FS4-NA	\$72.00	40	10	100	3
FS6-NA	110.00	100	10	50	4



## Bryant Fluorescent Lampholders and Starters

Listed by Underwriters' Laboratories, Inc.

### Mogul Size

Packed 10 in a carton, 50 in a standard package.

#### Lampholders

For 60-Inch, T-17, 100-Watt Lamps and  
36-Inch, T-17, 65-Watt Lamps  
660 Watts, 250 Volts  
With Metal Bracket

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4350-W	\$37.80	White.....	6

#### Without Metal Bracket

4351-W	\$36.90	White.....	6
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#### Lampholders with Starter Sockets

For 60-Inch, T-17, 100-Watt Lamps and  
36-Inch, T-17, 65-Watt Lamps  
660 Watts, 250 Volts  
For 2 and 4-Pin Starters  
With Metal Bracket

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4367-W	\$65.10	White.....	10

#### Without Metal Bracket

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4368-W	\$63.80	White.....	10

#### Lampholders and Starter Sockets with Reverse Starter Mounting

For 60-Inch, T-17, 100-Watt Lamps and  
36-Inch, T-17, 65-Watt Lamps  
For 2 and 4-Pin Starters  
With Metal Bracket

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4364-W	\$65.10	White.....	10

#### Without Metal Bracket

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4365-W	\$63.80	White.....	10

#### Starter Sockets

For Separate or Remote Mounting  
For 2-Pin Starters FS6  
For 4-Pin Starters FS4  
660 Watts, 250 Volts



No.	Per 100	Description	Wt., Lb. Std. Pkg.
4369	\$26.80	Black.....	4

#### Midget Size Lampholders

For 4-Watt, 6-Inch and  
6-Watt, 9-Inch Lamps  
75 Watts, 250 Volts

Packed 10 in a carton, 100 in a standard package.

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4330	\$32.50	Black.....	2
4330-W	34.70	White.....	2

## Bryant Fluorescent Lampholders and Starter Sockets

### Standard Size

For T-8 and T-12, 15, 20, 30 and 40-Watt Lamps  
Listed by Underwriters' Laboratories, Inc.

660 Watts, 250 Volts

Packed 10 in a carton, 100 in a standard package.

#### Lampholders

Twist Turn Contacting—Flush or Surface Mounting  
For 1 and 1½-Inch Lamps

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4300	\$18.00	Black.....	6
4300-W	18.80	White.....	6

#### Lampholders With Starter Sockets

##### Twist Turn Contacting

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4307	\$32.50	Black.....	10
*4307-W	34.30	White.....	10

\*Lampholder only is white; starter socket is black.

#### Starter Sockets

##### Separate or Remote Mounting

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4309	\$14.50	Black.....	5

#### Fixture Lampholders For 1-Inch Lamps Only

##### Straight Push Contacting With Metal Bracket

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4303	\$22.00	Black.....	6
4303-W	24.20	White.....	6

#### With Wire Leads—For 1 and 1½-Inch Lamps

Twist Turn Contacting—Surface Mounting  
With One 9-Inch and One 27-Inch Lead of  
No. 18 Type CF Wire

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4328	\$27.50	Black.....	5
4328-W	28.60	White.....	5

## Bryant General Purpose Slimline Lampholders

### For Single Pin Lamps

Accommodates T6 (¾-inch diameter) and T8 (1-inch diameter) Slimline lamps. Binding screws are located in recessed base and covered by an insulating plate. Mounting holes for No. 8 screws on 1¼-inch centers.

No. 4373-W, 660 watts, 250 volts, is for low voltage primary and has two terminal connections. Arranged so that the primary circuit is not complete until the lamp pin is inserted, there-

fore the current in the high voltage circuit cannot flow to the No. 4374-W high voltage lamp holder until the lamp is in place.

No. 4374-W, 660 watts, 1000 volts, is for high voltage secondary and has single terminal connection. Spring supported contact provides push-pull principal of lamp insertion and removal.

Carton, 10. Standard package, 100.

No. ....	4373-W	4374-W
Per 100 .....	\$77.00	77.00
Weight per Standard Package .....	pounds 22	22



H & H Fluorescent Lampholders and Starters

The starter switch and condenser are mounted in a small aluminum container fitted with contacts. This development makes the essential starting switch and condenser of a fluorescent lamp auxiliary easily replaceable.

The starter unit fits into the combination starter socket and lampholder. When mounted, the starter projects through the reflector or channel surface immediately below the lamp.

The starter unit is easily inserted and locked in contact by a short turn in a clockwise direction. If replacements are necessary reversing the process removes the starter.

A reactor is required when installed.

Starters



No. FS-2



No. 7019

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
FS-2	\$30.00	For 15 or 20 Watt Lamp...	10	50	1 1/2
FS-4	30.00	For 30 or 40 Watt Lamp...	10	50	1 1/2
FS4NA	72.00	.....	.....	.....	.....
FS-5	40.00	For 4 and 6 Watt Lamp...	10	50	1 1/2
FS-6	80.00	For 100 Watt Lamp.....	10	50	1 1/2
FS6NA	110.00	.....	.....	.....	.....
FS6NA4	110.00	.....	.....	.....	.....

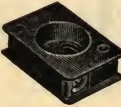
Combination Starter Socket and No. 7013 Lampholder  
660 Watts, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7019	\$32.50	Black.....	10	100	15
7019-W	34.30	*White.....	10	100	15

Starter Sockets



No. 7018



No. 7021

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7018	\$14.50	For Nos. 7013.....	10	100	9
7021	14.50	For Flush or Surface Mounting	10	100	7
7022	1.10	Spacer for No. 7021.....	100	1000	5

Lampholders  
660 Watts, 250 Volts



No. 7013



No. 7014

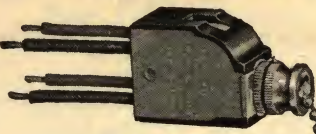
No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7013	\$18.00	Black, Flush or Surface.....	10	100	9
7013-W	19.80	White, Flush or Surface.....	10	100	9
7014	22.00	Black, Flush.....	10	100	6
7014-W	24.20	White, Flush.....	10	100	6

\*Starter socket is black.

Jefferson Fluorescent Lamp Switches



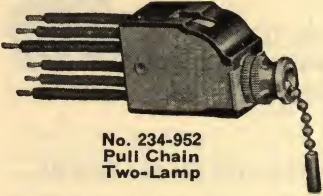
No. 234-699  
Button  
Single Lamp



No. 234-951  
Pull Chain  
Single Lamp



No. 234-698  
Button  
Two Lamp



No. 234-952  
Pull Chain  
Two-Lamp

Insures positive and quick operation of the lamp, serving as "starting" and "on and off" control. Made in single and two-lamp types, with pull chain or button control. Housed in bakelite with metal parts protected against corrosion, and

equipped with silver contacts.

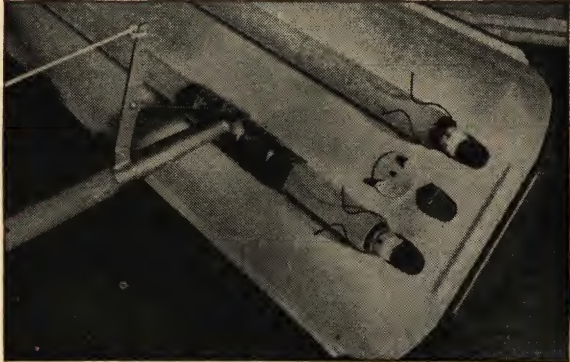
Single lamp switch is equipped with two sets of contacts, one of which acts as a conventional "off and on" switch, while the other momentarily connects the filament in series, as the switch knob in the manual type is turned clockwise or the chain of the pull type is operated.

Two-lamp switch controls three separate circuits; one for full "off and on" and two auxiliary sets of contacts for the starting filaments. Action and operation are identical to the single lamp type.

Packed 20 to the carton.

No.	No. of Lamps	AMPERES 125 Volts 250 Volts	Approximate Size Inches	Weight Ounces
234-699	1	1 1/2	1 3/8 x 1 1/8 x 1 1/16	1 3/4
234-698	2	3	1 3/4 x 1 1/8 x 1 1/16	2
234-951	1	1 1/2	1 7/8 x 1 x 1 1/16	2
234-952	2	3	1 7/8 x 1 1/8 x 1	2 1/2

Newman Safety Fluorescent Lamp Changer and Safety Clips



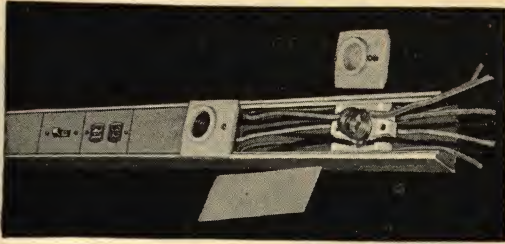
Open jaws to full extent by pulling down on cord. Place open jaws on lamp, release cord and spring automatically turns lamp 90°—then lamp may be lowered. To install new lamp, have pins in lamp line up with slots in sockets from position where operator stands on floor. Insert lamp in sockets and pull operating cord which turns lamp 90°. Continue pull on cord until jaws open—then tool may be removed from lamp. Lamps cannot fall out of socket when safety clip is used. Will fit any standard socket, only one second to install. Held by spring tension. This safety wire clip does not interfere in any way with changing lamps from the floor when using the lamp changer.

No.	Each	Description	No. in Carton	Weight Pounds
6	\$15.00	40-Watt Changer.....	1	3
7	20.00	100-Watt Changer.....	1	3 1/2
8	2.75	5-Foot Extension Handle.....	...	2
9	*10.00	40-Watt Safety Clip.....	100	1
11	*15.00	100-Watt Safety Clip.....	100	2

\*Per 100.



## CurtiStrip Wiring Channel and Raceway



Facilitates installation of all types of lighting equipment and offers the maximum in convenience and flexibility for carrying current. Fishing of wires is eliminated and outlets can be introduced at any point or transferred as required. Snap-in cover can be easily cut to any length and snapped into the lips of the channel. Channel may be cut to any length with a hacksaw, or the sections can be coupled together to form a continuous channel.

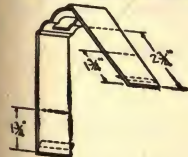
### Satin Silvertone Finish Channel Only

No. ....	1-C	561	562	563	564	565	566	567	*767
Each. ....	\$5.40	3.25	1.25	1.42	2.10	2.60	3.65	4.50	4.85
Length....	10'	5'	18"	2'	3'	4'	6'	8'	8'

### Plain Rust Resisting Finish Channel Only

No. ....	†1	1-A	1-B	581	591	593	596	597	598	599	*799
Each. ....	\$4.75	3.40	1.50	2.25	.83	1.03	1.50	1.90	2.75	3.40	3.75
Length....	10'	10'	10'	5'	18"	2'	3'	4'	6'	8'	8'

\*With lip cut out. †With cover.



### No. 129 Reflector Connector

Used with all type reflectors. Consists of a soft metal strap which fits over two adjoining sockets and is bent over reflector making a neat joint and preventing light leakage. Finished satin aluminum.

No. 129 .....	each	\$2.55
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Nos. 5 and 5A

### No. 5

Standard porcelain receptacle with shade holder groove for use with "X-Ray" reflectors having form B holders and for other standard shade holders. .... each \$ .50

### No. 5-A

Special porcelain socket (no shade holder groove) for use with "X-Ray" screw engaging holders. .... each \$ .67

### No. 6

End cap to close and finish end of Curti-strip. Provided with 1/8-inch knockout for 1/2-inch conduit (can be reamed to 3/4-inch for lead-in circuit). .... each \$ .18

### No. 9

Strap for holding Curtistrip against any flat surface. Overall spread, 3 3/8 inches. Holes on 3 1/16-inch centers. .... each \$ .15

### No. 12

Service box. Top removable. Has four 1 1/8-inch knockouts (bottom, end, and two sides) for 3/4-inch conduit. May be reamed up to 1 1/2 inches. .... each \$2.00

### No. 13

Bracket to hang Curtistrip on pipe or chain hanger. Height, top to bottom, 3 inches. .... each \$ .63

### No. 16

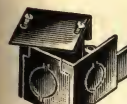
Coupling used for connecting two pieces of Curtistrip. Does not reduce size of wireway or interfere with use of Curtistrip sockets. .... each \$ .33

### No. 19

Nipple attachment (3/8-inch female thread) for supporting reflectors on nipple. .... each \$ .75

### No. 19-BX

Attachment to connect 1/2-inch BX or Greenfield to Curtistrip or for attaching socket with 1/2-inch female thread by using chase nipple. .... each \$ .58



No. 12



No. 13



No. 16



No. 19 and 19-BX

## Accessories



No. 20



No. 21



No. 23



No. 24



No. 31



No. 46



No. 181



No. 501

### No. 20

Single receptacle plate. Takes all standard receptacles. .... each \$ .55

### No. 21

Switch plate. Takes standard toggle switch. .... each \$ .55

### No. 23

Duplex receptacle plate. Takes all standard receptacles. .... each \$ .55

### No. 24

Bracket assembly for mounting Curtistrip out from transom bar or for suspending from ceiling. Includes 1 1/2x3-inch rectangular flange, 3/8-inch nipple, 6 1/4 inches long with two locknuts and No. 13 bracket. .... each \$1.50

### No. 31

Plain bushed end cap for flexible cord connection. .... each \$ .30

### No. 46

Extended end cap which extends 5/8-inch beyond end of channel permitting direct conduit connections. .... each \$ .30

### No. 181

Ballast holder strap. Two are needed for each ballast. Can also be used to clamp No. 16 coupling in CurtiStrip without screws. .... each \$ .22

### No. 501

Decorative end cap cast in modern design which gives a finished appearance to unit. Always used when unit is to be suspended with hangers having angle fittings. .... each \$ .78

## Socket Reflector Supports



Furnished in pairs for 15, 20, 30 or 40-watt lamps.  
No. 782, Plain Rust Resisting Finish. .... per pair \$ .40  
No. 788, Fluracite Finish. .... per pair .45

## Reflector End Plates

Add rigidity and improve appearance of unit. Finished Satin Silvertone.

No. 502, Deep Type. ....	each	\$1.02
No. 503, Shallow Type. ....	each	.73
No. 504, Asymmetric (Right End) ....	each	1.08
No. 505, Asymmetric (Left End) ....	each	1.08

## Fluracite Reflectors



Asymmetric

Shallow

Deep

Made of steel with white Fluracite finish.

No.	Each	Length Inches	Type	Distribution
245	\$2.10	18	Deep	Semi-Concentrating
246	2.50	24	Deep	Semi-Concentrating
247	3.25	36	Deep	Semi-Concentrating
248	4.00	48	Deep	Semi-Concentrating
249	1.85	18	Asymmetric	Directional
250	2.25	24	Asymmetric	Directional
251	2.90	36	Asymmetric	Directional
252	3.60	48	Asymmetric	Directional
256	1.65	18	Shallow	Distributing
257	1.90	24	Shallow	Distributing
258	2.85	36	Shallow	Distributing
259	3.25	48	Shallow	Distributing



## Curtis Fluorescent CurtiStrip Lighting Units

110-125 Volts A.C.

For commercial and industrial lighting as individual one-lamp units or as continuous strip lighting.

Wiring channel forms a rigid backbone for each fixture. Channel and ends finished in satin Silvertone. Steel reflectors finished in white Fluracite.

The following are continuous fixtures wired with high power factor ballasts.

Prices do not include lamps.

## Deep Reflector



Length Feet	Decorative			Economy			Nominal Length	No. of Lamps	Lamp Watts
	No.	Type	Each	No.	Type	Each			
1 1/2	940-C1 1/2		\$15.50	942-C1 1/2		\$12.40	18"	1	15
2	940-C2		16.25	942-C2		13.00	2'	1	20
3	940-C3		20.00	942-C3		16.85	3'	1	30
4	940-C4		20.90	942-C4		17.50	4'	1	40
*	940-C*			942-C*			Cont.	2 or More	40
†2	940-CE2		13.35	942-CE2		12.85	2'	1	20

## Shallow Reflector



Length Feet	Decorative			Economy			Nominal Length	No. of Lamps	Lamp Watts
	No.	Type	Each	No.	Type	Each			
1 1/2	944-C1 1/2		\$14.60	946-C1 1/2		\$12.00	18"	1	15
2	944-C2		15.15	946-C2		12.50	2'	1	20
3	944-C3		19.10	946-C3		16.40	3'	1	30
4	944-C4		19.65	946-C4		16.75	4'	1	40
*	944-C*			946-C*			Cont.	2 or More	40
†2	944-CE2		12.85	946-CE2		12.25	2'	1	20

## Asymmetric Reflector



Length Feet	Decorative			Economy			Nominal Length	No. of Lamps	Lamp Watts
	No.	Type	Each	No.	Type	Each			
1 1/2	948-C1 1/2		\$15.40	950-C1 1/2		\$12.15	18"	1	15
2	948-C2		16.15	950-C2		12.85	2'	1	20
3	948-C3		19.85	950-C3		16.50	3'	1	30
4	948-C4		20.60	950-C4		17.00	4'	1	40
*	948-C*			950-C*			Cont.	2 or More	40
†2	948-CE2		13.10	950-CE2		12.60	2'	1	20

## Reflectorless



Length Feet	Decorative			Economy			Nominal Length	No. of Lamps	Lamp Watts
	No.	Type	Each	No.	Type	Each			
1 1/2	954-C1 1/2		\$11.10	956-C1 1/2		\$9.90	18"	1	15
2	954-C2		11.60	956-C2		10.35	2'	1	20
3	954-C3		14.40	956-C3		13.00	3'	1	30
4	954-C4		15.25	956-C4		13.85	4'	1	40
*	954-C*			956-C*			Cont.	2 or More	40
†2	954-CE2		10.65	956-CE2		10.10	2'	1	20

## Winged Back Reflector



Length Feet	Decorative			Nominal Length	No. of Lamps	Lamp Watts	Each
	No.	Type	Each				
1 1/2	952-C1 1/2			18"	1	15	\$12.90
2	952-C2			2'	1	20	13.40
3	952-C3			3'	1	30	17.35
4	952-C4			4'	1	40	17.85
*	952-C*			Cont.	2 or More	40	
†2	952-CE2			2'	1	20	12.60

\*Order by number, following by length of run required, in multiples of 4 feet only, such as; No. 940-C 12 feet.

†2-foot extension section only for use with continuous fixtures made up of 4-foot lengths.

‡Prices for longer runs of wired CurtiStrip on application.

## Hangers and Fittings

## No. 9 Straps



For holding CurtiStrip against any flat surface. May be used with fluorescent reflectors or complete units. Fits between the reflector and channel.

No. 9.....each \$1.15

## No. 611 Hook Fitting



For chain suspension.

No. 611.....each \$4.45

## No. 612 Reducer Fitting



For 1/2 or 3/8-inch iron pipe mounting to top or side of channel.

Furnished with two screws and nuts.

No. 612.....each \$1.17

## Hangers

## No. 613



For mounting to outlet box in ceiling for direct lighting only.

Use two hangers for each section of fluorescent CurtiStrip up to 10 feet.

Lower end bolts to back of channel.

Standard suspension is 40 inches to top of CurtiStrip.

May be cut to any shorter length without threading. If longer suspension is desired, it can be supplied at slight additional cost.

No. 613.....each \$2.50

## No. 614—With Angle Fitting

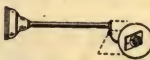
For mounting to outlet box in ceiling for direct or indirect lighting. Suspension, 21 inches to top of CurtiStrip.

No. 613.....each \$3.90

No. 614.....each 3.40

## Supports

## No. 619



For mounting to outlet box in wall or other vertical surfaces. Connects to side of CurtiStrip channel.

Furnished with slip-ring style canopy.

One mounting bracket is recommended for each 18 or 24-inch section; two for longer sections.

No. 619.....each \$2.50

## Nos. 621 and 622



No. 621 is for mounting on top surface of wall case or other horizontal surfaces. Extension is adjustable.

No. 622 is for mounting on top surface of wall case or other horizontal surfaces. Extension is adjustable without cutting pipe.

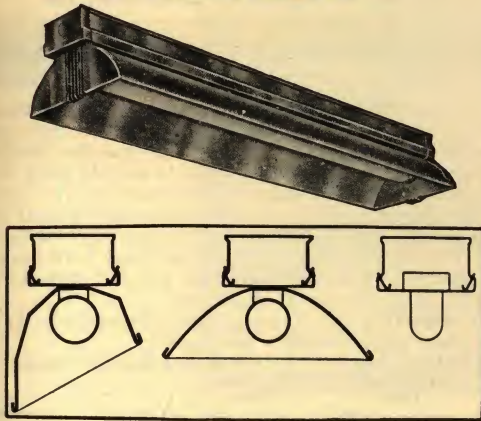
No. 621.....each \$2.00

No. 622.....each 2.50

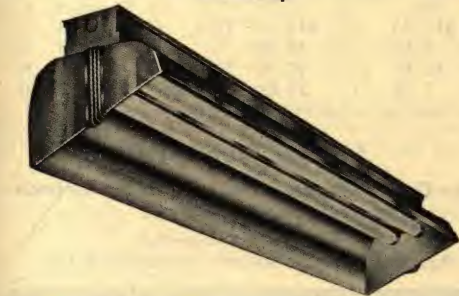


### Day-Brite Strip Lighting Units

One and Two-Lamp  
For 15, 20, 30, and 40-Watt Fluorescent Lamps  
110 Volts, 60 Cycles, A.C.



One-Lamp



Two-Lamp

Furnished wired with sockets, No-Blink starter, and high power factor ballast.

Channel, end caps, and reflector end plates are finished in baked aluminum gray enamel.

Channel cover is finished in baked super-white enamel. Available without reflector as well as with porcelain enamel and specular Alzak reflector in both symmetric and asymmetric shapes.

#### Without Reflectors

One-Lamp						Two-Lamp					
No.	Each	Height Inches	Width Inches	No.	Each	Height Inches	Width Inches	Lamp Watts	Length Inches		
8940NB	\$14.20	3 1/4	3	4945NB	\$22.20	4 5/8	4 1/4	15	19 1/4		
8941NB	14.55	3 1/4	3	4946NB	22.90	4 5/8	4 1/4	20	25 1/4		
8942NB	19.10	3 1/4	3	4947NB	28.35	4 5/8	4 1/4	30	37 1/4		
8943NB	19.90	3 1/4	3	4948NB	29.70	4 5/8	4 1/4	40	49 1/4		
With Symmetric Porcelain Reflectors and End Plates											
8960NB	\$18.50	6	4 1/2	4975NB	\$29.55	8 1/4	8 1/2	15	19 1/4		
8961NB	19.35	6	4 1/2	4976NB	31.00	8 1/4	8 1/2	20	25 1/4		
8962NB	24.30	6	4 1/2	4977NB	37.25	8 1/4	8 1/2	30	37 1/4		
8963NB	26.50	6	4 1/2	4978NB	40.45	8 1/4	8 1/2	40	49 1/4		
With Asymmetric Porcelain Reflectors and End Plates											
8965NB	\$18.50	4	7	4985NB	\$29.55	6	10 1/2	15	19 1/4		
8966NB	19.35	4	7	4986NB	31.00	6	10 1/2	20	25 1/4		
8967NB	24.30	4	7	4987NB	37.25	6	10 1/2	30	37 1/4		
8968NB	26.50	4	7	4988NB	40.45	6	10 1/2	40	49 1/4		
With Asymmetric Alzak Reflectors and End Plates											
8950NB	\$19.35	6	4 1/2	4990NB	\$31.35	8 1/4	8 1/2	15	19 1/4		
8951NB	20.60	6	4 1/2	4991NB	33.85	8 1/4	8 1/2	20	25 1/4		
8952NB	26.35	6	4 1/2	4992NB	41.30	8 1/4	8 1/2	30	37 1/4		
8953NB	28.95	6	4 1/2	4993NB	45.65	8 1/4	8 1/2	40	49 1/4		
With Symmetric Alzak Reflectors and End Plates											
8965NB	\$19.35	4	7	4995NB	\$31.35	6	10 1/2	15	19 1/4		
8966NB	20.60	4	7	4996NB	33.85	6	10 1/2	20	25 1/4		
8967NB	26.35	4	7	4997NB	41.30	6	10 1/2	30	37 1/4		
8968NB	28.95	4	7	4998NB	45.65	6	10 1/2	40	49 1/4		

### Day-Brite Showcase Lighting Fixtures

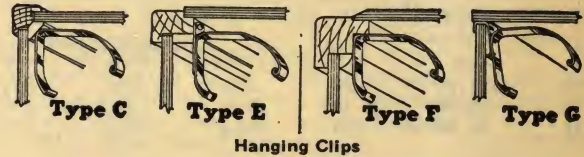
For Two 18 and 36-Inch T-8 Fluorescent Lamps  
For 42 and 64-Inch Slimline Lamps  
110 Volts, 60 Cycles, A.C.



Concealed Ballast Box



Flush Ballast Box



Hanging Clips

A continuous fixture for showcase lighting.

Complete fixture consists of a reflector trough and hanging clips with an elbow at one end for down tubing connections. Ballast is located in either concealed or flush type ballast boxes installed in base of case.

Style FY down tubing includes tubing and parts for electrical connection from fixture through front corner of case to ballast box.

Style FZ down tubing includes tubing and parts for electrical connection from fixture through back corner of case to ballast box.

Concealed ballast box is designed for installation under case. Flush mounting type box is designed for installation at base of case and has a face plate including a toggle switch control.

Hanging Clips are furnished with fixture. Specify type required when ordering. Type F hanging clip will be furnished unless otherwise specified.

Made of steel and are finished in satin nickel plate, or in any standard lacquer finish.

Reflector is finished in baked super-white enamel.

Plated Finish No.	Type	No. of Lamps	Size Lamp Inches	Fixture Length Inches
1610	Fluorescent	1	18	24 3/8 to 30
1611	Fluorescent	1	36	42 3/8 to 48
1612	Slimline	1	42	45 1/2 to 60
1613	Fluorescent	1	18 and 36	63 1/4 to 66
1614	Slimline	1	64	67 1/2 to 72
1615	Fluorescent	2	36	81 1/4 to 84
1616	Slimline	2	42	87 1/2 to 96
1617	Slimline	1	42 and 64	109 1/2 to 120
1618	Slimline	2	64	131 1/2 to 144

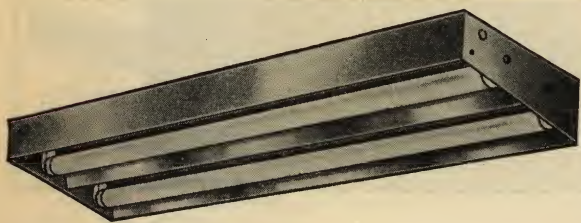
Prices on request.



## Day-Brite Show Window Lighting Fixtures

For 20, 40, and 100-Watt Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



Furnished wired and includes sockets, No-Blink starters, and high power factor ballast.

Reflector is designed for symmetric distributions.

Reflector is of specular alzak and is easily removed from housing for access to control equipment and for mounting operations.

Top of housing is provided with mounting holes and 1/2-inch knockouts for installation and line connections, and is finished in baked lustre aluminum enamel.

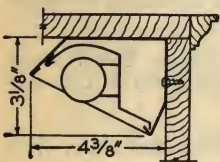
Ends, front, and back are provided with 1/2-inch knockouts for thru wiring so that these fixtures can be mounted end-to-end or parallel.

No.	Each	Lamp Watts	DIMENSIONS, INCHES		
			Length	Width	Depth
1216	\$33.75	20	24 1/4	12 3/4	5 1/2
1217	46.00	40	48 1/4	12 3/4	5 1/2
1218	80.60	100	60 3/4	16 3/4	5 1/2

## Day-Brite Wallcase Lighting Units

For One 15, 20, 30 and 40-Watt Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



For wallcases, island display cases, etc.

Furnished wired and includes sockets, No-Blink starter, and high power factor ballast.

Reflector is porcelain enameled steel.

Housing is finished in aluminum lacquer and has 1/2-inch knockout at each end for electrical connections.

A knockout is also supplied in the reflector for installation of toggle or levolver switch.

No.	Each	Lamp Watts	Length Inches
412NB	\$17.65	15	18 1/4
413NB	18.70	20	24 1/4
414NB	24.20	30	36 1/4
415NB	26.25	40	48 1/4

Levolver switch, wired, furnished at \$2.00 additional.  
Toggle switch, wired, furnished at \$1.60 additional.

## Smithcraft Fluorescent Strips

For Single 20-Watt Lamp

For Single 40-Watt Lamp

110-125 Volts, 60-Cycles, A.C.

Approved by Underwriters' Laboratories, Inc.



For cove or ceiling lighting, kitchens, work rooms, etc. Die formed of heavy gage, cold rolled steel. Sockets and ballast are mounted on cover. The base has the Smithcraft rolled bead, which allows the cover to simply snap on and the two sections are securely locked together. The base has knockouts on top for various types of mounting; end knockouts for continuous installations. Completely wired ready to install with FS4 starters. All white finish with Supercoat baked enamel. Available with or without reflectors—for individual or continuous installation.

When ordering, specify catalog number and whether high power or low power ballasts are required.

Packed 4 in a carton. Prices do not include lamps.

No.	Low Power Factor		Ship. Wt. Lb.	High Power Factor		Lamp Size In.	Watts	DIMENSIONS INCHES		
	Each	Ship. Wt. Lb.		Each	Ship. Wt. Lb.			Length	Width	Ht.
S1-40	\$10.55	9 1/2		\$14.10	10 3/4	48	40	49	27 7/8	1 3/4
S1-20	6.10	5 1/4		10.00	6	24	20	25	27 7/8	1 3/4
*RS1-40	12.45	13 1/4		16.00	14 1/2	48	40	49	6	3 3/4
*RS1-20	7.75	7		11.65	7 3/4	24	20	25	6	3 3/4

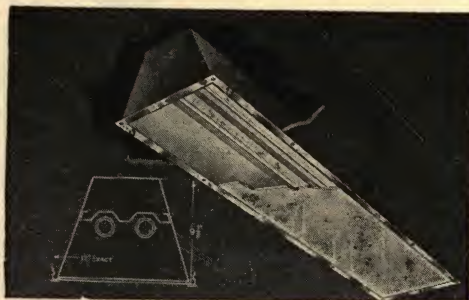
\*With reflectors—symetric or asymmetric.

## Leader Trofferlites

For One, Two, and Three 40-Watt 48-Inch Fluorescent Lamps

110 Volts—60 Cycles—A.C.

Approved by Underwriters' Laboratories, Inc.



Available in open type, with or without louvers, and closed type with piano-hinged, glass-panelled frames.

Available for instant-start operation in 3-40-watt only. Also available with 3 Holophone lens on special order.

E.T.L. approved.

### T and TG Series

Dimensions: 48x12x8 3/8 inches.

No.	Each	Type	No. of Lamps	Ship. Wt. Lb.
T-140	\$24.07	Open	1	26
T-240	31.31	Open	2	30
T-340	42.27	Open	3	33
T-12	.62	*Baffle Louvers	1	..
TG-140	42.53	†Glass Enclosed	1	39
TG-240	49.60	†Glass Enclosed	2	44
TG-340	61.62	†Glass Enclosed	3	47

### TW and TWG Series

Dimensions: 48x24x8 3/8 inches.

No.	Each	Type	No. of Lamps	Ship. Wt. Lb.
TW-240	\$44.38	Open	2	48
TW-340	56.71	Open	3	66
TW-440	60.40	Open	4	78
TWG-240	67.38	†Glass Enclosed	2	63
TWG-340	79.71	†Glass Enclosed	3	81
TWG-440	83.42	†Glass Enclosed	4	98

\*Three per 4-foot section.

†With piano-hinged frame.



## Curtis Standard Skylux Lighting Units

110-125 Volts A.C.

Approved by Underwriters' Laboratories



Has high power factor ballasts and FS-4 starters. Each basic unit is a complete luminaire. Can be used with one or more extension units to make a continuous run.

Moldings and end plates finished Satin Gray; reflector and lamp shield, Fluracite (white). Prices do not include lamps.

**Twin Skylux****For Two 40-Watt (48-Inch) Lamps Per Section**

For mounting on ceiling or suspension on hangers.

Total watts (including two-lamp ballast) per section, 95 watts. Can be wired for 220-250 volts a.c.

Furnished with coupling set for continuous run plus pair of end ornaments No. 6411. Overall height,  $6\frac{7}{8}$  inches. Width  $15\frac{3}{8}$  inches. Each extension section adds  $48\frac{1}{4}$  inches to length. For suspension use No. 624, one-stem hanger or No. 6442, two-stem hanger.

No. 895-C, Basic Twin Skylux.....each \$33.35

\*No. 896-C, Extension Twin Skylux.....each 32.35

\*No. 896-C is regular extension for Twin Skylux. Two-foot extension for two 20-watt lamps is No. 882-C, at \$25.40.

**Single Skylux****For One 40-Watt (48-Inch) Lamp Per Section**

For mounting along the right angle juncture of the wall and ceiling or for mounting horizontally on the wall below the ceiling line. Extension section is furnished with coupling set but without end ornaments.

Total watts (including ballast), 51 watts on 110-125 volts a.c., single lamp ballast; or 48 watts with two-lamp ballast. Can be wired for 220-250 volts a.c.

Overall height, 7 inches. Width,  $8\frac{1}{2}$  inches. Each basic section is  $48\frac{3}{8}$  inches in length and each extension section used will add  $48\frac{1}{4}$  inches to the total length.

No. 891-C, Basic Single Skylux.....each \$24.60

No. 892-C, Extension Single Skylux.....each 23.60

**Curtis Single and Twin-Stem Hangers****For Standard Skylux Units**

For use with Skylux units Nos. 895-C and 896-C only. Cannot be used with Single Skylux or "Low Brightness" Skylux.

Two No. 624 or one No. 6442 hangers required to hang individual unit.

Continuous runs require one more No. 624 single-stem hanger than the number of units in the run; if twin-stem hanger No. 6442 is to be used, one hanger is required for each section.

**No. 624 Single-Stem**

Single steel stem with a self-aligning canopy fitting, threaded lower end, lock nut, two heavy washers, and clamping nut.

No. 624.....each \$3.75

No. 6403, 12-Inch Extension.....each .72

No. 6404, 24-Inch Extension.....each 1.17

**No. 6442 Twin-Stem**

Two steel tube stems with  $\frac{5}{8}$ -inch outside diameter finished Satin Gray. Heavy nuts and washers are provided for end of each stem. Stems threaded for attaching through knockouts in top.

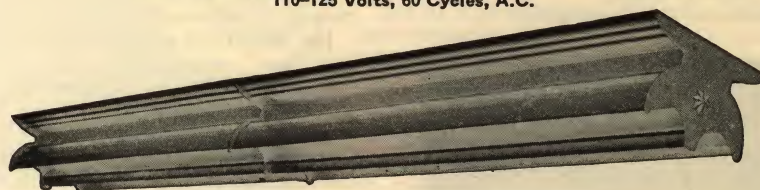
No. 6442.....each \$5.75

No. 6401, 12-Inch Extension.....each 1.42

No. 6402, 24-Inch Extension.....each 2.25

**Curtis "Low Brightness" Skylux Lighting Units****For Two 40-Watt (48-Inch) Fluorescent Lamps**

110-125 Volts, 60 Cycles, A.C.



For ceiling mounting in stores, offices, and other interiors. Has low brightness and a soft, silvery appearance when lighted.

Made of Alzak Aluminum with steel channel and ends.

Each luminaire is a complete unit in itself or may be used with other units to make up a continuous run.

Has high power factor ballast.

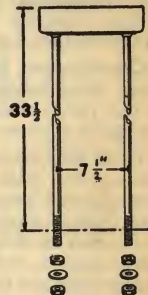
Total watts (including two-lamp ballasts) per section, 95½ watts. Can be wired for other voltages.

Furnished with coupling set and two end ornaments.

Finished in Alzak Aluminum with plastic star end ornaments.

Overall height,  $6\frac{7}{8}$  inches. Width  $11\frac{1}{2}$  inches. Individual section is  $48\frac{1}{16}$  inches in length and each additional unit will add  $48\frac{1}{16}$  inches to total length.

Prices upon Application





## Curtis "Forty-Sixty" Luminaires

For Two 40-Watt Fluorescent Lamps

110-125 or 220-250 Volts A.C.

Approved by Underwriters' Laboratories



Designed for eye comfort. Used in offices, class rooms and drafting rooms.

The low brightness blends with the illuminated ceiling, producing a comfortable field of vision. High levels of illumination without distracting and harmful glare are readily attained.

**Light Control.** The ceiling is illuminated by an indirect component of approximately 40 per cent of the light output. The 60 per cent direct component is louvered to provide 35° crosswise and 25° lengthwise shielding.

**Construction.** Reflectors, louver fins, and canopy are made of aluminum. Wiring channel, ends, and hanger stems are made of steel. End ornament is made of plastic. Louver is hinged and will swing down for cleaning and relamping or for access to the wiring channel. Has no horizontal reflecting or diffusing surfaces to collect dust. Special 12-inch two-stem hanger permits easy installation. Other length hangers are available, prices on request.

Furnished with high power factor ballast and FS-4 starters. For two 40-watt lamps, total watts approximately 95.

Finished in satin aluminum. Alzak aluminum reflectors and louver fins. White Fluracite wiring channel and end plates. Ornamental star in Ivorytone.

**Dimensions.** Width, 12½ inches. Depth of body, 5½ inches. Length, 48¾ inches, including ornaments. Stem hanger suspension, 12 inches, ceiling to top of body.

**Continuous Luminaires.** For continuous fixture with single stem hangers located between sections and at the ends of the run, order one 4-foot basic unit and as many 4-foot extension sections as are needed to complete the run.

Basic unit is packed with two hangers for the ends; extension section with one hanger. Wire entrance can be made through any hanger. Allow 48¾ inches on centers for spotting hangers except at ends where 44⅞ inches o.c. is allowed. If continuous fixtures are wanted with centrally located two-stem hangers, order the same unit as for individual mounting. Connectors are furnished with all units.

**No. 4060-C.** Two-stem unit. Wired for 110-125 volts.

Each, less Lamps..... \$37.00

**No. 4060-D.** Same as No. 4060-C but wired for 220-250 volts.

Each, less Lamps..... \$37.00

**No. 4060-CB.** Basic unit for two 40-watt lamps. For continuous fixtures with single-stem hangers. Wired 110-125 volts.

Each, less Lamps..... \$38.40

**No. 4060-DB.** Same as No. 4060-CB but wired 220-250 volts.

Each, less Lamps..... \$38.40

**No. 4060-CE.** Extension section for two 40-watt lamps. For continuous fixtures with single-stem hangers. Wired 110-125 volts.

Each, less Lamps..... \$36.00

**No. 4060-DE.** Same as No. 4060-CE but with 220-250 volts.

Each, less Lamps..... \$36.00

## Coefficients of Utilization in Per Cent

Room Index	CEILING								
	75 PER CENT			50 PER CENT			30 PER CENT		
	50 Per Cent	30 Per Cent	10 Per Cent	50 Per Cent	30 Per Cent	10 Per Cent	30 Per Cent	10 Per Cent	10 Per Cent
J	30	27	26	28	26	25	24	23	
I	36	34	33	33	32	31	30	28	
H	40	38	36	36	35	33	33	32	
G	43	41	39	40	37	36	35	34	
F	46	43	41	41	39	38	37	35	
E	49	47	45	44	42	41	39	38	
D	52	49	47	46	45	43	41	40	
C	54	51	49	47	46	44	42	41	
B	56	53	52	50	48	47	43	42	
A	57	55	53	51	49	48	45	43	

For average conditions a maintenance factor of 75 per cent is suggested.

## No. 4061-C

For Two 100-Watt Fluorescent Lamps

Same as No. 4060-C except that it is 60¾ inches long and arranged for use with two 100-watt lamps.

Distribution is similar to that of the No. 4060-C.



Can be used in continuous runs with single-stem hangers. Allow 60¾ inches on centers for spotting hanger except at ends of run where 56⅞ inches is correct.

**No. 4061-C.** Two-stem unit. Wired for 110-125 volts.

Each, less Lamps..... \$59.10

**No. 4061-D.** Same as No. 4061-C but wired 220-250 volts.

Each, less Lamps..... \$59.10

**No. 4061-CB.** Basic units for continuous fixtures with single-stem hangers. Wired 110-125 volts.

Each, less Lamps..... \$58.90

**No. 4061-DB.** Same as No. 4061-CB but wired 220-250 volts.

Each, less Lamps..... \$58.90

**No. 4061-CE.** Extension section for continuous fixtures with single-stem hangers. Wired 110-125 volts.

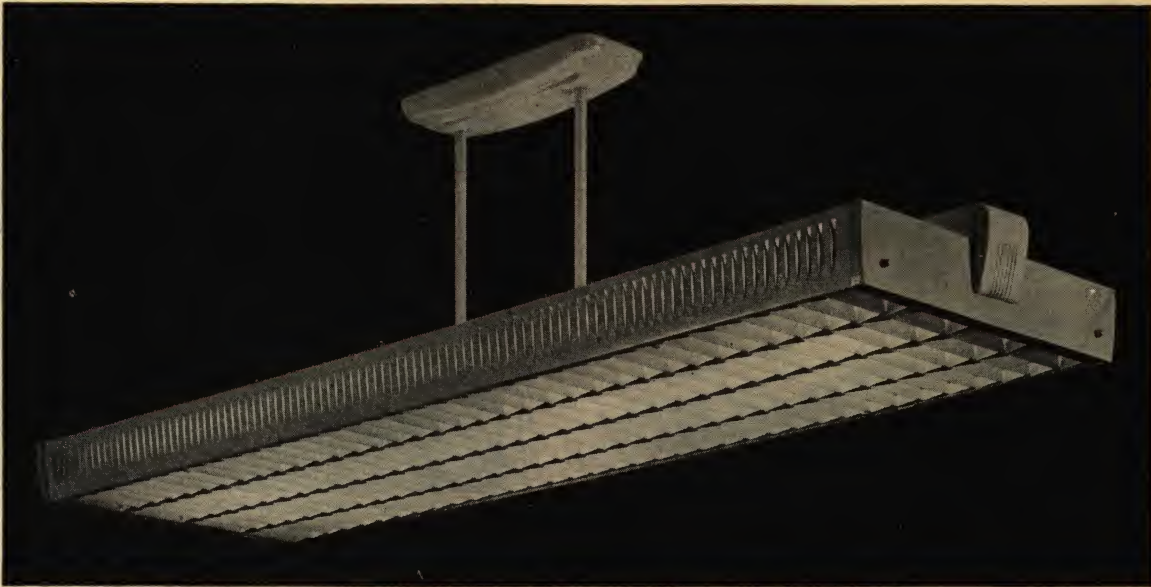
Each, less Lamps..... \$56.50

**No. 4061-DE.** Same as No. 4061-CE but wired 220-250 volts.

Each, less Lamps..... \$56.50



## No. 51 Curtis Anniversary Luminaires For Four 40-Watt Fluorescent Lamps An Exceptionally Shallow 4-Lamp All Metal Unit



Pendant luminaire of modern design for four 40-watt fluorescent lamps. The louvered bottom is hinged so that it may be opened from either side or completely removed. Lamps and starters may be changed from above without opening louver. Louver is finished white Fluracite and provides 30 degrees crosswise and lengthwise shielding of the lamps. The attractive dart pattern of the louver adds interest as well as being an integral part of the construction. The side panels are designed so that the lamps are louvered and reflected light is utilized to illuminate and create a decorative pattern. The end plates are finished a light gray with a plastic end ornament which adds to the functional design of the luminaire.

The Curtis "51" is of the general diffusing type with the top completely open to better utilize the light from the lamps for indirect lighting. The direct light is effectively

shielded and provides higher levels of illumination for merchandising. The illumination characteristics of the "51" gives it greater flexibility for application to a wide range of lighting installations. (Stores, public buildings, offices, etc.)

Installation on any type of ceiling is simplified by using Curtis hangers for either individual mounting or in continuous runs. Two-stem hangers and single-stem hangers are finished light gray, matching the end plate of the "51." Standard suspension is 12 inches from ceiling to top of body. Stems for 18, 24, 36 and 48-inch suspension are carried in stock.

**DIMENSIONS:** Width, 18 inches; length, including ornament, 51 $\frac{3}{8}$  inches; length, without ornament, 50 $\frac{1}{8}$  inches; overall depth, 4 $\frac{1}{2}$  inches; depth of body, 3 inches.

Net weight, 33 pounds.

No. 51 C, With Twin Stem Hanger. Weight 32 Pounds.....	each \$55.85
No. 51 CB, With Two Single Stem Hangers. Weight 32 Pounds.....	each 57.25
No. 51 CE, With Single Stem Hanger and Coupling. Weight 31 Pounds.....	each 54.85

## Curtis Luminaires For Four 40-Watt Fluorescent Lamps

110-125 Volts  
Approved by Underwriters' Laboratories

Used as an individual unit or in continuous runs for pendant or ceiling mounting.

Made of steel with crystal glass panels, lightly sanded, which can be removed for cleaning. Hinged louver gives access to lower lamps. Canopy conceals heavy supporting bridge. End ornaments are removable and knockouts in end plates permit continuous wiring. Allow 48 $\frac{1}{16}$  inches length per unit in spotting hangers.

Has high power factor ballasts and FS-4 starters. Total watts, approximately 191. Furnished with connectors. Finish is Satin Gray with white Fluracite louver.

Dimensions, 49 $\frac{1}{4}$ x14x6 $\frac{1}{8}$  inches.

### No. 1400 Starlux

Suspension to top of body, 34 inches.

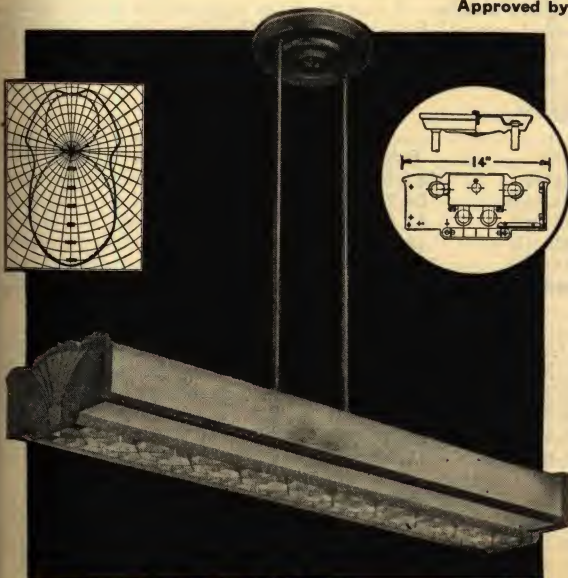
No. 1400, less Lamps.....	each \$52.50
No. GX-207, Replacement Glass Panel.....	each 1.00

### No. 70610-XE

Similar to No. 1400 except equipped with upper reflector and ceiling moulding for ceiling mounting.

**DEPTH:** 10 $\frac{1}{8}$  inches.

No. 70610-XE, less Lamps.....	each \$60.00
No. GX-207, Replacement Glass Panel.....	each 1.00

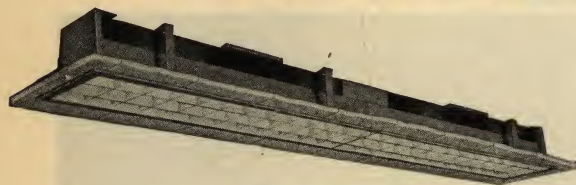


No. 1400 Starlux

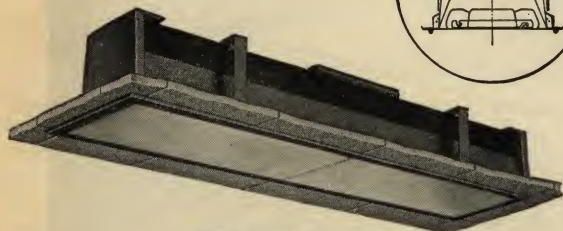
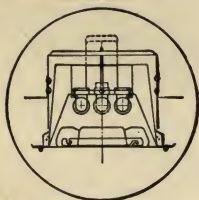


**Curtis Recessed Troffers**

For Two or Three 40-Watt Fluorescent Lamps



With Louver



With Glass Bottom

Equipped with side and end flanges and are easy to install in any type acoustical ceiling including T-bar construction where the T-bar does not support the unit.

Louvers are of the swing down type and provide shielding 35 degrees crosswise and 25 degrees lengthwise.

Glass panels are of diffusing glass so arranged to slide over each other for maintenance. Panels can be quickly removed where desirable.

Wireway is suspended from U shape support brackets which are adjustable for thickness of framing and plaster or acoustical material. Reflectors are drawn up to wireway with wing nuts by means of long bolts. Sections can be wired together in lengths convenient for installation and installed as a unit. Generally, one wire entrance will be sufficient for the entire run.

Each unit is 48 inches in length and fits into a 12-inch slot in the ceiling. This permits alignment of reflectors with acoustical ceiling patterns.

Width at bottom, over flanges, 13 $\frac{1}{4}$  inches.

Space required for recessing: 9 $\frac{1}{4}$  inches for two-lamp unit; 10 $\frac{1}{2}$  inches for the three-lamp unit.

All units, basic and extension, are carton packed for easy storage.

**Alzak Aluminum**

With Aluminum Reflector and Louver—Alzak Aluminum Finish

No.	Each	Description	No. of Lamps	Lamp Watts
1712-C4'	\$46.35	Basic Unit	2	40
1712-CE4'	43.35	Extension	2	40
1713-C4'	53.50	Basic Unit	3	40
1713-CE4'	50.50	Extension	3	40

**All-Steel**

With Steel Reflector and Louver—White Fluoracite Finish

No.	Each	Description	No. of Lamps	Lamp Watts
1722-C4'	\$36.85	Basic Unit	2	40
1722-CE4'	33.85	Extension	2	40
1723-C4'	44.00	Basic Unit	3	40
1723-CE4'	41.00	Extension	3	40

**Glass Bottom**

With Steel Reflector and Sliding Glass Panels—White Fluoracite Finish

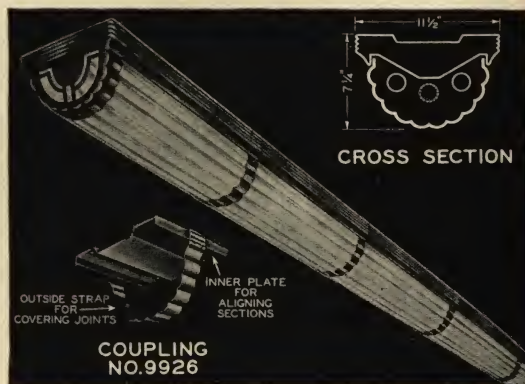
No.	Each	Description	No. of Lamps	Lamp Watts
1752-C4'	\$34.90	Basic Unit	2	40
1752-CE4'	31.90	Extension	2	40
1753-C4'	42.10	Basic Unit	3	40
1753-CE4'	39.10	Extension	3	40

**Day-Brite Kingsway Commercial Lighting Fixtures**

For Two and Three, 20 and 40-Watt Fluorescent Lamps

For Four and Six 40-Watt Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



Designed for surface mounting only as single unit or continuous runs.

Furnished wired and includes sockets, No-Blink starters, and high power factor ballasts for 110-volt a.c. operation.

Ends are of die-cast aluminum with a satin finish.

Side rails and intermediate straps are of die-formed steel finished in baked lustre aluminum enamel.

Fluted glass cylinders are an exclusive Day-Brite design and are sufficiently opaque to eliminate glare and conceal interior part of fixture. Glass cylinders are available in 24-inch lengths and are easily removed by lifting up and sliding over.

Interior reflector is finished in baked super-white enamel.

Single units are listed below for two and three 20-watt lamps; two and three 40-watt lamps; and four and six 40-watt lamps. The four and six-lamp units are double lamp length.

Continuous fixtures are supplied in basic end sections for four and six 40-watt lamps and fill-in end sections for two and three 40-watt and two and three 20-watt lamps. Each of these end sections includes one end plate and can be used at either end of the installation. Intermediate sections are available for two, three, four, and six 40-watt lamps but do not include ends.

A complete installation includes two end sections and the required number of intermediate sections to make up the desired overall fixture length. Couplings are required at each section joint.

Lamps are not included.

**Single Units**

No.	Each	No. of Lamps	Lamp Watts	Length Inches
70221B	\$47.50	2	20	26 $\frac{1}{2}$
70232NB	56.75	3	20	26 $\frac{1}{2}$
70425NB	67.50	2	40	50 $\frac{1}{2}$
70436NB	78.50	3	40	50 $\frac{1}{2}$
70447NB	121.00	4	40	98 $\frac{1}{2}$
70468NB	139.50	6	40	98 $\frac{1}{2}$

**Continuous End Sections**

		No. of Lamps	Lamp Watts	Length Inches
1-C-2NB	\$42.50	2	20	25 $\frac{1}{4}$
1-C-3NB	51.75	3	20	25 $\frac{1}{4}$
1-B-2NB	62.50	2	40	49 $\frac{1}{4}$
1-B-3NB	74.25	3	40	49 $\frac{1}{4}$
1-A-4NB	116.00	4	40	97 $\frac{1}{4}$
1-A-6NB	114.50	6	40	97 $\frac{1}{4}$

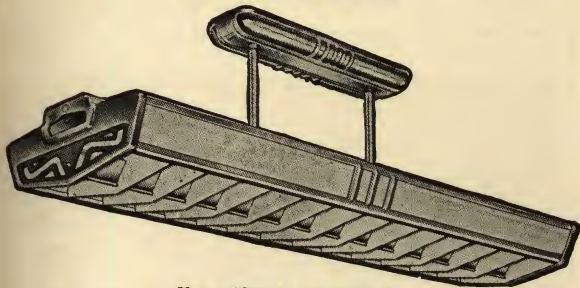
**Continuous Intermediate Sections**

		No. of Lamps	Lamp Watts	Length Inches
2-B-2NB	\$57.50	2	40	48
2-B-3NB	69.25	3	40	48
2-A-4NB	111.00	4	40	96
2-A-6NB	129.50	6	40	96



### Day-Brite Viz-Aid Commercial Lighting Units

For Two 40 and 100-Watt Fluorescent Lamps  
110 Volts, 60 Cycles, A.C.



Nos. 46203-4 and 55203-5

For surface and suspension mounting.

Furnished wired with sockets, No-Blink type starters, and high power factor ballasts for 110-volt a.c. operation.

Steel chassis and snap-on wireway cover finished in baked super-white enamel. Steel enclosure frame and hangers finished in baked lustre aluminum enamel.

Side panels are ribbed, diffused glass.

Center V-shaped louver is finished in baked super-white enamel. Enclosure is attached to chassis by spring clips with service chains provided for maintenance operations.

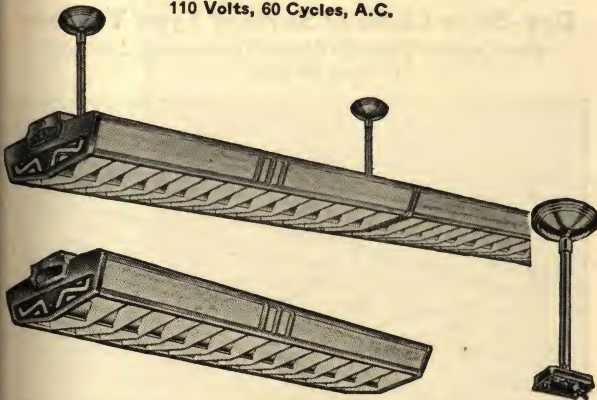
Lamps are not included.

No.	Each	Lamp Watts	DIMENSIONS, INCHES		
			Length	Width	Depth
46202-4	\$40.00	40	49	13	6 1/4
46203-4	44.80	40	49	13	*33 1/4
55202-5	73.00	100	61	16 1/4	8
55203-5	77.80	100	61	16 1/4	*35

\*Hanger length, 27 inches.

### Day-Brite Viz-Aid Continuous Lighting Fixtures

For Two 40 and 100-Watt Fluorescent Lamps  
110 Volts, 60 Cycles, A.C.



Designed for two-lamp surface or suspension type installations. Fixture of any desired length can be made up from parts listed below. Chassis is furnished wired with sockets, No-Blink type starters, and high power factor ballasts for 110-volt a.c. operation.

Basic assembly consists of standard chassis with surface mounting straps and a complete snap-on enclosure.

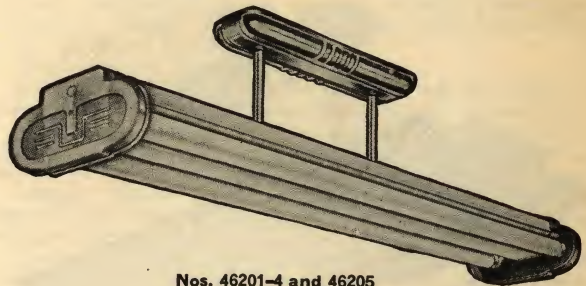
For surface type installation, order the required number of basic assemblies to make up complete fixture length. These are easily mounted and coupled by means of ceiling mounting straps.

For suspension type installation, order the required number of basic assemblies and figure one stem hanger for each assembly, plus one additional hanger to make up the number necessary for the entire run. The hangers are installed at the coupling points of the intermediate assemblies and at the ends of the end assemblies. These hangers have swivel fittings and an adjustable feature which allows over 1 inch of vertical adjustment.

No.	Each	Description	Length Inches
46202-4	\$42.90	40-Watt Basic Assembly	48 1/2
55202-5	76.20	100-Watt Basic Assembly	60 1/2
7719	4.15	Adjustable Hanger	28 1/2

### Day-Brite Topnotch Commercial Lighting Units

For Two 40-Watt Fluorescent Lamps  
110 Volts, 60 Cycles, A.C.



Nos. 46201-4 and 46205

Designed as a single unit for surface or suspension mounting. The 40-watt standard lamp fixture is furnished wired with sockets, No-Blink type starters and high power factor ballasts.

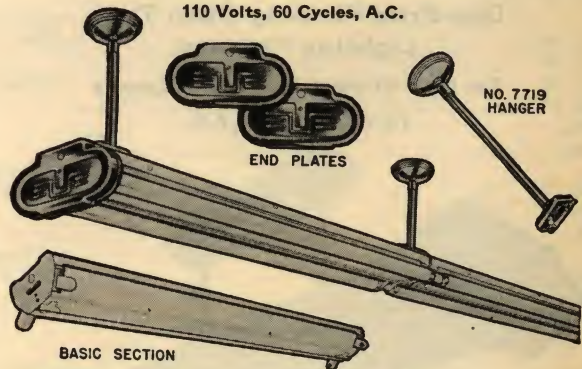
Steel chassis and snap-on wireway cover are finished in baked super-white enamel. Stamped ends and hangers are finished in baked lustre aluminum enamel.

No.	Each	DIMENSIONS, INCHES		
		Length	Width	Depth
46200-4	\$26.05	48 1/2	9 1/4	4 3/4
46201-4	31.55	48 1/2	9 1/4	*31 3/4

\*Hanger length, 27 inches.

### Day-Brite Topnotch Continuous Lighting Fixtures

For Two 40-Watt Fluorescent Lamps  
110 Volts, 60 Cycles, A.C.



Designed as a continuous installation for surface or suspension mounting. Fixture of any desired length can be made up from the parts listed below. The 40-watt standard lamp chassis is furnished wired with sockets, No-Blink type starters, and high power factor ballasts.

For surface type installation, order the required number basic chassis and figure one stem hanger for each assembly, plus one additional hanger to make up the number necessary for the entire run. Hangers are installed at coupling points of the intermediate chassis and at the end of the end chassis, and have swivel fittings and an adjustable feature which allows over 1 inch of vertical adjustment. Add a pair of end plates and the installation is complete.

Lamps not included

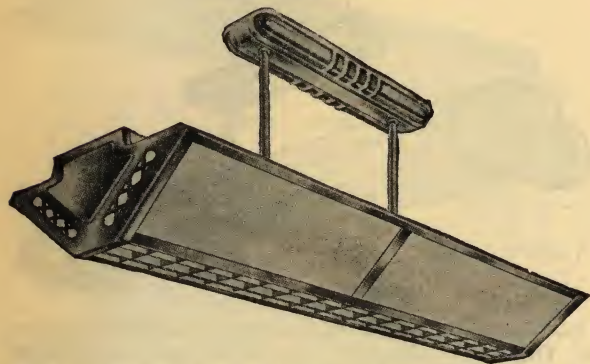
Standard 40-Watt Lamp			
No.	Each	Description	Length Inches
9987-4	\$24.80	40-Watt Chassis	48 1/2
Parts			
9997	\$1.25	Pair of End Plates	....
7719	4.15	Adjustable Hanger	28 1/2



## Day-Brite Coronado Shielded Type Lighting Fixtures

For Four 40-Watt Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



Designed for surface or suspension mounting using four fluorescent lamps. Furnished wired and includes sockets, No-Blink type starters, and high power factor ballasts. Steel louver and chassis are finished in baked lustre aluminum enamel.

Die-formed cut-out ends are backed with diffused plastic. Side panels are of ribbed, diffused glass. Enclosure is held in place by spring clip for easy installation and removal.

Service chains are provided for attachment to chassis so enclosure is supported in lowered position for maintenance operations. Hanger is furnished with swivel fittings and are finished in baked lustre aluminum enamel.

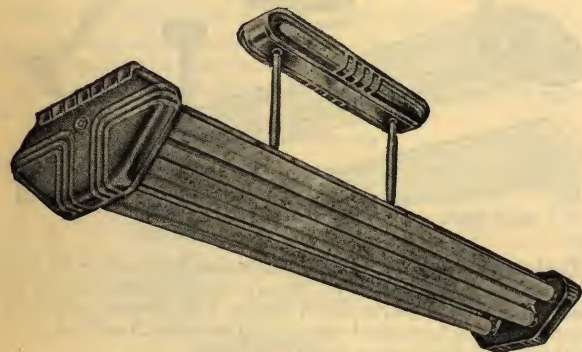
No.	Each	Type	DIMENSIONS, INCHES		
			Length	Width	Depth
46408-4	\$64.00	Surface	48 $\frac{3}{4}$	15	7
46409-4	69.50	Suspension	48 $\frac{3}{4}$	15	*34

\*Hanger length, 27 inches.

## Day-Brite Parkway Open Type Lighting Fixtures

For Four 40-Watt Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



Designed for surface or suspension mounting using four fluorescent lamps.

Furnished wired and includes sockets, No-Blink type starters, and high power factor ballasts.

Chassis is steel and is finished in baked super-white enamel.

Die-formed steel ends are attractive and arranged to allow for relamping without being disturbed.

Hanger is fitted with swivel fittings and both hangers and ends are finished in baked lustre aluminum enamel.

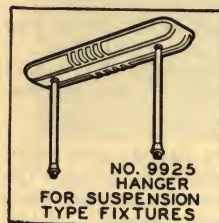
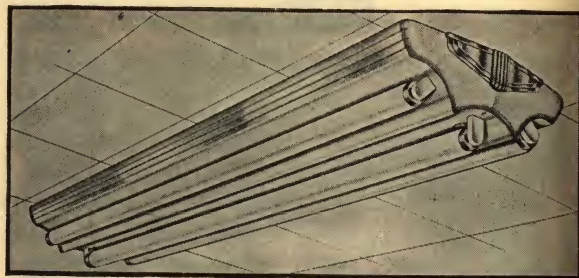
No.	Each	Type	DIMENSIONS, INCHES		
			Length	Width	Depth
46406-4	\$47.00	Surface	48 $\frac{3}{4}$	11	6 $\frac{1}{4}$
46407-4	52.50	Suspension	48 $\frac{3}{4}$	11	*33 $\frac{1}{4}$

\*Hanger length, 27 inches.

## Day-Brite Paralume Lighting Fixtures

For Two, Three, and Four 20 and 40-Watt  
Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



Designed for surface or suspension mounting using two, three, or four lamps.

Furnished wired and includes sockets, No-Blink starters, and high power factor ballasts.

Body is finished in baked super-white enamel with die-cast ends in satin finish with polished ornament.

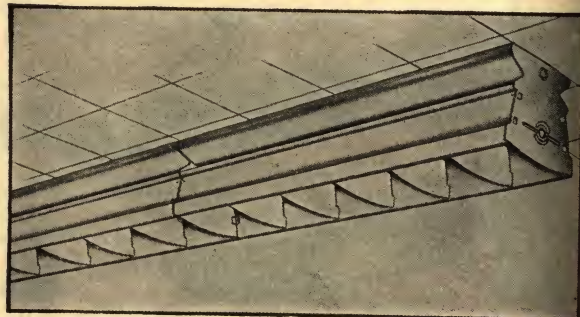
No.	Each	No. of Lamps	Lamp Watts	DIMENSIONS, INCHES		
				Length	Width	Depth
8224-4	\$27.00	2	20	28	9 $\frac{1}{2}$	3 $\frac{1}{2}$
8248-BN	33.50	2	40	52	9 $\frac{1}{2}$	3 $\frac{1}{2}$
8324-2	39.75	3	20	28	11 $\frac{1}{2}$	4 $\frac{1}{4}$
8348-BN	51.00	3	40	52	11 $\frac{1}{2}$	4 $\frac{1}{4}$
8424-2	47.75	4	20	28 $\frac{3}{4}$	13 $\frac{1}{4}$	5 $\frac{1}{2}$
8448-BN	59.25	4	40	52 $\frac{3}{4}$	13 $\frac{1}{4}$	5 $\frac{1}{2}$

For suspension type fixtures, No. 9925 hanger, finished in lustre aluminum, is added to units listed at \$5.50 additional.

## Day-Brite Liteway Surface Type Troffers

For One or Two 40-Watt Fluorescent Lamps

110 Volts, 60 Cycle, A. C.



Designed for single unit or continuous runs using one or two fluorescent lamps.

Made of die-formed steel finished in baked super-white enamel.

Openings in side provide ceiling illumination, and removable louvers provide proper shielding.

One-lamp fixtures (Nos. 45120-4 and 45122-4) can be installed in pairs for Tulamp ballast operation. No. 45120-4 is wired with Tulamp ballast and No. 45122-4 is supplied with sockets and starter only and is to be wired to No. 45120-4 on installation.

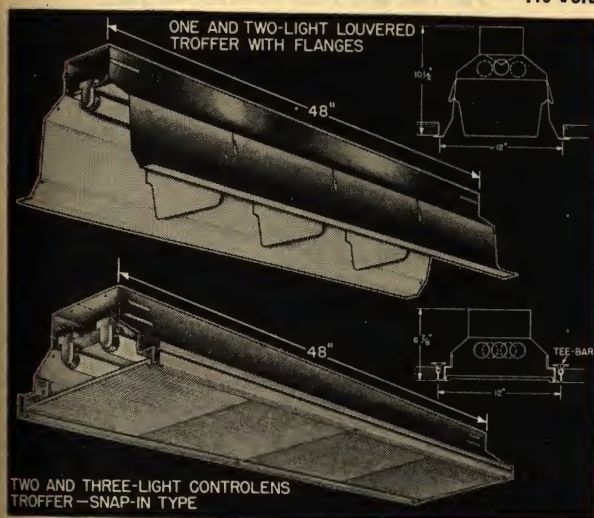
Furnished wired, except as noted above, and include sockets, No-Blink starters, and high power factor ballasts.

No.	Each	No. of Lamps	DIMENSIONS, INCHES		
			Length	Width	Depth
45120-4	*\$59.50	1	48 $\frac{1}{8}$	11 $\frac{5}{8}$	10 $\frac{1}{4}$
45122-4	*59.50	1	48 $\frac{1}{8}$	11 $\frac{5}{8}$	10 $\frac{1}{4}$
45124-4	34.75	1	48 $\frac{1}{8}$	11 $\frac{5}{8}$	10 $\frac{1}{4}$
45220-4	43.10	2	48 $\frac{1}{8}$	11 $\frac{5}{8}$	10 $\frac{1}{4}$

\*Per pair.



**Day-Brite Recessed Troffer Fixtures**  
**For Acoustical and Plaster Ceilings**  
 110 Volts, 60 Cycles, A.C.



The complete line of Day-Brite Recessed Troffer fixtures includes both snap-in type, for use with Tee-Bar supported ceilings, and flange-type, for use with standard plaster and acoustical ceilings. Both are available with louver and with Holophane Controlens.

Made of heavy gage steel throughout.

Body is assembled of die-formed parts and the ends are provided with 1/2-inch knockouts for service connections.

Sockets and starter are supported on mounting straps allowing complete and easy removal of wireway cover for access to control equipment without disturbing fixture.

Interior, louver, and all exposed trim are finished in baked super-white enamel providing a diffused reflecting surface of high efficiency.

Furnished wired (through circuit wires not included) with sockets, No-Blink starters, and high power factor ballasts.

One-lamp fixtures can be furnished in pairs with alternate sections wired with Tulamp ballast for the most economical installation. When furnished in this manner, sockets, lamp starter, and Tulamp ballast is installed in one section with sockets and lamp starter only in the other. Connections between the two can be made on installation.

**With Louvers**  
**For One and Two 40-Watt Fluorescent Lamps**

Louver is designed to slide into position and requires no tools for installation or removal. Snap-in type fixtures are designed to snap into position and is supported by the same Tee-Bar that supports the acoustical ceiling.

With the flange-type fixtures, overhead suspension straps should be ordered. One suspension strap is recommended for each 4-foot section to be located approximately at coupling point, plus one additional strap for end section. Plaster frames are available on special order.

One-Lamp Snap-In Type		
No.	Description	Each
L-42180CO..	Section Wired with Sockets, Starter, and One-Lamp Ballast.....	\$29.10
L-42181CO..	Section Wired with Sockets and Starter Only.....	18.50
L-42182CO..	Section Wired with Sockets, Starter, and Tulamp Ballast.....	31.40
9921X.....	Coupling Plate.....	1.70
9930.....	End Plate.....	1.30
One-Lamp Flange Type		
L-42190CO..	Section Wired with Sockets, Starter, and One-Lamp Ballast.....	\$29.10
L-42191CO..	Section Wired with Sockets and Starter Only.....	18.50
L-42192CO..	Section Wired with Sockets, Starter, and Tulamp Ballast.....	31.40
9921X.....	Coupling Plate.....	1.70
9947.....	End Plate.....	1.80
9948.....	Suspension Strap.....	1.40
Two-Lamp Snap-In Type		
L-42280CO..	Section Wired with Sockets, Starter, and Tulamp Ballast.....	\$33.90
9921X.....	Coupling Plate.....	1.70
9930.....	End Plate.....	1.30
Two-Lamp Flange-Type		
L-42290CO..	Section Wired with Sockets, Starter, and Tulamp Ballast.....	\$33.90
9921X.....	Coupling Plate.....	1.70
9947.....	End Plate.....	1.80
9948.....	Suspension Strap.....	1.40

**With Holophane Controlens**  
**For Two and Three 40-Watt Fluorescent Lamps**

The Holophane Controlens Troffer is a shallower fixture than the louver type and is optically engineered to provide the utmost in output and controlled illumination.

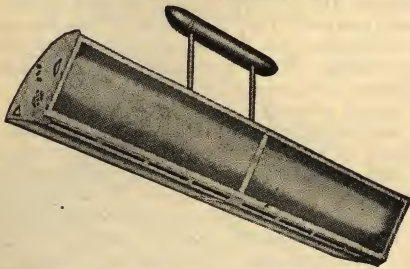
The snap-in type fixture is snapped into position and is supported by the same Tee-Bar as the acoustical ceiling

material. The flange-type fixture has mounting holes along the side so that it can be fastened direct to a wood ground. Overhead suspension straps can also be used with this fixture, if desired. Plaster frames are available on special order.

Two-Lamp Flange-Type		
42250CO....	Section Wired with Sockets, Starters, and Tulamp Ballast.....	\$54.50
7754.....	End Plate.....	1.15
7753.....	Coupling Plate.....	1.10
Two-Lamp Flange-Type		
42255CO....	Section Wired with Sockets, Starter, and Tulamp Ballast.....	\$54.50
7755.....	Coupling Plate.....	1.20
7709.....	Suspension Strap.....	1.20
7749.....	End Plate.....	1.90
Three-Lamp Snap-In Type		
42350CO....	Section Wired with Sockets, Starters, and Ballasts.....	\$67.75
7754.....	End Plate.....	1.15
7753.....	Coupling Plate.....	1.10
Three-Lamp Flange-Type		
42355CO....	Section Wired with Sockets, Starters, and Ballasts.....	\$67.75
7755.....	Coupling Plate.....	1.20
7709.....	Suspension Strap.....	1.20
7749.....	End Plate.....	1.90



**Leader Commercial Glass Enclosed  
Lighting Fixtures**  
For Two and Four 40-Watt Fluorescent Lamps  
110-125 Volts—60 Cycles—A.C.



Designed for offices, schools and stores.

Can be used in single or continuous run installations either mounted flush or hung from stems.

Glass panels are treated for low surface brightness.

Housing is made of 20-gage cold-rolled steel.

Operates on 110-125 volts, 60 cycles a.c. Other voltages on request. Also available for instant start operation at additional cost.

Finished in satin aluminum. Reflector finished in white, high gloss, chip-proof enamel.

**No. GL-240C** takes two 40-watt fluorescent lamps. Has UL and ETL approved high power factor ballasts and replaceable FS4 starters. Dimensions: length,  $48\frac{3}{8}$  inches; width,  $10\frac{1}{2}$  inches; height,  $7\frac{3}{8}$  inches. Shipping weight, 36 pounds.

**No. GL-440C** takes four 40-watt fluorescent lamps. Has UL and ETL approved Tulamp high power factor ballast and replaceable FS4 starters. Dimensions: length,  $48\frac{3}{8}$  inches; width,  $13\frac{3}{8}$  inches; height,  $7\frac{1}{4}$  inches. Shipping weight, 53 pounds.

**No. GL-240C**.....each \$28.36

**No. GL-440C**.....each 55.46

Stem and canopy assembly No. C-450, for pendent mounting, is furnished at additional cost.

**Leader Glass Enclosed Fluorescent Fixtures**  
For Four 40-Watt 48-Inch T-12 Fluorescent Lamps  
110-125 Volts—60 Cycles—A.C.



Designed for schools, offices, and institutions where the best possible light is necessary.

Parabolic reflectors provide maximum light output.

Louver design permits full downward light without side glare. Skytex ribbed glass provides greater diffusion of light, no glare, and adds to the beauty of the unit.

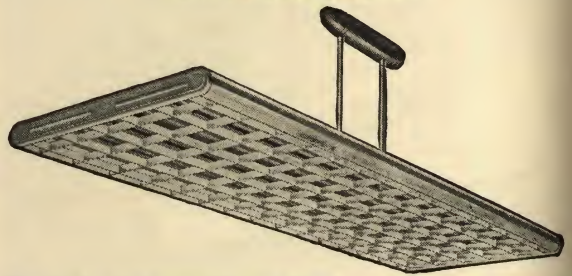
Takes four 40-watt, 48-inch, fluorescent lamps. Has Underwriters' Laboratories and ETL approved high power factor ballasts and FS4 replaceable starters. Operates on 110-125 volts, 60 cycles a.c. Other voltages available upon request. Also available for instant start operation at additional cost. Finished in silver-gray enamel with stainless steel trim. Reflectors are chip-proof white enamel.

Dimensions: length,  $48\frac{1}{4}$  inches; width,  $12\frac{1}{2}$  inches; height,  $7\frac{1}{2}$  inches. Shipping weight, 53 pounds.

**No. G-440C**.....each \$58.87

Stem and canopy assembly No. C-450, for pendent mounting, furnished at additional cost. Various stem lengths will be furnished on special order.

**Leader Officer-Deluxe Commercial  
Lighting Fixtures**  
For Two and Four 40-Watt 48-Inch  
T-12 Fluorescent Lamps  
110-125 Volts—60 Cycles—A.C.



For flush or suspended, single or continuous run installations.

White high gloss louver diffuses natural light brightness without sacrificing light output. Louver is a hinged snap lock type to provide swift, simple servicing.

Molded plastic translucent side panels give light transmission without glare. Also available with solid steel panels on request.

Operates on 110-125 volts, 60 cycles a.c. Other voltages and frequencies available on application. Also available for instant start operation at additional cost.

Wired units include sockets, type FS easily replaceable starters, and Underwriters' Laboratories and Electrical Testing Laboratories approved high power factor 2-lamp ballast.

**No. VL-240** takes two 40-watt, 48-inch, T-12 fluorescent lamps. Dimensions: length,  $49\frac{1}{2}$  inches; width,  $10\frac{3}{8}$  inches; height,  $3\frac{1}{8}$  inches. Packed in individual cartons. Shipping weight, 30 pounds.

**No. VL-440** takes four 40-watt, 48-inch, T-12 fluorescent lamps. Dimensions: length,  $49\frac{1}{2}$  inches; width,  $16\frac{1}{8}$  inches; height,  $3\frac{1}{8}$  inches. Packed in individual cartons. Shipping weight, 50 pounds.

**No. VL-240C**.....each \$42.53

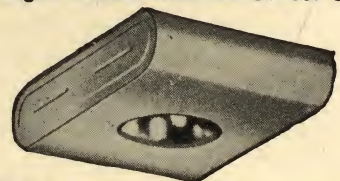
**No. VL-440C**.....each 70.26

Ceiling tracks supplied for ceiling mounting at no extra cost.

Swivel hangers, stems, ceiling strap, and canopy furnished for pendent mounting at additional cost.

Connecting bands furnished for continuous run installations at no extra charge.

**Leader Adjustable Direclite  
Spotlight Attachment for Officer Units**



Used for a multitude of merchandise lighting purposes. Can be installed at the end of a single unit or between units in a series.

For either 2 or 4-lamp fixture.

**For No. VL-240 Installations**

**No. LS 60** takes P.A.R. 38 bulb; both ends open for continuous run.

**No. LS 61** takes P.A.R. 38 bulb; one end open for single unit.

Dimensions: length (side),  $10\frac{1}{8}$  inches; width (end),  $10\frac{1}{4}$  inches; height,  $6\frac{1}{8}$  inches.

**No. LS 60**.....each \$17.38

**No. LS 61**.....each 17.38

**For No. VL-440 Installations**

**No. LS 70** takes P.A.R. 38 bulb; both ends open for continuous run.

**No. LS 71** takes P.A.R. 38 bulb; one end open for single unit.

Dimensions: length (side),  $10\frac{1}{8}$  inches; width (end),  $16\frac{1}{8}$  inches; height  $6\frac{1}{8}$  inches.

**No. LS 70**.....each \$18.49

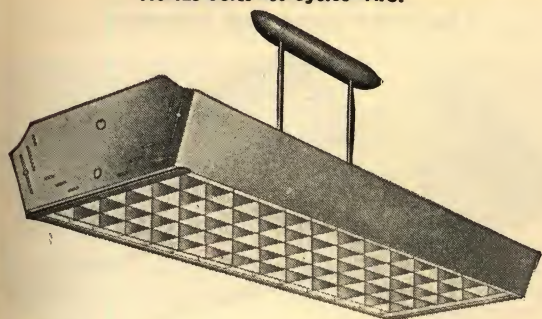
**No. LS 71**.....each 18.49

Order couplers separately.



**Leader URC Research Luminaires**

**For Four 40-Watt 48-Inch T-12 Fluorescent Lamps**  
110-125 Volts—60 Cycles—A.C.



Designed to meet all better light, better sight requirements. Lends itself particularly to commercial installations. Can be hung individually or in continuous rows by pendant or ceiling mounting. Takes four 40-watt, 48-inch T-12 fluorescent lamps. Furnished with UL and ETL approved Tulamp ballasts and easily replaceable starter switches.

Available with or without louvers. Also available for instant start operation at additional cost.

End plates finished in silver gray enamel, channel in high reflecting chip-proof white enamel.

Both tracks A and B, for surface mounting, are furnished as standard equipment with each unit. Track A is used on single unit mounting. Track B is double type used when units are joined together end to end.

Dimensions: length 49 $\frac{1}{8}$  inches; width, 19 $\frac{1}{8}$  inches; height, 7 inches.

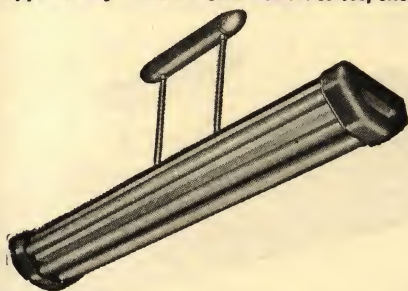
No. LR-440C Shipping Weight, 78 Pounds.....each \$49.27  
No. LRL-440C, with Louvers, Shipping Weight, 74 Pounds.....each 63.24

Stem and canopy assembly No. C-450 for pendent mounting is furnished at additional cost. Various stem lengths are available if specified.

**Leader High Level Open Type Commercial Lighting Fixtures**

**For Two and Four 40-Watt 48-Inch Fluorescent Lamps**  
110-125 Volts—60 Cycles—A.C.

Approved by Underwriters' Laboratories, Inc.



Used in schools, stores, and offices. Designed for single or continuous run installation, either surface or pendent mounting. Durable steel construction. Top finished in satin aluminum enamel; reflectors are chip-proof white enamel.

Available for instant start operation at additional cost.

No. L-240C takes two 40-watt, 48-inch fluorescent lamps. E.T.L. approved high power factor ballast and FS4 replaceable starters. Operates on 110-125 volts, 60 cycle a.c. Other voltages available on request. Dimensions: 49x8x5 inches. Shipping weight, 19 pounds.

No. L-440C takes four 40-watt, 48-inch, fluorescent lamps. E.T.L. approved high power factor ballasts, and FS4 replaceable starters. Operates on 110-125 volts, 60 cycle a.c. Other voltages available on request. Dimensions: 49x9 $\frac{1}{2}$ x5 $\frac{1}{2}$  inches. Shipping weight, 40 pounds.

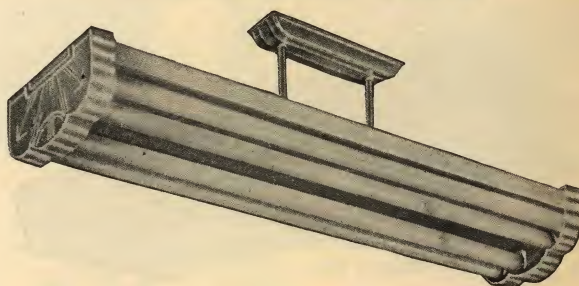
No. L-240C.....each \$24.36  
No. L-440C.....each 42.84

Stem and canopy assembly No. C-450, for pendent mounting, is furnished at additional cost. Order connecting coupler separately for continuous run installations.

**No. 3002 Mitchell Luminaires**

**For Four 40-Watt Fluorescent Lamps**  
110-125 Volts, 60 Cycles A.C.

Approved by Underwriters' Laboratories



Approved by Fleur-O-Lier and Electrical Testing Laboratories for surface or suspension mounting.

Stroboscopic corrected.

Power factor over 90 per cent.

Wireway channel and reflector are made of heavy gage steel.

Ends are translucent plastic.

Dimensions: length, 48 inches; width, 10 inches; height, 5 $\frac{3}{4}$  inches.

Finished in white baked enamel.

For suspension mounting, use canopy and stem set No. 032ST (stems, 36 inches long;  $\frac{3}{8}$ -inch iron pipe).

Suspension fixtures furnished at extra cost.

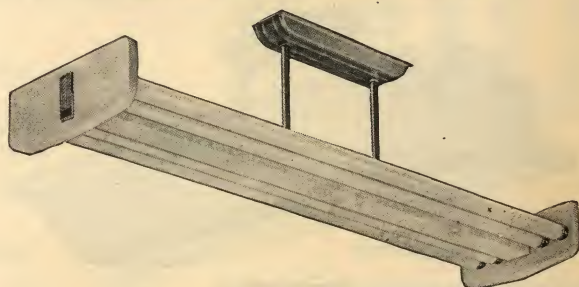
No. 3002.....each \$39.25  
No. 032ST, Suspension Set.....each 2.95

**No. 2044 Mitchell Open Type Luminaires**

**For Four 40-Watt Fluorescent Lamps**

110-125 Volts, 60 Cycles A.C.

Approved by Underwriters' Laboratories



Single Unit  
Suspension Mounted

Approved by Fleur-O-Lier and Electrical Testing Laboratories for general illumination.

May be surface mounted as single unit, or continuous row, or suspension mounted. Slides into place on metal tracks.

Stroboscopic corrected. Power factor over 90 per cent.

Has metal wireway channel. End plates finished in high satin aluminum.

Dimensions: length, 49 inches; width, 12 $\frac{3}{4}$  inches; height, 5 $\frac{1}{2}$  inches.

For suspension mounting, use canopy and stem set No. 032ST (stems, 36 inches long;  $\frac{3}{8}$ -inch iron pipe).

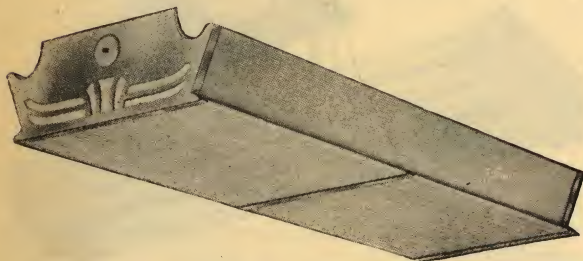
No. 2044.....each \$42.40  
No. 032ST, Suspension Set.....each 2.95



**No. 2032 Mitchell U.R.C. Luminares****For Four 40-Watt Fluorescent Lamps**

110-125 Volts, 60 Cycles A.C.

Approved by Underwriters' Laboratories



Designed for mounting directly to the surface of the ceiling, either as an individual unit or end-to-end to form a continuous row. Also used for pendent hanging.

Has metal wireway channel and end plates are satin aluminum. Equipped with double-strength ribbed ceramic-coated glass side panels and prismatic ribbed glass bottom panels.

Installed on metal tracks.

Dimensions: length, 48 $\frac{3}{4}$  inches; width 19 $\frac{3}{4}$  inches; height, 7 inches.

Channel is finished in white baked enamel.

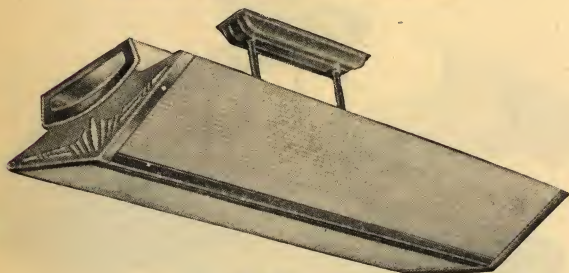
For suspension, use canopy and stem set No. 032ST, furnished at extra cost.

No. 2032.....each \$51.95  
No. 032ST, Suspension Set.....each 2.95

**No. 3004 Mitchell Luminares****For Four 40-Watt Fluorescent Lamps**

110-125 Volts, 60 Cycles A.C.

Approved by Underwriters' Laboratories



**Single Unit  
Suspension Mounted**

Approved by Fleur-O-Lier and Electrical Testing Laboratories for single unit suspension mounting or continuous row surface or suspension mounting.

Stroboscopic corrected. Power factor over 90 per cent.

Made of steel with prismatic ribbed glass panels and end plates of satin aluminum having luminous translucent effect.

Dimensions: length, 48 inches; width, 17 $\frac{1}{2}$  inches; height, 6 $\frac{1}{2}$  inches.

Wireway channel is finished in white baked enamel.

For suspension mounting, use canopy and stem set No. 032ST.

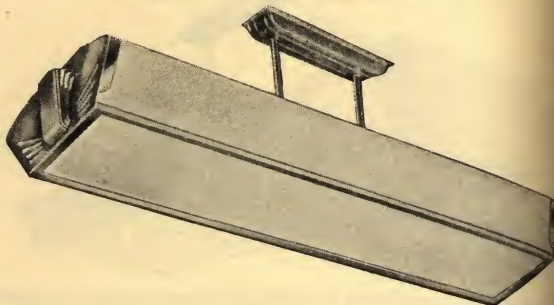
Suspension fixtures furnished at extra cost.

No. 3004.....each \$44.35  
No. 032ST, Suspension Set.....each 2.95

**Nos. 3005 and 3007 Mitchell Luminares****For Two and Four 40-Watt Fluorescent Lamps**

110-125 Volts, 60 Cycle A.C.

Approved by Underwriters' Laboratories



**Single Unit  
Suspension Mounted**

Approved by Fleur-O-Lier and Electrical Testing Laboratories for single unit suspension mounting or continuous row surface or suspension mounting.

Stroboscopic corrected. Power factor over 90 per cent.

Made of steel with double-strength ceramic treated side panel and prismatic ribbed glass bottom panel. End plates are of satin aluminum having luminous translucent effect.

No. 3005, for two 40-watt lamps. Dimensions: length, 48 inches; width, 12 $\frac{1}{2}$  inches; height, 7 $\frac{1}{4}$  inches.

No. 3007, for four 40-watt lamps. Dimensions: length, 48 inches; width, 17 inches; height, 7 $\frac{1}{4}$  inches.

Metal parts finished in white baked enamel.

For suspension mounting, use canopy and stem set No. 032ST.

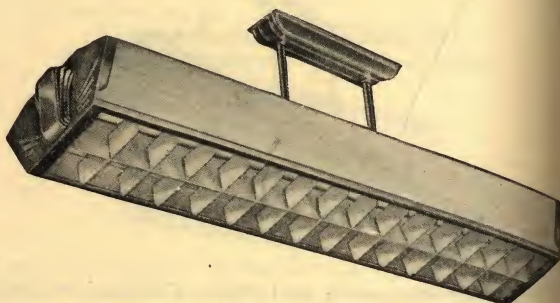
Suspension fixtures furnished at extra cost.

No. 3005.....each \$36.90  
No. 3007.....each 53.40  
No. 032ST, Suspension Set.....each 2.95

**Mitchell Louvered Luminares****For Two and Four 40-Watt Fluorescent Lamps**

110-125 Volts, 60 Cycles A.C.

Approved by Underwriters' Laboratories



**Single Unit  
Suspension Mounted**

Approved by Fleur-O-Lier and Electrical Testing Laboratories for individual suspension or continuous row surface mounting.

Stroboscopic tested. Power factor over 90 per cent.

Has full depth metal louvers, ceramic treated glass side panels, and satin aluminum end plates with luminous apertures. Made of steel.

No. 3009, for two 40-watt lamps. Dimensions: length, 48 inches; width, 12 $\frac{1}{2}$  inches; height, 8 $\frac{1}{4}$  inches.

No. 3011, for four 40-watt lamps. Dimensions: length, 48 inches; width, 17 inches; height, 8 $\frac{1}{4}$  inches.

Finished in white baked enamel.

For suspension, use canopy and stem set No. 032ST.

Suspension fixtures furnished at extra cost.

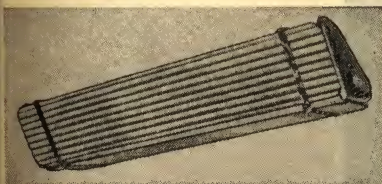
No. 3009, For 2 Lamps.....each \$39.95  
No. 3011, For 4 Lamps.....each 57.95



## Litecontrol Lighting Units

### F-70 Series

For Two and Four Fluorescent Lamps



Hinged-glass unit for offices, schools, stores, and all commercial applications.

For individual or continuous mounting; surface or pendant mounting.

#### For Two Fluorescent Lamps

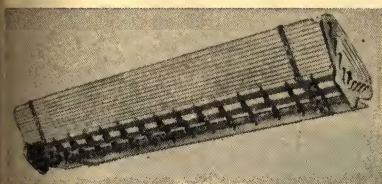
No. F-72S, Surface.....each	\$43.30
No. F-72P, Pendant.....each	48.30
No. F-72C, Continuous....each	39.60
No. 72-3, End Cap for Continuous Runs.....each	1.80

#### For Four Fluorescent Lamps

No. F-74S, Surface.....each	\$66.50
No. F-74P, Pendant.....each	71.50
No. F-74C, Continuous....each	62.50
No. 74-3, End Cap for Continuous Runs.....each	2.00

### 90 Series

For Four Fluorescent Lamps



Combination hinged-glass sides and louvered bottom.

May be surface mounted, either as a single unit or in continuous runs, and pendant mounted.

No. 94S, Surface.....each	\$74.50
No. 94P, Pendant.....each	79.50
No. 94C, Continuous....each	68.90
No. 94-3, End Cap for Continuous Runs.....each	2.80

### 30 Series

For Two or Three Fluorescent Lamps



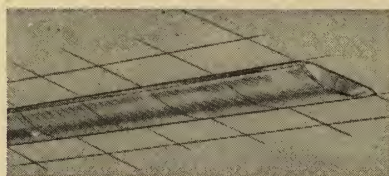
Completely recessed troffer type unit with Holophane Controlenses.

For continuous mounting where a 12-inch clear opening is available.

No. 32C, Two-Lamp Continuous.....each	\$56.30
No. 33C, Three-Lamp Continuous.....each	70.00
No. 32-3, End Cap for Continuous Runs.....each	1.50

### 9000 Series

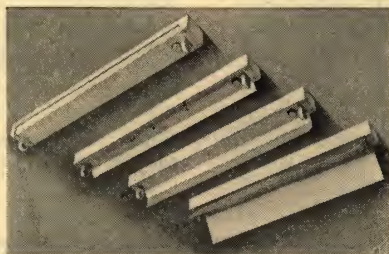
For Two or Three Fluorescent Lamps



Flush troffer type unit using Holophane curved Controlenses.

No. 9052, Two-Lamp.....each	\$71.30
No. 9053, Three-Lamp.....each	85.00
No. 9052-3, End Cap.....each	4.50

### Series 15 Strip Fixtures



Designed for single or continuous mounting.

Made in four types: plain channel; angle reflector; and deep and shallow trough reflectors.

#### Plain Channel

No.	Each	Length Inches
15-SC-24	\$12.80	26
15-SC-36	17.30	38
15-SC-48	18.00	50
15-SC-48D	28.80	98

#### Angle Reflector

No.	Each	Length Inches
15-SA-24	\$14.80	26
15-SA-36	19.80	38
15-SA-48	21.60	50
15-SA-48D	30.70	98

#### Shallow Trough

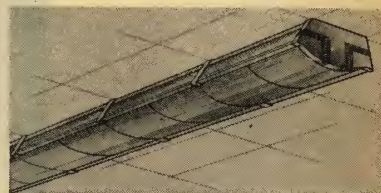
No.	Each	Length Inches
15-ST-24	\$12.80	26
15-ST-36	17.30	38
15-ST-48	18.00	50
15-ST-48D	28.80	98

#### Deep Trough

No.	Each	Length Inches
15-SDT-24	\$15.50	26
15-SDT-36	21.00	38
15-SDT-48	22.80	50
15-SDT-48D	32.30	98

### 9200 Series

For Two or Three Fluorescent Lamps



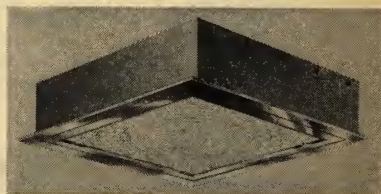
Surface type unit using Holophane curved Controlenses.

Side glass panels allow light on ceiling.

For single or continuous mounting.

No. 9224, Two-Lamp.....each	\$78.30
No. 9234, Three-Lamp.....each	92.00
No. 9224-3, End Cap.....each	7.50

### Incandescent Holophane Flush Lens Boxes



No.	Each	Max. Lamp Size Watts	Roughing Box Size, INCHES Square	Depth
6F-V10	\$20.00	100	8 <sup>5</sup> / <sub>8</sub>	7
6F-H10	17.90	100	8 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>4</sub>
8F-V15	26.00	150	10 <sup>5</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>4</sub>
*8F-V15S	30.00	150	10 <sup>5</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>4</sub>
8F-H15	20.60	150	10 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>
12F-V30	32.80	300	14 <sup>1</sup> / <sub>8</sub>	10 <sup>7</sup> / <sub>8</sub>
*12F-V30S	39.20	300	14 <sup>1</sup> / <sub>8</sub>	10 <sup>7</sup> / <sub>8</sub>
12F-H30	28.00	300	14 <sup>1</sup> / <sub>8</sub>	6 <sup>5</sup> / <sub>8</sub>

\*Furnished with square reflector.

### Exit Signs



Cutout letters are 5 inches high backed with red glass.

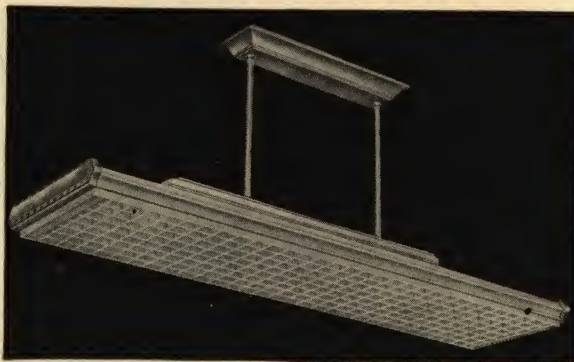
Trim is hinged for easy relamping.

Trim and surface boxes furnished with baked statuary bronze finish.

No. 5F, Flush Type.....each	\$14.50
No. 5E, Surface Type....each	15.80



**No. 604 F.S. Silvrescent Fixtures**  
**Suspension Type**  
**For Four 40-Watt Fluorescent Lamps**  
**Approved by Underwriters' Laboratories**



Used in executive and general offices, drafting rooms, stores, public buildings, banks, and hospitals as single unit or continuous runs.

Diamond reflector system assures high efficiency and minimum maintenance. The shallow body of the fixture is a little deeper than the lamps themselves.

**Construction Features:** Die-formed steel construction assures precision fit and permanent, trouble-free service. Special egg-crate type steel louver offers efficient shielding with minimum depth (only  $\frac{1}{2}$ -inch deep). Shield snaps on and off. Four positive-action spring grips fasten to steel pins in body of fixtures. Furnished with "Holdsure" latch construction which permits lowering of shield for cleaning or relamping without the need for completely removing shield for these operations.

**Light Output.** Well-balanced direct and indirect components are delivered. Certified (E.T.L.) output: 86 per cent; with louver, 77 per cent.

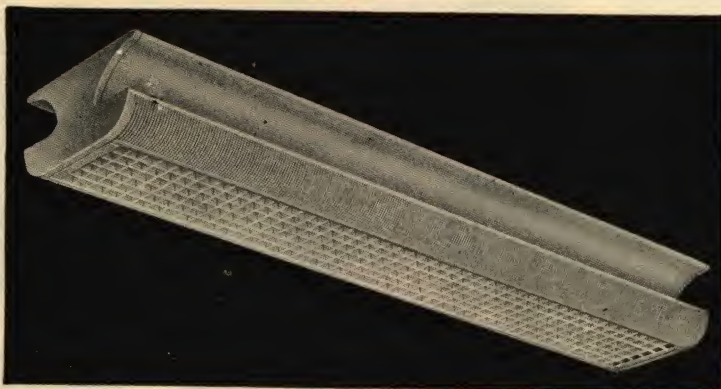
Equipped with approved, high power factor ballasts.

Sockets, starters, and starter sockets are Fleur-O-Lier approved.

Canopy, stems, end plates, diamond reflectors, and ballast housing are finished in white gloss Polymerin. Also available in cadmium plated finish at slightly higher cost.

No.	Each	No. of Lamps	Lamp Watts	DIMENSIONS, INCHES				Approx. Ship. Wt. Lb.
				Length	Width	Height	Depth	
604F.S.	\$81.40	4	40	49 $\frac{1}{2}$	13	26	2	42

**Nos. 80 and 160 Silvrescent Fixtures**  
**Ceiling Mounted**  
**For Two and Four 40-Watt Fluorescent Lamps**  
**Approved by Underwriters' Laboratories**



Used in executive and general offices, department stores, drafting rooms, public buildings, banks, schools, and hospitals as single unit or continuous runs.

No. 80 is a two-lamp unit and No. 160 is a four-lamp unit. Identical design makes them ideal companion pieces.

**Construction Features.** Made of heavy gage steel which prevents breakage and deterioration. No glass, plastic, or other breakable parts. Equipped with approved ballasts and accessories.

**Design Features.** Compact design results in a unit which is only  $5\frac{3}{4}$  inches deep and  $10\frac{1}{2}$  inches wide to accommodate either two or four 40-watt lamps. Effective side shielding at all normal viewing angles is accomplished by "Louveright" shielding with 50 per cent transmission. Egg-crate type steel shield, 6 inches wide with 1-inch square openings provides 45-degree shielding for the two middle lamps.

The shield is one piece, securely hinged, and is firmly fastened to the body by two "Holdsure" latches, permitting quick lowering of shield for easy access to starters and lamps.

Die-formed steel parts make for tight assembly and accurate alignment.

Finished in durable, easy to clean, white gloss Polymerin.

Shield may be cleaned by occasional brushing.

Furnished complete with shield.

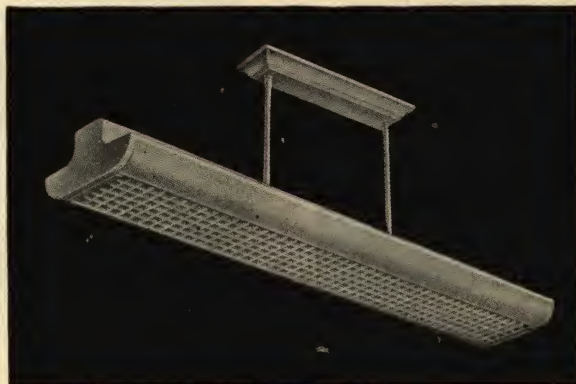
No.	Each	No. of Lamps	Lamp Watts	DIMENSIONS, INCHES			Approx. Ship. Wt. Lb.
				Length	Width	Depth	
†*160	\$76.20	4	40	49	10 $\frac{1}{2}$	5 $\frac{3}{4}$	50
†160-E	76.20	4	40	49	10 $\frac{1}{2}$	5 $\frac{3}{4}$	50
80	64.70	2	40	49	10 $\frac{1}{2}$	5 $\frac{3}{4}$	45
80-E	64.70	2	40	49	10 $\frac{1}{2}$	5 $\frac{3}{4}$	45

\*Also furnished as a 2-lamp unit. Specify No. 80 for double stem suspension and No. 80E for single stem suspension (for continuous mounting).

†Continuous run.



## Nos. 80-S and 160-S Silvrescent Fixtures Suspension Type For Two and Four 40-Watt Fluorescent Lamps Approved by Underwriters' Laboratories



Used in executive and general offices, department stores, specialty shops, drafting rooms, public buildings, banks, schools, and hospitals as single unit or continuous runs.

**Construction Features.** Made of heavy gage steel which prevents breakage and deterioration. No glass, plastic, or other breakable parts; approved ballasts and accessories.

**Design Features.** Similar in appearance to Nos. 80 and 160. Compact design provides a unit which is only  $5\frac{3}{4}$  inches deep and  $10\frac{1}{2}$  inches wide to accommodate either two or four 40-watt lamps. Effective side shielding at all normal viewing angles is accomplished by "Louverright" shielding with 50 per cent transmission. Egg-crate type steel shields, 6 inches wide

with 1-inch square openings, provide 45-degree shielding for the two middle lamps.

The shield is in one piece, securely hinged, and is firmly fastened to the body by two "Holdsure" latches, permitting quick lowering of shield for easy access to starters and lamps.

Die-formed steel parts make for tight assembly and accurate alignment. For continuous mounting, units are furnished with single stem support and a simple shallow canopy which is available in variable lengths. Standard length is 18 inches.

Finished in durable, easy to clean, white gloss Polymerin.

Furnished complete with shield.

No.	Each	No. of Lamps	Lamp Watts	DIMENSIONS, INCHES				Type	Approx. Ship. Wt. Lb.
				Length	Width	*Height	Depth		
†160-S	\$81.90	4	40	49	$10\frac{1}{2}$	26	$5\frac{3}{4}$	Double Stem	50
†160-SE	80.50	4	40	49	$10\frac{1}{2}$	26	$5\frac{3}{4}$	Single Stem, Continuous	50
80-S	70.40	2	40	49	$10\frac{1}{2}$	26	$5\frac{3}{4}$	Single Stem, Continuous	45
80-SE	69.00	2	40	49	$10\frac{1}{2}$	26	$5\frac{3}{4}$	Single Stem, Continuous	45

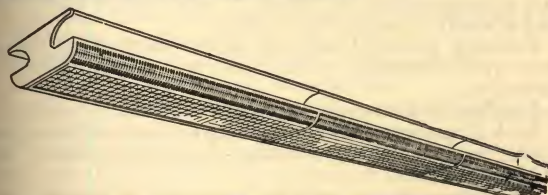
\*To bottom of shield. †Also furnished as a 2-lamp unit. Specify No. 80-S for double stem suspension and No. 80-SE for single stem suspension (continuous mounting).

### Applications of Silvrescent Fixtures



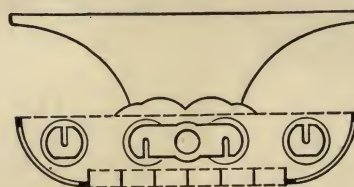
View of One-Piece Shield  
Showing Full Access to Lamps and Starters

The shield may be cleaned by an occasional brushing. Effective shielding of center lamps is accomplished by 1-inch square openings in louver. Outside lamps are well shielded by slotted metal "Louverright" shields.



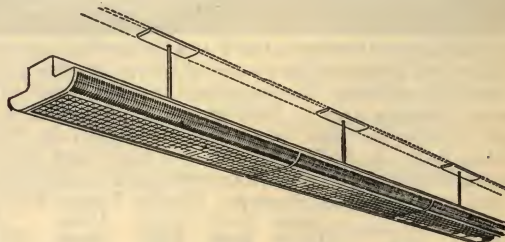
Continuous Mounting of Ceiling-Mounted Fixtures

Nos. 80 and 160 are butted together and furnished with a connecting strip to assure accurate alignment. Specify No. 80-E and 160-E.



Cut-Away End View  
Showing Lamp Positions

In two-lamp models, the "Louverright" shields are evenly illuminated by light directed to them from the two centrally located lamps.



Continuous Mounting of Nos. 80-S and 160-S

Single stem support for each unit. Shallow ceiling canopy. Alignment of fixtures assured by connecting strip. Specify No. 80-SE and 160 SE.

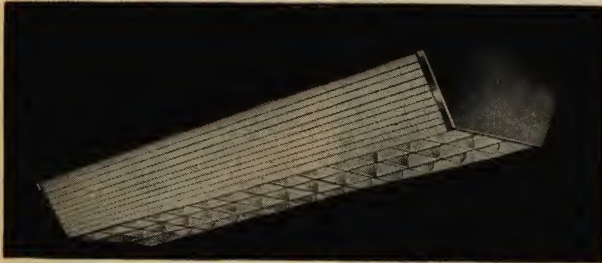


## Pittsburgh Permaflexor Presidential Series Fluorescent Luminaries and Troffers

For commercial, institutional, and industrial lighting purposes.

The Wilson, Tyler, Jefferson, and Van Buren Models are surface mounted or suspension mounted with hanger No. AH-201, individually or in a continuous row.

**Wilson Model**



Iridescent Linex Satinol glass side panels and fully-hinged egg-crate louver bottom assure well-shielded and efficient illumination as well as easy accessibility.

No.	Each	Lamps No. and Watts	Length Inches	Width Inches	Depth Inches	Shipping Weight Pounds
A-4240	\$51.08	2-40	48 $\frac{1}{8}$	15 $\frac{7}{8}$	7 $\frac{3}{4}$	46
A-4340	63.58	3-40	48 $\frac{1}{8}$	15 $\frac{7}{8}$	7 $\frac{3}{4}$	50
A-4440	66.20	4-40	48 $\frac{1}{8}$	15 $\frac{7}{8}$	7 $\frac{3}{4}$	58

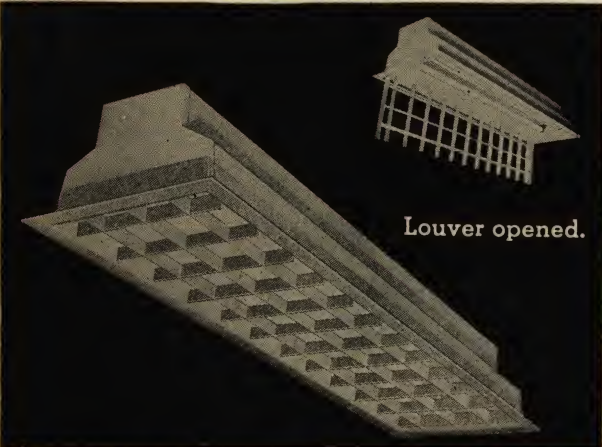
**Jefferson Model**



Has curved Skytex Satinol glass panels. Longitudinal baffles provide added shielding.

No.	Each	Lamps No. and Watts	Length Inches	Width Inches	Depth Inches	Shipping Weight Pounds
A-1240	\$44.43	2-40	48 $\frac{1}{8}$	10 $\frac{1}{16}$	5 $\frac{1}{16}$	38
A-1340	59.20	3-40	48 $\frac{1}{8}$	10 $\frac{1}{16}$	5 $\frac{1}{16}$	42
A-1440	69.50	4-40	48 $\frac{1}{8}$	14	5 $\frac{1}{16}$	51

**Recessed Tulamp**



Has housing with removable V-trough section containing knockouts to accommodate lamp-holders, starter sockets, and starting switches. V-trough section telescopes into the inverted housing and is held by clips. Exposed face of trough serves as part of reflector. Egg-crate louver, mounted flush, is designed to shield lamp and eliminate glare. Exposed metal trim and louver finished in white enamel.

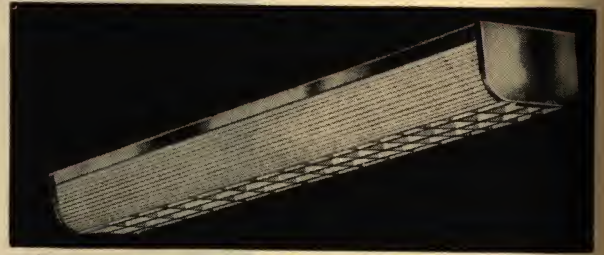
Wired complete, less starters. Plaster frames available.

No.	Each	Lamps No. and Watts	Overall Length Inches	Overall Width Inches	Ceiling Opening Inches	Depth Inches	Shipping Weight Pounds
RF-236-E	\$52.13	2-30	38	10 $\frac{3}{4}$	39 $\frac{1}{2}$ x9	6	20
RF-248-E	55.55	2-40	50	10 $\frac{3}{4}$	48 $\frac{1}{2}$ x9	6	28

All fluorescent units are furnished for operation on 110-125 volt, 60 cycle current, or 220-250 volt, 60 cycle; also available in 50 cycle at additional cost.

May also be furnished with instant-start ballast at extra cost. No lamps provided.

**Tyler Model**



Combines sound light engineering with functional design. Side panels are curved Skytex glass in Satinol finish. Bottom is egg-crate louver, hinged for easy maintenance.

No.	Each	Lamps No. and Watts	Length Inches	Width Inches	Depth Inches	Shipping Weight Pounds
A-7240	\$50.68	2-40	48 $\frac{1}{8}$	10 $\frac{1}{16}$	5 $\frac{1}{16}$	39
A-7340	65.45	3-40	48 $\frac{1}{8}$	10 $\frac{1}{16}$	5 $\frac{1}{16}$	43
A-7440	75.75	4-40	48 $\frac{1}{8}$	14	5 $\frac{1}{16}$	52

**Van Buren Model**

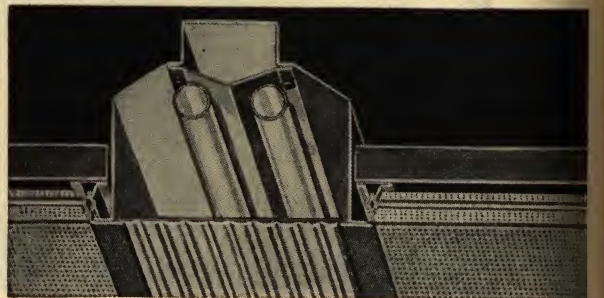


Has contrasting side panels of Skytex Satinol glass and Skytex clear glass bottom panels.

Metal T-bar gives center support for bottom glass panels.

No.	Each	Lamps No. and Watts	Length Inches	Width Inches	Depth Inches	Shipping Weight Pounds
A-2240	\$41.58	2-40	48 $\frac{1}{8}$	15 $\frac{7}{8}$	7 $\frac{3}{4}$	62
A-2340	52.68	3-40	48 $\frac{1}{8}$	15 $\frac{7}{8}$	7 $\frac{3}{4}$	66
A-2440	55.82	4-40	48 $\frac{1}{8}$	15 $\frac{7}{8}$	7 $\frac{3}{4}$	74

**AF Series Fluorescent Troffers**



Made to accommodate both a single row of 40-watt and two parallel rows of 40-watt fluorescent lamps.

Each troffer contains a removable inner section of wiring channel cover.

Flutex glass bottom panel conceals lamps, diffuses light, and reduces surface brightness. Glass rests in troffer frame and is easily removed by tilting.

Features a special snap-on frame designed for installation with acoustical ceiling sections of clip T-bar construction.

Finished in heat-resisting white enamel.

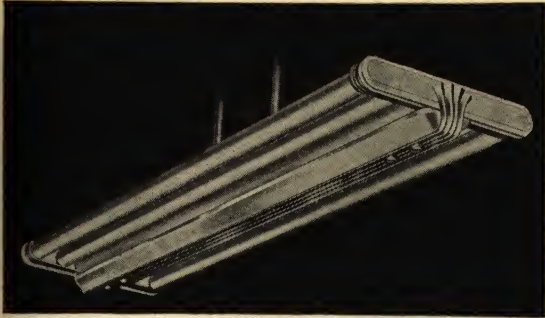
Both single and double row lamp series come in standard 4-foot lengths or any specified length: 12 inches wide, 8 $\frac{3}{4}$  inches deep.

PF Series are available for mounting in plaster, wood, or acoustical ceilings. Prices on request.



**Smithcraft Standard Lighting Fixtures**

For Four 40-Watt Fluorescent Lamps  
110-125 Volts and 220-250 Volts, 60 Cycles, A.C.  
Approved by Underwriters' Laboratories, Inc.



Designed for single unit or continuous runs using four fluorescent lamps.

Has an 85 per cent reflectivity.

Can be mounted directly on the outlet box without intervening space.

Side reflectors are parabolic, giving maximum down-lighting.

Ornamental socket shields also serve as lamp guards.

Completely wired with E.T.L. approved high power factor ballasts (Tulamp type), lamp sockets, and FS4 starters. FS40 No-blink starters are available at additional cost.

Furnished with all necessary fittings for continuous run installation at no extra charge.

Canopy (No. SS105) and two 30-inch stems, with non-turn stem lock, are available at extra cost.

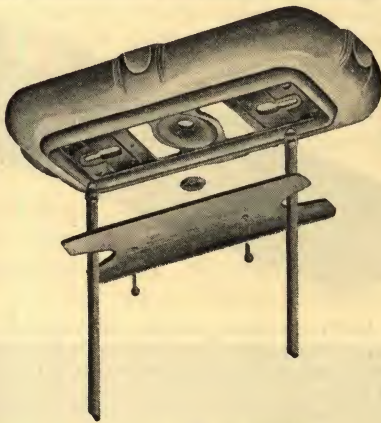
Finished in white baked enamel and aluminum.

Packed 1 to a carton.

No.	Each	No. of Lamps	Watts	DIMENSIONS, INCHES			Ship. Wt. Lb.
				Length	Width	Depth	
S-4	\$42.65	4	40	49	14	3 1/4	25

If lightning-start ballasts are desired, prefix Q to number when ordering and add 3 pounds to weight.

Price does not include lamps.

**Smithcraft Minute-Man Canopies**

For hanging commercial lighting fixtures.

Eliminates fixture strap and provides greater safety and quicker installation of lighting fixtures.

Adapted for concealed or surface wired outlets.

**Method of Installation**

1. Place the canopy over outlet box stud and tighten nut which locks canopy permanently into position.

2. Take Smithcraft unit with non-turn stems and simply check into the keyholes. Then move stem to narrow end of slot. Fixture is now up and locked into place.

3. Make wiring connections to outlet in the customary manner and finish off by applying the decorative cover plate with the two screws.

No. SS105, Canopy and Two 30-Inch Stems... each \$4.10

**Smithcraft Dawn Lighting Fixtures**

For Four 40-Watt Fluorescent Lamps

110-125 Volts and 220-250 Volts, 60 Cycles, A.C.

Approved by Underwriters' Laboratories, Inc.



Designed for single unit or continuous runs using four fluorescent lamps.

Reflector of V-type design gives 80 per cent downlight.

Louver is hinged in two sections, with 32 openings per section, and is easily removable.

Completely wired with E.T.L. approved high power factor ballasts (Tulamp type), lamp sockets, and FS4 starters. FS40 No-blink starters are available at additional cost.

Furnished with all necessary fittings for continuous run installation at no extra charge.

Canopy (No. SS105), and two 30-inch stems, with non-turn stem lock, are available at extra cost.

Finished in white baked enamel and aluminum.

Packed 1 to a carton.

No.	Each	No. of Lamps	Watts	DIMENSIONS, INCHES			Ship. Wt. Lb.
				Length	Width	Depth	
A-4	\$70.65	4	40	49 1/2	17 3/4	3 1/2	48

If lightning-start ballasts are desired, prefix Q to number when ordering and add 3 pounds to weight.

Price does not include lamps.

**Smithcraft Vision Lighting Fixtures**

For Two and Four 40-Watt Fluorescent Lamps

110-125 Volts and 220-250 Volts, 60 Cycles, A.C.

Approved by Underwriters' Laboratories, Inc.



Designed for single unit or continuous runs using two or four fluorescent lamps.

Diffused ribbed glass removes all glare.

A special metal T section between the glass panels acts as a lamp baffle and assures perfect alignment for continuous mounting.

Completely wired with E.T.L. approved high power factor ballasts (Tulamp type), lamp sockets, and FS4 starters. FS40 No-blink starters are available at additional cost.

Furnished with all necessary fittings for continuous run installation at no extra charge.

Canopy (No. SS105) and two 30-inch stems, with non-turn stem lock, are available at extra cost.

Finished in white baked enamel and aluminum.

Packed 1 to a carton.

No.	Each	No. of Lamps	Watts	DIMENSIONS, INCHES			Ship. Wt. Lb.
				Length	Width	Depth	
V-2	\$38.65	2	40	48 1/4	14	8	48
V-4	\$66.65	4	40	48 1/4	14	8	58

If lightning-start ballasts are desired, prefix Q to number when ordering and add 3 pounds to weight.

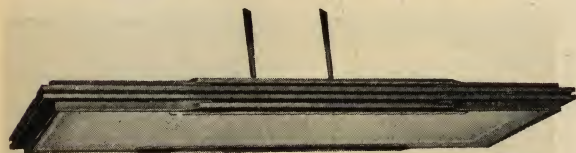
Price does not include lamps.



**Smithcraft Horizon Lighting Fixtures****For Four 40-Watt Fluorescent Lamps**

110-125 Volts and 220-250 Volts, 60 Cycles, A.C.

Approved by Underwriters' Laboratories, Inc.



Frame is made of natural wood, finely lacquered and waxed to blend softly with the smart shop or wood-panelled office.

A sturdy steel top covers the fixture and provides a wiring channel and holder for pendant mounting.

Completely wired with E.T.L. approved high power factor ballasts (Tulamp type), lamp sockets, and FS4 starters. FS40 No-blink starters are available at additional cost.

Furnished with all necessary fittings for continuous run installation at no extra charge.

**No. HG-4.** Has crystal glass panel, sandblasted.

**No. HE-4.** Has steel egg-crate louver in one section with 279 openings.

Canopy (No. SS105) and two 30-inch stems, with non-turn stem lock, are available at extra cost.

Available with a closed top for complete downlighting or with two bands of perforated metal which provide 85 per cent downlighting with a spill of 15 per cent.

Wood finish: natural lacquered. Steel finish: white baked enamel. Packed 1 to a carton.

No.	Each	No. of Lamps	Watts	DIMENSIONS, INCHES			Ship. Wt. Lb.
				Length	Width	Depth	
HG-4	\$99.45	4	40	52 $\frac{1}{4}$	17 $\frac{1}{4}$	2 $\frac{3}{4}$	50
HE-4	99.45	4	40	52 $\frac{1}{4}$	17 $\frac{1}{4}$	2 $\frac{3}{4}$	50

Price does not include lamps.

**Smithcraft Peerless Lighting Fixtures****For Two and Four 40-Watt Fluorescent Lamps**

110-125 Volts and 220-250 Volts, 60 Cycles, A.C.



A highly efficient open-type fixture that is designed for single unit or continuous runs using two or four fluorescent lamps.

Aluminum scroll ends provide a decorative effect and conceal the lamp holders. Also serve to conceal joining points on continuous run installation.

Completely wired with E.T.L. approved high power factor ballasts (Tulamp type), lamp sockets, and FS4 starters. FS40 No-blink starters are available at additional cost.

Furnished with all necessary fittings for continuous run installation at no extra charge.

Canopy (No. SS105) and two 30-inch stems, with non-turn stem lock, are available at extra cost.

Finished in white baked enamel and aluminum.

Packed 1 to a carton.

No.	Each	No. of Lamps	Watts	DIMENSIONS, INCHES			Ship. Wt. Lb.
				Length	Width	Depth	
T-2	\$27.37	2	40	50	12 $\frac{3}{8}$	6	27
T-4	43.55	4	40	50	12 $\frac{3}{8}$	6	35

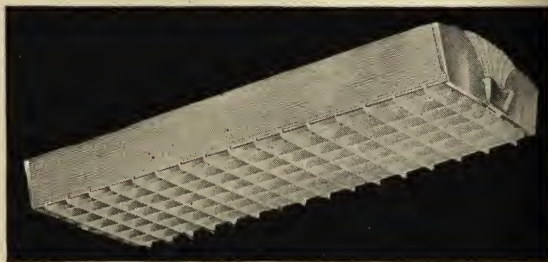
If lightning-start ballasts are desired, prefix Q to number when ordering and add 3 pounds to weight.

Price does not include lamps.

**Smithcraft Skylite Lighting Fixtures****For Four 40-Watt Fluorescent Lamps**

110-125 Volts and 220-250 Volts, 60 Cycles, A.C.

Approved by Underwriters' Laboratories, Inc.



Used in schools, offices, stores, institutions, etc.

Designed for single unit or continuous runs using four fluorescent lamps.

Side panels are of diffused glass.

Steel louver, 1 $\frac{1}{8}$ -inch deep, (136 openings) is hinged and is held in place by thumb screws.

Completely wired with E.T.L. approved high power factor ballasts (Tulamp type), lamp sockets, and FS4 starters. FS40 No-blink starters are available at additional cost.

Furnished with all necessary fittings for continuous run installation at no extra charge.

Canopy (No. SS105) and two 30-inch stems, with non-turn stem lock, are available at extra cost.

Slip-on reflectors used to obtain 65 per cent downlight are available at extra cost.

Finished in baked white enamel and aluminum.

Packed 1 to a carton.

No.	Each	No. of Lamps	Watts	DIMENSIONS, INCHES			Ship. Wt. Lb.
				Length	Width	Depth	
YE-4	\$60.55	4	40	49	17	6 $\frac{1}{2}$	50

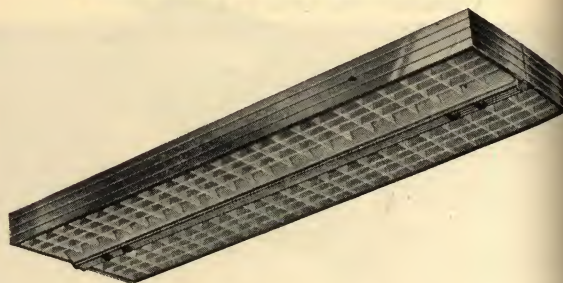
If lightning-start ballasts are desired, prefix Q to number when ordering and add 3 pounds to weight.

Price does not include lamps.

**Smithcraft Louverlite Lighting Fixtures****For Four 40-Watt Fluorescent Lamps**

110-125 Volts and 220-250 Volts, 60 Cycles, A.C.

Approved by Underwriters' Laboratories, Inc.



Used in drafting rooms, schools, offices, and, in general, wherever even, full, glare-free lighting is desired.

Designed for single unit or continuous runs using four fluorescent lamps.

Steel louver is hinged in two sections, 125 openings per section, and is held in place by spring catch.

Completely wired with E.T.L. approved high power factor ballasts (Tulamp type), lamp sockets, and FS4 starters. FS40 No-blink starters are available at additional cost.

Furnished with all necessary fittings for continuous run installation at no extra charge.

Canopy (No. SS105) and two 30-inch stems, with non-turn stem lock, are available at extra cost.

Finished in white baked enamel and aluminum.

Packed 1 to a carton.

No.	Each	No. of Lamps	Watts	DIMENSIONS, INCHES			Ship. Wt. Lb.
				Length	Width	Depth	
O-4	\$75.09	4	40	51	16	2 $\frac{7}{8}$	43

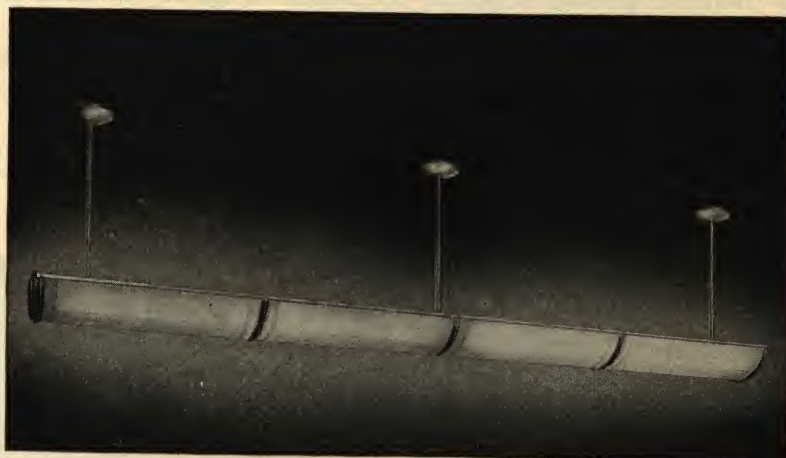
If lightning-start ballasts are desired, prefix Q to number when ordering and add 3 pounds to weight.

Price does not include lamps.



## Wakefield Star Luminous Indirect Luminaires

For Two 40-Watt Fluorescent Lamps



With No. 14, Single Stems

Modern artificial lighting strives for two objectives. First, an even distribution of light intensity all over the room, and, second, the elimination of spheres of brightness contrasted with intervening dark areas.

The newest approach to the twofold objective of artificial lighting efficiency is the Star, a luminous indirect lighting unit which utilizes a molded, translucent Plaskon reflector of such density that the lighted luminaire is of approximately the same brightness as the illuminated ceiling.

When Star units are used in continuous runs, spaced in accordance with Wakefield engineering specifications, an evenly lighted ceiling is achieved which provides the sky-like effect of evenly distributed light, with no deep shadows or contrasts and without distracting glare from the light source.

Each 4-foot Star section utilizes two 40-watt fluorescent lamps which are accessible from the top of the reflector.

The molded reflectors and end caps are made of Plaskon, a molding compound which has been in continued use by The F. W. Wakefield Brass Company for over ten years. These Plaskon parts are

light in weight, non-electrostatic, non-shatterable, uniform in appearance, and will not support combustion.

All visible metal parts are finished in satin aluminum.

The reflectors are held in place by illuminated satin aluminum supporting bands, and are easily slid in and out of place for maintenance purposes without dis-assembly of the unit.

The Star has been under development for over two years and incorporates all advances in contemporary engineering, lighting performance, and ease of maintenance.

The Star achieves a lighting efficiency high above the standard.

## Single Unit—Twin Stem Suspension

Small rooms and corridors can be adequately illuminated with a single unit.

The two stem unit is 4-foot in length and is identical with the 4-foot sections used in continuous runs except that the single unit installation is equipped with twin stem suspension.

The appearance of the single unit matches those units which are used in continuous runs in every other detail.

## Body and Reflectors Only

No.	Each	Suspension Inches	Number of Lamps	Lamp Watts	Std. Pkg.	Wt. Lb.	Ship. Wt. Lb.
ST-248-B	\$42.00	4	2	40	1	14	17
<b>Double Stem and Canopy Assembly</b>							
12	\$5.74	20	..	..	1	2	3
<b>Single Stem and Canopy Assembly</b>							
14	\$2.50	20	..	..	1	1	2
<b>End of Run Assembly (End Caps, Clamps, Etc.)</b>							
15	\$10.24	..	..	..	1	1	2

No. ST-248  
With No. 12, Twin Stems



## Wakefield Grenadier Diffused Direct Lighting Fixtures

### For Two 40-Watt Fluorescent Lamps

The Grenadier provides a type of direct-indirect lighting which is generally recognized to be highly efficient.

Diffusion is secured and the surface brightness of the lamp is masked with the use of a well designed louver. Further efficiency is provided by the design of the reflector.

All reflecting surfaces are turned downward so that they catch a minimum of dust. This feature results in lower maintenance cost because the unit requires less cleaning.

### Suspension Type



No. PG-2488



No. 2PG-2488

Two Grenadier models include the 4-foot suspension type and the 4-foot ceiling type. Both types are available for installation in continuous runs as they may be interconnected with standard parts from the factory or from stock.

The Grenadier is a well-shielded unit utilizing two 40-watt fluorescent lamps in each 4-foot section. All metal parts are finished in gray enamel. Side panels are translucent plastic which take on a warm ivory color when lamps are lighted.

### Ceiling Mounting



No. PG-2483



No. 2PG-2483

For rooms with ceilings of low or medium heights, ceiling type Grenadier is recommended. Canopies are finished in gray enamel to match the other metal parts.

Ceiling types, for continuous installation, are also available on order.

The single unit suspension type Grenadier is designed for installation in small rooms or corridors.

All Grenadiers have open top reflectors for lighting the ceiling area, and inverted reflectors for producing exceedingly high level illumination on working surfaces below.

Lamps are easy to replace as they are accessible through the top of the reflector, without removing the louver.

No.	Each	Overall Suspension Inches	Number of Lamps per Section	Lamp Watts
PG-2488	\$38.12	24	2	40
2PG-2488	79.62	24	2	40
PG-2483	37.86	6 $\frac{3}{4}$	2	40
2PG-2483	77.84	6 $\frac{3}{4}$	2	40

Description	Standard Package	Weight Pounds	Shipping Weight Pounds
Suspension Type	1	16	19
Suspension Type	1	35	40
Ceiling Type	1	16	19
Ceiling Type	1	35	40



## Wakefield Beacon Model Diffused Direct Lighting Fixtures

### For Four 40-Watt Fluorescent Lamps

The proper utilization of fluorescent lamps provides for an excellent distribution of high level lighting. Great care must be given to the design of any fluorescent fixture in order that the lamps be sufficiently shielded to prevent eye fatigue as a result of surface brightness. On the other hand, the shielding must be so arranged that it does not seriously reduce the lighting efficiency.

### Suspension Type



No. B-448-W



No. 2B-448-W

The Beacon is made in two models. These include the suspension type and the ceiling type. Both are available for installation in continuous runs as they may be interconnected as ordered from factory or stock.

The Beacon features pleasing appearance and a

high light distributing efficiency. Attractive side panels of etched, ribbed glass and a louver of unusual beauty combine to create a pleasing harmony.

Four 40-watt lamps are adequately shielded to provide a soft, even distribution of light.

### Ceiling Mounting



No. B-4483-W



No. 2-B-4483-W

Ceiling-mounted units are recommended for rooms with low or medium height ceilings.

Ceiling units can be utilized individually or in long continuous runs.

When units are to be interconnected, knockouts may be removed from end caps for wireway. Before deciding which type of Beacon to order for any installation, consult our lighting specialist in your territory.

The four-foot suspension type is excellent for lighting rooms of average size and blends with all tastefully decorated interiors. Twist-type sockets are provided so that lamps cannot become dislodged.

Wireway cover is held in place by four screws for easy accessibility.

Lamps can be replaced from top or bottom without removing glass panels.

Louver section may be removed when cleaning of unit becomes necessary.

No.	Each	Overall Suspension Inches	Number of Lamps per Section	Lamp Watts	Description	Standard Package	Weight Pounds	Shipping Weight Pounds
B-4483-W	\$60.24	61½	4	40	Ceiling Type	1	33	39
2B-4483-W	120.48	61½	4	40	Ceiling Type	1	66	78
B-448-W	63.00	25	4	40	Suspension Type	1	36	42½
2B-448-W	126.00	25	4	40	Suspension Type	1	72	85

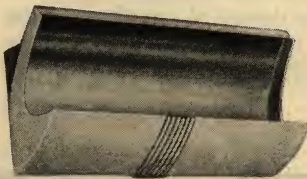


**Rad-i-Air Germicidal Equipment**

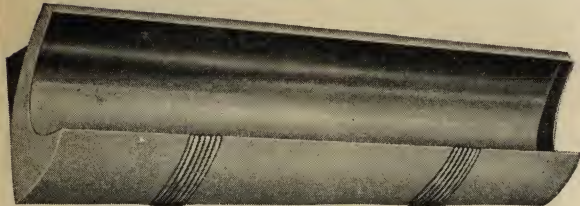
110-125 Volts, 60 Cycle, A.C.

**U.R.C. Model Nos. 921-15 and 921-30—For Personal Protection**

Approved by Underwriters' Laboratories



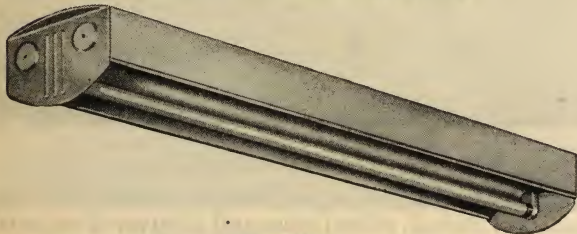
No. 921-15



No. 921-30

**All-Purpose Model Nos. 981-15 and 981-30—For Animal and Product Protection**

Approved by Underwriters' Laboratories



No. 981-30

Exposed type to permit wide use of the maximum intensity of the germicidal lamp. Made of heavy gage metal with attractive end plates and Alzak aluminum reflectors.

Has Electrical Testing Laboratories approved ballast, starter, and sockets.

May be installed for either direct or indirect use.

Mounted horizontally or vertically; flush to ceiling or suspended by chains or stems.

Available in low or high power factor.

**Bare Lamp Model No. 931-15—For Protection of Meat and Meat Products**

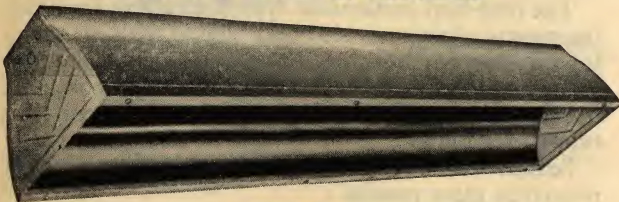
Used in the walk-in meat box, meat storage locker plants, and similar locations to provide unobstructed ultraviolet irradiation in all directions for suppressing bacterial propagation and meat contamination.

Made of heavy gage metal. Has Electrical Testing Laboratories approved ballast, starter, and sockets.

Available in low and high power factor.

**Conveyor Line Model Nos. 961-15 and 961-30—For Direct or Indirect Product Protection**

Approved by Underwriters' Laboratories



No. 961-30

Designed to combine maximum intensity ultraviolet irradiation with louver control for direct or indirect activation. Made of heavy gage metal with attractive end plates, and Alzak aluminum reflectors. Has Electrical Testing Laboratories approved ballast, starter, and sockets.

All models available in other standard voltage, 60-cycle, at no additional cost. Specify voltage on order. Also available for 50-cycle operation, add \$2.20 to prices. Write for information on units operating on higher voltages or direct current.

Designed by the Utilities Research Commission to sanitize the air in schools, stores, offices, hospitals, factories, and any other place where humans congregate indoors.

Made of heavy gage steel with bright chrome trim and Alzak aluminum reflectors.

Mounted horizontally flush to wall. May also be hung by stem suspension.

Has high power factor.

Furnished with 10-foot cord and plug. Knockouts are provided for mounting direct to electric outlet.

Finished in baked cream enamel.

No. ....	921-15	921-30
Each, less Lamps. ....	\$18.00	\$27.00
Dimensions: Length. .... inches	18 <sup>3</sup> / <sub>16</sub>	36 <sup>3</sup> / <sub>16</sub>
Width. .... inches	5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>
Height. .... inches	9 <sup>1</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>16</sub>
Watts. ....	15	30
Shipping Weight. .... pounds	11 <sup>1</sup> / <sub>4</sub>	18 <sup>1</sup> / <sub>4</sub>

**Accessories**

No. 312, Canopy and Stem Set. .... each \$9.00

Furnished with knockouts on end plates for end-to-end continuous row mounting. Finished in baked white enamel.

Adjustable baffle sets, at extra cost, may be added to deflect or shield ultraviolet rays. Finished in dull black baked enamel.

	Low P.F.	High P.F.	Low P.F.	High P.F.
No. ....	981-15	981-15	981-30	981-30
Each, less Lamps. ....	\$13.50	\$16.50	\$19.00	\$22.00
Dimensions: Length. .... in.	19 <sup>1</sup> / <sub>16</sub>	19 <sup>1</sup> / <sub>16</sub>	37 <sup>1</sup> / <sub>16</sub>	37 <sup>1</sup> / <sub>16</sub>
Width. .... in.	5 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>
Height. .... in.	3 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>
Watts. ....	15	15	30	30
Shipping Weight. .... pounds	6	7 <sup>1</sup> / <sub>2</sub>	12	13 <sup>1</sup> / <sub>2</sub>

**Accessories**

No. AB-15, Baffle Set for No. 981-15, Shipping Weight, 1<sup>1</sup>/<sub>2</sub> Pounds. .... each \$1.50

No. AB-30, Baffle Set for No. 981-30, Shipping Weight, 2<sup>3</sup>/<sub>4</sub> Pounds. .... each 2.75

No. CP-10, 10-Foot, 2-Conductor Cord and Plug. .... each .90

No. 302, Two 8-Foot Tenso Chains. .... per pair .75

No. 312, Canopy and Stem Set. .... per set .90

Furnished with 10-foot 2-conductor cord and plug.

Finished in baked white enamel. May be suspended vertically by built-in hook or mounted horizontally.

	Low P.F.	High P.F.
No. ....	931-15	931-15
Each, less Lamps. ....	\$10.00	\$13.00
Dimensions: Length. .... inches	29 <sup>7</sup> / <sub>8</sub>	29 <sup>7</sup> / <sub>8</sub>
Width. .... inches	3 <sup>3</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>
Height. .... inches	2 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>
Watts. ....	15	15
Shipping Weight. .... pounds	5 <sup>1</sup> / <sub>2</sub>	7

Mounted singly or in continuous rows, flush or suspended by chains or stems. Available in low or high power factor.

Finished in baked white enamel.

Louvers at additional cost. Black baked enamel finish.

	Low P.F.	High P.F.	Low P.F.	High P.F.
No. ....	961-15	961-15	961-30	961-30
Each, less Lamps. ....	\$17.20	\$20.20	\$27.00	\$30.00
Dimensions: Length. .... in.	19 <sup>5</sup> / <sub>8</sub>	19 <sup>5</sup> / <sub>8</sub>	37 <sup>5</sup> / <sub>8</sub>	37 <sup>5</sup> / <sub>8</sub>
Width. .... in.	8 <sup>7</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>
Height. .... in.	5 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>4</sub>
Watts. ....	15	15	30	30
Shipping Weight. .... pounds	9 <sup>1</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>4</sub>	16	17 <sup>1</sup> / <sub>2</sub>

**Accessories**

No. AL-15, Louver for No. 961-15. .... each \$5.50

No. AL-30, Louver for No. 961-30. .... each 10.00

No. CP-10, 10-Foot Cord and Plug. .... each .90



## Benjamin RLM Lite-Line 40 Continuous Line Lighting Systems

For Two and Three Fluorescent Lamps

Sliding Hanger Type

With Closed-End and Open-End Reflector

110-125 Volts, 60 Cycles

220-250 Volts, 60 Cycles



Features the double reflector channel unit which is made of heavy gage steel and is joined end to end to form a continuous line by the use of a rigid, steel coupling.

The single reflector steel channel is usually used to fill out at the ends of lines.

Ends of channel are closed by a steel cap.

A complete line of sliding hangers is available to meet every mounting condition.

Convenient  $\frac{1}{2}$  and  $\frac{3}{4}$ -inch knockouts are also furnished in the top of the channel.

Springlox lamp holders hold the lamps securely and speed lamping and relamping.

Reflector is attached or removed by a quarter turn of two, hand-operated, adjustable Lok-Latch reflector fasteners. Channel is wired and has 6-inch leads.

Reflector is porcelain enameled steel with exterior finished gray and interior finished white.

### Type E Wired Channel Sections for Two-Lamp Open-End and Closed-End $13\frac{1}{8}$ -Inch Reflectors

#### Double Reflector Channels

##### 104 $\frac{1}{2}$ -Inch Length

Volts	No.	Each	No. of Lamps	Twin Ballasts
110-125	18854	\$36.00	4	2-2 Lamp
220-250	18856	36.00	4	2-2 Lamp
*110-125	18954	50.00	4	2-2 Lamp

#### Single Reflector Channels

##### 50 $\frac{1}{2}$ -Inch Length

No.	Each	No. of Lamps	Twin Ballasts	Power Factor Per Cent
18454	\$17.50	2	1-2 Lamp	95
18456	17.50	2	1-2 Lamp	95
18554	24.50	2	1-2 Lamp	95

### Type E Wired Channel Sections for Three-Lamp Open-End and Closed-End $13\frac{1}{8}$ -Inch Reflectors

Volts	No.	Each	No. of Lamps	Twin Ballasts	Power Factor Per Cent
110-125	18857	\$52.00	6	3-2 Lamp	95
220-250	18859	52.00	6	3-2 Lamp	95

### Type A Wired Channel Sections for Two-Lamp Open-End (Narrow) $11\frac{1}{2}$ -Inch Width Reflectors

#### Double Reflector Channels

##### 101 $\frac{1}{2}$ -Inch Length

Volts	No.	Each	No. of Lamps	Twin Ballasts
110-125	18154	\$35.40	4	2-2 Lamp
220-250	18156	35.40	4	2-2 Lamp
*110-125	18254	49.40	4	2-2 Lamp

#### Single Reflector Channels

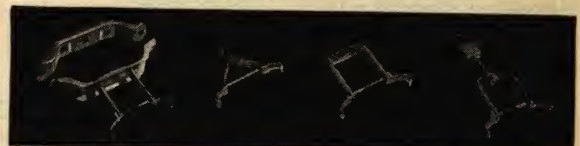
##### 50 $\frac{1}{2}$ -Inch Length

No.	Each	No. of Lamps	Twin Ballasts	Power Factor Per Cent
18354	\$17.30	2	1-2 Lamp	95
18356	17.30	2	1-2 Lamp	95
18654	24.30	2	1-2 Lamp	95

\*Instant-starting type.

Equipped with standard ballasts and FS-4 starters. Non-Blinking starters are available, when specified, at additional cost.

### RLM Reflectors, Channel and Suspension Fittings



No. 18426 Coupling      No. 18425 End Plate      No. 8453 Open-End Reflector

No. 18438 For  $\frac{3}{8}$ -Inch Rods      No. 18450 For Chain      No. 18440 For  $\frac{1}{2}$ -Inch Cond.      No. 18472 For Cable

No.	Description	Each
8462	Type E Closed-End, Two and Three-Lamp, $13\frac{1}{8}$ Inches Wide	\$11.00
8453	Type E Open-End, Two and Three-Lamp, $13\frac{1}{8}$ Inches Wide	7.40
8452	Type A Open-End, Two-Lamp, $11\frac{1}{2}$ Inches Wide	7.00
8463	*Type A Closed-End and Shield, $13\frac{1}{8}$ Inches Wide	13.40
8446	*Type A Shield for Closed-End, $13\frac{1}{8}$ Inches Wide	2.40
<b>Channel Fittings</b>		
18425	End Cap for All Channels (Types A and E)	\$4.40
18426	Type E $3\frac{5}{8}$ -Inch Coupling for $13\frac{1}{8}$ -Inch Wide Reflector	1.00
18436	Type A $5\frac{7}{8}$ -Inch Coupling for $11\frac{1}{2}$ -Inch Wide Reflector	.80
<b>Suspension Fittings</b>		
18438	Sliding Hanger Assembly for $\frac{3}{8}$ -Inch Diameter Twin Supporting Rods for Both Types A and E Systems	\$1.40
18440	Sliding Hanger Assembly for $\frac{1}{2}$ -Inch Conduit Suspension (Ceiling Strap No. 18441 not Included)	.60
18443	Sliding Hanger Assembly for $\frac{1}{2}$ -Inch Conduit Suspension; Ceiling Strap No. 18441 Included	1.00
18441	Offset Ceiling Strap with Center Hole for $\frac{1}{2}$ -Inch Conduit	.40
18450	Sliding Hanger Assembly for Chain Support	.50
18472	Sliding Hanger Assembly for Messenger Cable (Complete)	1.00
18471	Messenger Cable Hook Only; Used with No. 18472. (Can Also be Attached Directly to Knockouts in Channel)	.40
18430	Sliding Hanger Assembly with Hole for $\frac{3}{8}$ -Inch Rod (Ceiling Strap No. 18431 not Included)	.60
18439	Sliding Hanger Assembly for $\frac{3}{8}$ -Inch Single Rod or Ceiling Suspension with Ceiling Strap No. 18431	1.00
18431	Offset Ceiling Strap with Center Hole for $\frac{3}{8}$ -Inch Rod Support or $\frac{1}{16}$ -Inch Bolt	.40
18432	Flat Ceiling Strap with Center Hole for $\frac{3}{8}$ -Inch Rod Support or $\frac{1}{16}$ -Inch Bolt	.40

\*Two-lamp only.

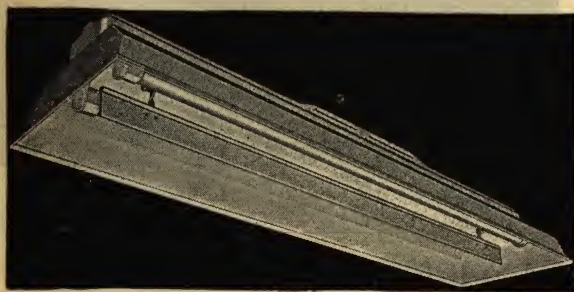
†Can be used independently as an additional means of

mounting where a non-sliding type suspension meets requirements.



**Benjamin RLM Shield-Flo 40 Lighting Units****For Two 40-Watt Fluorescent Lamps**

110-125 Volts, \*60 Cycles, A.C.  
220-250 Volts, \*60 Cycles, A.C.



For industrial and commercial installations.

Identical to Stream-Flo 40 unit except that it has a longitudinal shield between the lamps which provides the same shielding angle on the far lamp as on the near lamp. Has a total overall shielding angle of 27°. Shield is removable from reflector.

Housing is made of steel, contains control equipment, and is provided with brackets for chain suspension. Also provided with ample 1/2 and 3/4-inch knockouts for conduit suspension.

Reflector is closed-end type made of enameling iron finished in porcelain enameled steel. Exterior finish is gray. Interior surfaces are white with a reflection factor of 79 per cent or more. Shield is made of white porcelain enamel steel.

Springlox safety lamp holder speeds lamping and relamping. Simply push one end of lamp into lamp holder and let the spring pressure push the other end into the facing lamp holder. Pressure of the lifetime spring securely locks lamp into position.

A quarter turn of the Lok-Latch reflector fastener quickly attaches or detaches reflector from housing.

Lamp holders are spaced on 5-inch centers.

**With Conventional Ballasts and Standard Starters**

†Volts	Wired with 6-Inch Leads		Wired with 6-Foot Cord and Plug		Wired with 3-Wire	
	No.	Each	No.	Each	No.	Each
110-125	41662	\$31.70	41662-C	\$33.20	41662-P	\$33.70
220-250	41682	31.70	.....	.....	41682-P	33.70

**With Conventional Ballasts and Non-Blinking Starters**

110-125	41662-W	\$32.90	41662-CW	\$34.40	41662-PW	\$34.90
220-250	41682-W	32.90	.....	.....	41682-PW	34.90

**With Instant-Starting Ballasts—No Starters Needed**

110-125	41762	\$38.70	41762-C	\$40.20	41762-P	\$40.70
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**Shields Only**

No. 8445, †Width, 13 1/8 Inches, Closed-End Refl..ea. \$2.40  
No. 8446, Width 11 1/2 Inches, Open-End Reflector.ea. 2.40

\*50-cycle ballasts available when specified. Prices upon application.

†Units available on special order with 199 to 216-volt conventional type ballast at 220 to 250-volt conventional type ballast prices. Units with 240 to 280-volt conventional type ballasts are also available with prices furnished upon application.

†Also fits twin-lamp, 13 1/8 inches width, open-end reflector, as supplied on Benjamin "Lite-Line 40" series.

**Benjamin Type II-G Sealed-Flo 48 Dust Tight Lighting Units****For Two and Three 40-Watt 48-Inch Fluorescent Lamps**

110-125 Volts, \*60 Cycles, A.C.  
220-250 Volts, \*60 Cycles, A.C.

Listed by Underwriter's Laboratories, Inc.

For Class II, Groups F and G and Classes III and IV Hazardous Locations



For locations requiring dust or vapor-tight lighting equipment.

The bottom of the one-piece housing is securely sealed by a gasketed, double strength, grade A, clear glass cover, mounted in a metal frame.

Frame is hinged to the housing on one side and is held in contact on the opposite side by five, easily operated clamps.

Housing is porcelain enamel steel, finished in light gray, with a removable porcelain enameled steel plate on the top of which lamp holders and ballast equipment are mounted for easy wiring.

The under side of the plate and sides of housing form the porcelain enameled steel reflector.

Furnished with two cast iron suspension flanges with conduit stops, spaced on 36-inch centers, tapped 1/2-inch standard; 3/4-inch if specified.

Lamps not included.

**For Two 40-Watt 48-Inch Fluorescent Lamps****Wired with 6-Inch Leads****With Conventional Ballasts and Standard Starters**

†Volts	No.	Each	Length Inches	Width Inches	Height Inches
110-125	49362-CL	\$66.00	52 5/8	13 3/8	7 7/8
220-250	49382-CL	66.00	52 5/8	13 3/8	7 7/8

**With Conventional Ballasts and Non-Blinking Starters**

110-125	49362-CLW	\$61.20	52 5/8	13 3/8	7 7/8
220-250	49382-CLW	61.20	52 5/8	13 3/8	7 7/8

**With Instant-Starting Ballasts—No Starters Needed**

110-125	49392-CL	\$67.00	52 5/8	13 3/8	7 7/8
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**For Three 40-Watt 48-Inch Fluorescent Lamps****Wired with 6-Inch Leads****With Conventional Ballasts and Standard Starters**

†Volts	No.	Each	Length Inches	Width Inches	Height Inches
110-125	49363-CL	\$69.00	52 5/8	13 3/8	7 7/8
220-250	49383-CL	68.00	52 5/8	13 3/8	7 7/8

**With Conventional Ballasts and Non-Blinking Starters**

110-125	49363-CLW	\$70.80	52 5/8	13 3/8	7 7/8
220-250	49383-CLW	69.80	52 5/8	13 3/8	7 7/8

\*Available with 50-cycle ballasts. Prices upon application.

†Furnished with 199-216-volt ballast at 220-250-volt prices upon order.

Available with heat and impact resisting tempered plate clear glass covers at \$20.90 additional. To order, drop CL suffix and substitute TP.



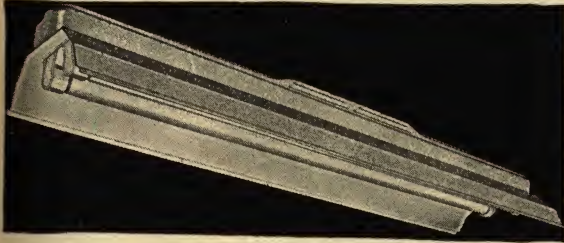
## Benjamin Twin-Flo 40 and Triple-Flo 40 Lighting Units

For Two and Three T-12, 40-Watt 48-Inch Fluorescent Lamps

110-125 Volts, \*60 Cycles, A.C.

220-250 Volts, \*60 Cycles, A.C.

Listed by Underwriters' Laboratories, Inc.



For general and local lighting of industrial and commercial locations.

Housing is made of steel with brackets for chain suspension and ample  $\frac{1}{2}$  and  $\frac{3}{4}$ -inch knockouts. Finished in gray enamel.

Reflector is open-end type made of enameling iron and finished in porcelain enameled steel. Exterior finish is gray; interior surfaces are white with a reflection factor of 79 per cent or more. Twin-lamp reflector is  $50\frac{3}{4}$  inches in length and  $11\frac{1}{2}$  inches in width. Triple-lamp reflector is  $53\frac{3}{4}$  inches in length and  $13\frac{1}{8}$  inches in width.

Springlox safety lamp holder speeds lamping and relamping. Simply push one end of lamp into lamp holder and let the spring pressure push the other end into the facing lamp holder. Pressure of the lifetime spring securely locks lamp into position.

A quarter turn of the Lok-Latch reflector fastener quickly attaches or detaches reflector from housing.

Twin-lamp unit has lamp holders spaced on  $3\frac{1}{2}$ -inch centers. Triple-lamp unit has the two outer lamps spaced on 5-inch centers.

Overall power factor of lamps and auxiliary equipment, 95 per cent.

Lamps are not included.

### Twin-Flo 40

For Two T-12, 40-Watt 48-Inch Fluorescent Lamps With Conventional Ballasts and Standard Starters

†Volts	Wired with 6-Inch Leads		Wired with 6-Foot Cord and Plug		Wired with 6-Foot Cord and Plug	
	No.	Each	No.	Each	No.	Each
110-125	40162	\$24.70	40162-C	\$26.20	40162-P	\$26.70
220-250	40182	24.70			40182-P	26.70

With Conventional Ballasts and Non-Blinking Starters

110-125	40162-W	\$25.90	40162-CW	\$27.40	40162-PW	\$27.90
220-250	40182-W	25.90			40182-PW	27.90

With Instant-Starting Ballasts—No Starters Needed

110-125	40262	\$31.70	40262-C	\$33.20	40262-P	\$33.70
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### Triple-Flo 40

For Three T-12, 40-Watt 48-Inch Fluorescent Lamps With Conventional Ballasts and Standard Starters

†Volts	Wired with 6-Inch Leads		Wired with 6-Foot Cord and Plug		Wired with 6-Foot Cord and Plug	
	No.	Each	No.	Each	No.	Each
110-125	40163	\$34.30	40163-C	\$35.80	40163-P	\$36.30
220-250	40183	33.30			40183-P	35.30

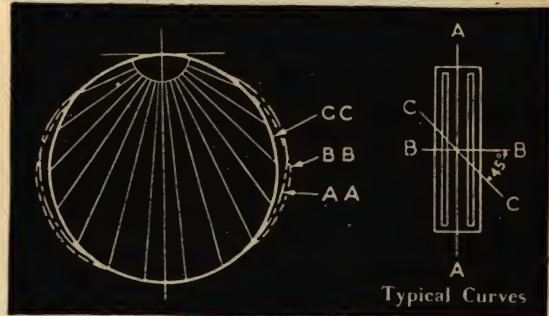
With Conventional Ballasts and Non-Blinking Starters

110-125	40163-W	\$36.10	40163-CW	\$37.60	40163-PW	\$38.10
220-250	40183-W	35.10			40183-PW	37.10

\*50-cycle ballast furnished when specified. Prices upon application.

†Units available on special order with 199 to 216-volt conventional type ballast at 220 to 250-volt conventional type prices. Units with 240 to 280-volt conventional type ballasts are also available with prices furnished upon application.

## Benjamin RLM Twin-Flo 40 and Triple-Flo 40 Fluorescent Lamp Units Lighting Data



Tables below show average illumination obtained with Twin-Flo and Triple-Flo Units, using 3500° white 40-watt, 48-inch, white fluorescent lamps; for daylight lamps, 1920 lumens, multiply values by .835. Values based on a minimum installation of 4 units and a maintenance factor of .75. Mounting heights are distance above floor; foot-candle values are on working plane, 30 inches above floor.

For Twin-Flo Units with Two White Fluorescent Lamps of 2300 Lumens Each

Approx. Spacing Feet	*Mounting Ht. Above Floor Ft.	Area per Unit Sq. Ft.	Room Conditions	ROOM PROPORTIONS —AVERAGE FOOT-CANDLES—		
				Favorable	Average	Unfavorable
7 x 7	7½ to 9½	49	Very Light	49-53	45-48	32-36
			Fairly Light	48-49	39-45	26-32
			Fairly Dark	46-48	35-39	†24-26
8 x 8	8 to 10½	64	Very Light	37-39	34-37	24-27
			Fairly Light	36-37	31-34	19.7-24
			Fairly Dark	35-36	27-31	†18.6-19.7
9 x 9	8½ to 11½	81	Very Light	30-32	26-30	19.0-22
			Fairly Light	28-30	24-26	15.3-19.0
			Fairly Dark	27-28	21-24	†14.5-15.3
10 x 10	9½ to 12½	100	Very Light	24-25	22-24	15.3-17.6
			Fairly Light	23-24	19.3-22	12.7-15.3
			Fairly Dark	23-23	17.2-19.3	†11.7-12.7
11 x 11	10 to 13½	121	Very Light	19.9-21	18.0-19.6	12.7-14.6
			Fairly Light	19.4-19.9	16.0-18.0	10.5-12.7
			Fairly Dark	18.5-19.4	14.2-16.0	†10.1-10.5
12 x 12	10½ to 14½	144	Very Light	16.8-17.7	15.1-16.5	10.9-12.6
			Fairly Light	16.2-16.8	13.4-15.1	9.6-10.9
			Fairly Dark	15.6-16.2	11.9-13.4	†8.4-9.6

For Triple-Flo Units with Three White Fluorescent Lamps of 2300 Lumens Each

7 x 7	7½ to 9½	49	Very Light	67-71	60-65	45-53
			Fairly Light	66-67	54-60	39-45
			Fairly Dark	62-66	48-54	†35-39
8 x 8	8 to 10½	64	Very Light	51-55	47-49	35-39
			Fairly Light	50-51	42-47	30-35
			Fairly Dark	48-50	37-42	†26-30
9 x 9	8½ to 11½	81	Very Light	41-43	37-39	27-32
			Fairly Light	39-41	33-37	24-27
			Fairly Dark	38-39	30-33	†21-24
10 x 10	9½ to 12½	100	Very Light	33-35	30-32	22-25
			Fairly Light	32-33	26-30	19.2-22
			Fairly Dark	31-32	24-26	†17.1-19.2
11 x 11	10 to 13½	121	Very Light	27-28	24-26	18.4-21
			Fairly Light	26-27	22-24	15.9-18.4
			Fairly Dark	25-26	19.5-22	†14.1-15.9
12 x 12	10½ to 14½	144	Very Light	23-24	21-22	15.4-17.7
			Fairly Light	22-23	18.4-21	13.4-15.4
			Fairly Dark	21-22	16.4-18.4	†11.8-13.4
13½ x 13½	11½ to 16	182	Very Light	18.1-19.2	16.3-17.4	12.0-14.0
			Fairly Light	17.6-18.1	14.6-16.3	10.5-12.0
			Fairly Dark	16.9-17.6	13.0-14.6	†9.4-10.5
15 x 15	12½ to 17½	225	Very Light	14.7-15.6	13.3-14.1	9.9-11.5
			Fairly Light	14.2-14.7	11.8-13.3	8.5-9.9
			Fairly Dark	13.6-14.2	10.5-11.8	†7.6-8.5

\*Minimum heights shown are for spacing ratio of  $1\frac{1}{2}$  to 1. The greater heights are for 1 to 1 spacing.

†Use Favorable for broad rooms where width is 4 times mounting height above floor. Use Average where room width is 2 times mounting height above floor. Use Unfavorable where width is equal to mounting height above floor.

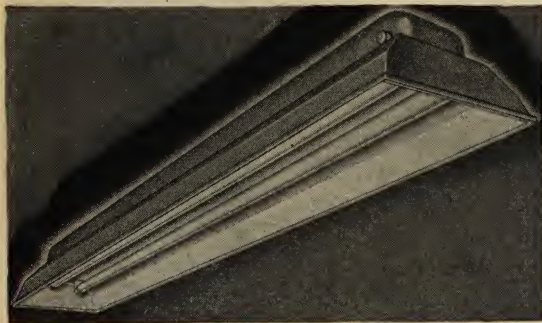
‡Impractical; recommended that interior room conditions be improved or provision made for more frequent maintenance.



### Benjamin RLM Stream-Flo 100 Lighting Units

#### For Two 60-Inch 100-Watt Fluorescent Lamps

110-125 Volts, \*60 Cycles, A.C.  
220-250 Volts, \*60 Cycles, A.C.  
Listed by Underwriters' Laboratories, Inc.



No. 60762

Provides high level of illumination for industrial and commercial locations and for all other locations requiring higher mounting and wider spacing.

Reflector is of the closed-end type, without apertures, and has shielding angle of 14°. Easily installed. Reflector is quickly detachable from the housing by removal of lamps and a quarter turn of two Lok-Latch fasteners.

Reflector is made of porcelain enameled steel and is finished light gray outside, white inside.

Housing is finished in gray enamel.

Furnished with two-lamp, 95-100 per cent power factor ballast. Chain brackets furnished for each end of housing.

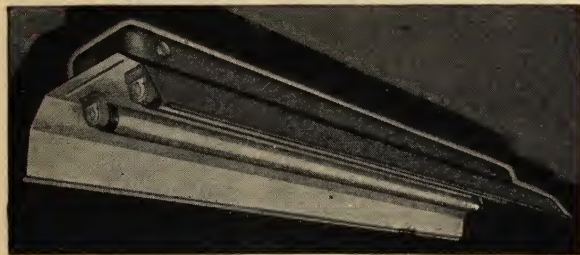
Rigid conduit suspension is possible by using any of six 1/2-inch conduit size knockouts (two on 53 1/2-inch, two on 36-inch, and two on 19 1/2-inch centers) provided in the housing. Those on 19 1/2-inch centers fit the Benjamin twin stem canopy. Dimensions: Length, 65 3/4 inches; width, 16 inches; height, 8 1/2 inches.

†Volts	Wired with 6-Inch Leads		Wired with 6-Foot Cord and Plug	
	No.	Each	No.	Each
110-125	60762	\$52.00	60762-C	\$53.50
220-250	60782	52.00	60762-P	\$54.00
			60782-P	54.00

### Benjamin RLM Twin-Flo 100 Lighting Units

#### For Two 60-Inch 100-Watt Fluorescent Lamps

110-125 Volts, \*60 Cycles, A.C.  
220-250 Volts, \*60 Cycles, A.C.  
Listed by Underwriters' Laboratories, Inc.



No. 60262

Use, performance, accessories and dimensions identical to Stream-Flo 100 unit.

†Volts	Wired With 6-Inch Leads		Wired with 6-Foot Cord and Plug	
	No.	Each	No.	Each
110-125	60262	\$46.00	60262-C	\$47.50
220-250	60282	46.00	60282-P	48.00

\*50-cycle ballast furnished when specified. Prices upon application.

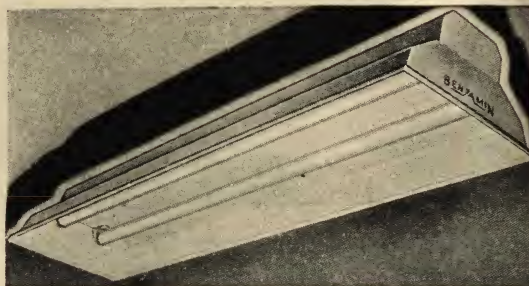
†Can be furnished with 199 to 216-volt ballast at 220 to 250-volt prices.

Standard type starters regularly furnished. Non-Blinking type starters available at \$.40 additional per lamp. Suffix W to number when ordering if Non-Blinking starter is desired.

### Benjamin RLM Type TX-40 Lighting Units

#### For Two and Three 40-Watt 48-Inch Fluorescent Lamps

110-125 Volts, 60 Cycles, A.C.  
220-250 Volts, 60 Cycles, A.C.  
Listed by Underwriters' Laboratories, Inc.



Suitable for locations with humid and damp atmospheres which cause water to be condensed on top of fixture. Used in textile mills, paper mills, food plants, etc.

Power factor, 95 per cent.

Has a one-piece porcelain enameled steel housing which encloses the control equipment and forms the sides of the reflector.

Control equipment is mounted on a removable porcelain enamel steel plate, which, when placed in position becomes the top of the reflector.

Has two cast iron suspension flange assemblies with conduit stops, spaced on 36-inch centers; tapped 1/2-inch standard, 3/4-inch if specified. One is for conduit stem and the other is for wire entrance.

The outside of the reflector is finished in two coats of porcelain enamel which makes the unit resistant to rust from moisture.

Inner reflecting surface has a ground coat and two coats of white porcelain enamel with a reflection factor of 79 per cent.

#### For Two 40-Watt 48-Inch Fluorescent Lamps

Wired with 6-Inch Leads  
With Conventional Ballasts and Standard Starters

*Volts	No.	Each	Length Inches	Width Inches	Height Inches
110-125	49352	\$35.00	52 5/8	13 1/8	7 7/8
220-250	49394	35.00	52 5/8	13 1/8	7 7/8
With Conventional Ballasts and Non-Blinking Starters					
110-125	49352-W	\$36.20	52 5/8	13 1/8	7 7/8
220-250	49394-W	36.20	52 5/8	13 1/8	7 7/8
With Instant Starting Ballasts—No Starters Needed					
110-125	49398	\$42.00	52 5/8	13 1/8	7 7/8
220-250	.....	.....	.....	.....	.....

#### For Three 40-Watt 48-Inch Fluorescent Lamps

With Conventional Ballasts and Standard Starters

*Volts	No.	Each	Length Inches	Width Inches	Height Inches
110-125	49353	\$44.00	52 5/8	13 1/8	7 7/8
220-250	49395	43.00	52 5/8	13 1/8	7 7/8
With Conventional Ballasts and Non-Blinking Starters					
110-125	49353-W	\$45.80	52 5/8	13 1/8	7 7/8
220-250	49395-W	44.80	52 5/8	13 1/8	7 7/8

\*Available with 199 to 216-volt ballast at 220 to 250-volt prices.

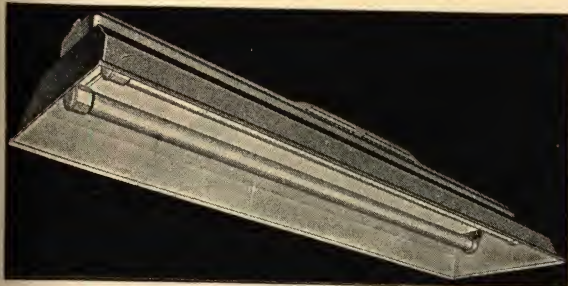


## Benjamin RLM Stream-Flo 40 Lighting Units

For Two and Three T-12, 40-Watt 48-Inch Fluorescent Lamps

110-125 Volts, \*60 Cycles, A.C.  
220-250 Volts, \*60 Cycles, A.C.

Listed by Underwriters' Laboratories, Inc.



For general and local lighting of industrial and commercial locations.

Housing is made of steel with brackets for chain suspension and ample 1/2 and 3/4-inch knockouts. Finished in gray enamel.

Reflector is closed-end type made of enameling iron finished in porcelain enameled steel. Exterior finish is gray. Interior surfaces are white with a reflection factor of 79 per cent or more. Dimensions: 53 3/4 inches in length; 13 1/8 inches in width.

Springlox safety lamp holder speeds lamping and relamping. Simply push one end of lamp into lamp holder and let the spring pressure push the other end into the facing lamp holder. Pressure of the lifetime spring securely locks lamp into position.

A quarter turn of the Lok-Latch reflector fastener quickly attaches or detaches reflector from housing.

Twin-lamp units have lamp holders spaced on 5-inch centers. Triple-lamp units have the two outer lamps spaced on 5-inch centers.

Overall power-factor of lamps and auxiliary equipment is 95 per cent.

Lamps are not included.

### For Two T-12, 40-Watt 48-Inch Fluorescent Lamps

With Conventional Ballasts and Standard Starters

†Volts	Wired with 6-Inch Leads		Wired with 6-Foot Cord and Plug	
	No.	Each	No.	Each
110-125	40662	\$29.30	40662-C	\$30.80
220-250	40682	29.30	40682-P	\$31.30

With Conventional Ballasts and Non-Blinking Starters

110-125	40662-W	\$30.50	40662-CW	\$32.00	40662-PW	\$32.50
220-250	40682-W	30.50	40682-PW	32.50		

With Instant-Starting Ballasts—No Starters Needed

110-125	40762	\$36.30	40762-C	\$37.80	40762-P	\$38.30
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### For Three T-12, 40-Watt 48-Inch Fluorescent Lamps

With Conventional Ballasts and Standard Starters

†Volts	Wired with 6-Inch Leads		Wired with 6-Foot Cord and Plug	
	No.	Each	No.	Each
110-125	40663	\$38.30	40663-C	\$39.80
220-250	40683	37.30	40683-P	\$40.30

With Conventional Ballasts and Non-Blinking Starters

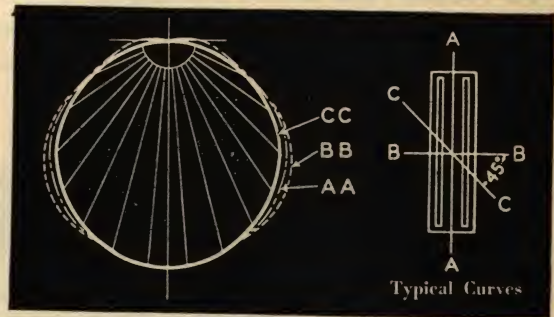
110-125	40663-W	\$41.60	40663-CW	\$40.10	40663-PW	\$42.10
220-250	40683-W	39.10	40683-PW	41.10		

\*50-cycle ballast units available when specified. Prices upon application.

†Units available on special order with 199 to 216-volt conventional type ballast at 220 to 250-volt conventional type ballast prices. Units with 240 to 280-volt conventional type ballasts are also available with prices furnished upon application.

## Benjamin RLM Stream-Flo 40 Fluorescent Lamp Units

Lighting Data for Twin and Triple Lamp Units



Tables below show average illumination obtained with twin and triple lamp Stream-Flo 40 units, using 3500° white 40-watt, 48-inch, fluorescent lamps; for daylight lamps, 1920 lumens, multiply values by .835. Values based on minimum installation of 4 units and maintenance factor of .75. Mounting heights are distance above floor; foot-candle values are on working plane, 30 inches above floor.

### For Units with Two White Fluorescent Lamps of 2300 Lumens Each

Approx. Spacing Feet	*Mounting Ht. Above Floor Ft.	Area per Unit Sq. Ft.	Room Conditions	iROOM PROPORTIONS AVERAGE FOOT-CANDLES		
				Favorable	Average	Unfavorable
7x7	7 1/2	49	Very Light	49-53	45-48	32-36
	to 9 1/2		Fairly Light	48-49	39-45	26-32
			Fairly Dark	46-48	35-39	24-26
8x8	8	64	Very Light	37-39	34-37	24-27
	to 10 1/2		Fairly Light	36-37	31-34	19.7-24
			Fairly Dark	35-36	27-31	18.6-19.7
9x9	8 1/2	81	Very Light	30-32	26-30	19.0-22
	to 11 1/2		Fairly Light	28-30	24-26	15.3-19.0
			Fairly Dark	27-28	21-24	14.5-15.3
10x10	9 1/2	100	Very Light	24-25	22-24	15.3-17.6
	to 12 1/2		Fairly Light	23-24	19.3-22	12.7-15.3
			Fairly Dark	23-23	17.2-19.3	11.7-12.7
11x11	10	121	Very Light	19.9-21	18.0-19.6	12.7-14.6
	to 13 1/2		Fairly Light	19.4-19.9	16.0-18.0	10.5-12.7
			Fairly Dark	18.5-19.4	14.2-16.0	10.1-10.5
12x12	10 1/2	144	Very Light	16.8-17.7	15.1-16.5	10.9-12.6
	to 14 1/2		Fairly Light	16.2-16.8	13.4-15.1	9.6-10.9
			Fairly Dark	15.6-16.2	11.9-13.4	8.4-9.6

### For Units with Three White Fluorescent Lamps of 2300 Lumens Each

7x7	7 1/2	49	Very Light	67-71	60-65	45-53
	to 9 1/2		Fairly Light	66-67	54-60	39-45
			Fairly Dark	62-66	48-54	35-39
8x8	8	64	Very Light	51-55	47-49	35-39
	to 10 1/2		Fairly Light	50-51	42-47	30-35
			Fairly Dark	48-50	37-42	26-30
9x9	8 1/2	81	Very Light	41-43	37-39	27-32
	to 11 1/2		Fairly Light	39-41	33-37	24-27
			Fairly Dark	38-39	30-33	21-24
10x10	9 1/2	100	Very Light	33-35	30-32	22-25
	to 12 1/2		Fairly Light	32-33	26-30	19.2-22
			Fairly Dark	31-32	24-26	17.1-19.2
11x11	10	121	Very Light	27-28	24-26	18.4-21
			Fairly Light	26-27	22-24	15.9-18.4
			Fairly Dark	25-26	19.5-22	14.1-15.9
12x12	10 1/2	144	Very Light	23-24	21-22	15.4-17.7
			Fairly Light	22-23	18.4-21	13.4-15.4
			Fairly Dark	21-22	16.4-18.4	11.8-13.4
13 1/2 x 13 1/2	11 1/2	182	Very Light	18.1-19.2	16.3-17.4	12.0-14.0
	to 16		Fairly Light	17.6-18.1	14.6-16.3	10.5-12.0
			Fairly Dark	16.9-17.6	13.0-14.6	9.4-10.5
15x15	12 1/2	225	Very Light	14.7-15.6	13.3-14.1	9.9-11.5
	to 17 1/2		Fairly Light	14.2-14.7	11.8-13.3	8.5-9.9
			Fairly Dark	13.6-14.2	10.5-11.8	7.6-8.5

\*Minimum heights shown are for spacing ratio of 1 1/2 to 1. The greater heights are for 1 to 1 spacing.

†Use Favorable for broad rooms where width is 4 times mounting height above floor. Use Average where room width is 2 times mounting height above floor. Use Unfavorable where width is equal to mounting height above floor.

‡Imprecise; recommended that interior room conditions be improved or provision made for more frequent maintenance.



### Leader Stratoliner Industrial Lighting Fixtures

#### For Two and Three 40-Watt Fluorescent Lamps

110 Volts—60 Cycles—A.C.

Approved by Underwriters' Laboratories, Inc.



No. IUO-240

Meets industrial lighting demands. Hanging arrangement recruits direction of light where needed.

No. IUO-240 uses two 40-watt lamps. No. IUO-340 takes three 40-watt lamps. No. IUP-240 uses two 40-watt lamps and has closed end Porcelain reflectors. No. IUP-340 takes three 40-watt lamps and has closed end Porcelain reflectors.

E.T.L. approved ballasts, lampholders, and starters.

Available for instant-start operation for 2-40-watt only.

Housing and exterior finished gray baked synthetic enamel; white reflector surface. Dimensions: 51x13 $\frac{5}{8}$ x7 inches.

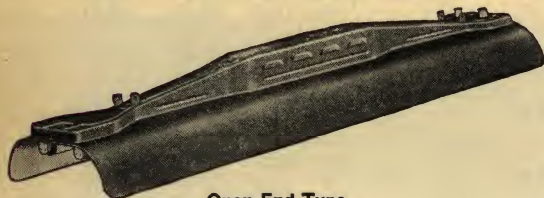
No. IUOL-240, Shipping Weight, 30 Pounds...each	\$26.56
No. IUOL-340, Shipping Weight, 33 Pounds...each	36.16
No. IUP-240, Shipping Weight, 33 Pounds...each	31.71
No. IUP-340, Shipping Weight, 38 Pounds...each	41.89

### Leader Zephyrlite Industrial Lighting Fixtures

#### For Two and Three 40-Watt Fluorescent Lamps

120 Volts—60 Cycles—A.C.

Approved by Underwriters' Laboratories, Inc.



Open End Type

For installation in large or small industrial plants.

No. ZUO-240 takes two 40-watt, 48-inch fluorescent lamps. E.T.L. approved high power factor type ballast. Also available for instant-start operation at additional cost.

No. ZUO-340 identical in design and construction as No. ZUO-240 except for three 40-watt fluorescent lamps.

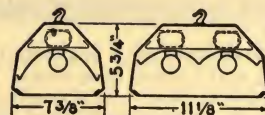
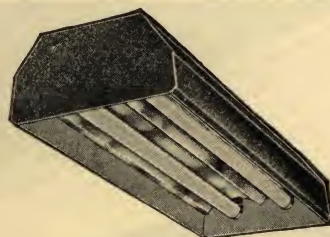
Dimensions: 51x13 $\frac{5}{8}$ x7 inches.

No. ZUO-240, Enamel; Ship. Wt., 25 Pounds...each	\$25.24
No. ZUO-240, Porcelain; Ship. Wt., 26 Pounds each	26.40
No. ZUO-340, Enamel; Ship. Wt., 30 Pounds...each	34.16
No. ZUO-340, Porcelain; Ship. Wt., 31 Pounds each	35.60

### Day-Brite Inspection Lighting Fixtures

#### For One and Two; 15, 20, 30 and 40-Watt Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



Designed for localized lighting where color-matching and daylight quality illumination is required.

Furnished wired and includes sockets, No-Blink type starters and high power factor ballasts for a.c. operation.

Body is made of steel and is finished in baked aluminum gray enamel and has a loop at each end of top for hanging.

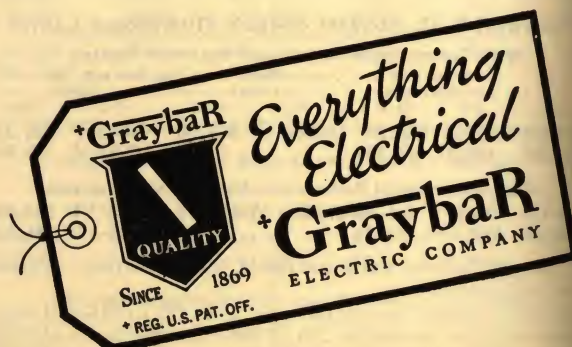
Reflector is specular.

#### One-Lamp

No.	Each	Lamp Watts	Volts	Length Inches
1640NB	\$22.25	15	110	18 $\frac{1}{4}$
1641NB	23.65	20	110	24 $\frac{1}{4}$
1642NA	27.35	30	220	36 $\frac{1}{4}$
1642NB	29.35	30	110	36 $\frac{1}{4}$
1643NA	30.25	40	220	48 $\frac{1}{4}$
1643NB	32.35	40	110	48 $\frac{1}{4}$

#### Two-Lamp

No.	Each	Lamp Watts	Volts	Length Inches
1650NB	\$26.60	15	110	18 $\frac{1}{4}$
1651NB	28.30	20	110	24 $\frac{1}{4}$
1652NA	40.40	30	220	36 $\frac{1}{4}$
1652NB	40.40	30	110	36 $\frac{1}{4}$
1653NA	45.00	40	220	48 $\frac{1}{4}$
1653NB	45.00	40	110	48 $\frac{1}{4}$





## Day-Brite Day-Line Heavy Duty Continuous Industrial Lighting Fixtures

For Two and Three 40-Watt Fluorescent Lamps

For Two 100-Watt Fluorescent Lamps

With Removable Open-End Porcelain Enameled Reflectors

110 Volts, 60 Cycles, A.C.



Continuous industrial fixtures in any length can be made up of the parts illustrated.

Designed for easy application of the various mounting methods shown below.

Furnished wired and include approved type high power factor ballasts, sockets, and No-Blink starters for 110-volt, 60-cycle, a.c. operation.

Channel is die-formed and is finished in baked aluminum gray enamel.

Reflector is open-end and is finished in vitreous porcelain enamel consisting of one ground coat and two white coats inside with one ground coat and one gray coat outside.

Reflection factor, 79 per cent or more.

Lateral shielding angle meets RLM standards.

Reflectors are individually removable and are mounted to channel by two captive wing nuts which have a 2-inch diameter bearing surface assuring rigid, fool-proof fastening.

### Basic Sections



No.	Each	No. of Lamps	Lamp Watts	Length Inches
41432-N	\$62.80	4	40	105½
41632-N	84.20	6	40	105½
51432-N	115.00	4	100	132

### Fill-In Sections



41232-N	\$31.40	2	40	52¾
41332-N	42.10	3	40	52¾
51232-N	57.50	2	100	66

### Alternate Reflector Sections

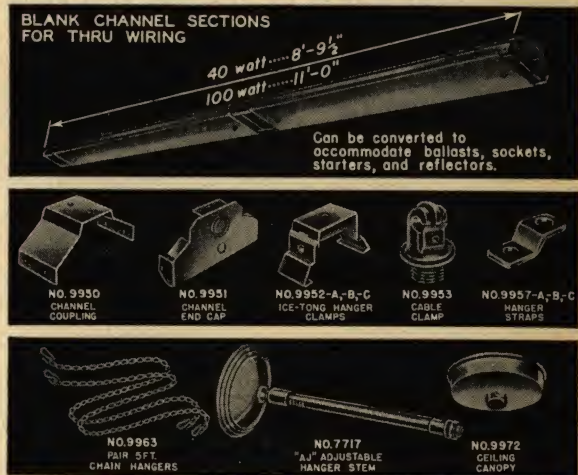


41233-N	\$41.30	2	40	105½
41333-N	52.00	3	40	105½
51233-N	70.00	2	100	132

### Removable Reflectors



### Fittings and Parts



No. 7717, A-J Adjustable Hanger.....	each	\$3.40
No. 7724, Steel Louver, 40-Watt.....	each	9.25
No. 7725, Steel Louver, 100-Watt.....	each	12.20
No. 9950, Channel Coupling.....	each	.60
No. 9951, Channel End Cap.....	each	.50
No. 9952-A, Ice-Tong Hanger for ¾-Inch Rod or Mounting Screw.....	each	1.00
No. 9952-B, Ice-Tong Hanger for ½-Inch Conduit Pipe Hangers.....	each	1.00
No. 9952-C, Ice-Tong Hanger for ¾-Inch Iron Pipe Hangers.....	each	1.00
No. 9953, Cable Clamp.....	each	1.15
No. 9957-A, Hanger Strap for ¾-Inch Mtg. Screw.....	ea.	.30
No. 9957-B, Hanger Strap for ½-Inch Conduit.....	each	.30
No. 9957-C, Hanger Strap for ¾-Inch Iron Pipe.....	each	.30
No. 9963, 5-Foot Chains and S Hooks.....	per pair	.80
No. 9972, Ceiling Canopy (Slips ½-Inch Pipe).....	each	1.00
No. 40201, Blank Channel 105½ Inches Long.....	each	12.00
No. 50201, Blank Channel 132 Inches Long.....	each	15.00

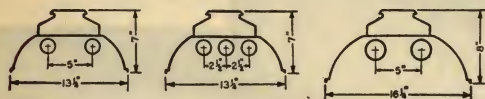


## Day-Brite Heavy Duty Day-Line Industrial Lighting Units

For Two and Three 40-Watt Fluorescent Lamps

For Two 100-Watt Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



A complete single fluorescent lighting unit.

Truss-like construction of the die-formed steel fixture hood provides increased strength that supports socket saddle and ballast, assuring rigid alignment of all parts.

Fixture hood is arranged for chain, pipe, or steel hangers. Cord outlets and knockouts are provided for electrical connections.

Furnished wired and includes approved high power factor ballast, sockets, and No-Blink type starters for 60-cycle a.c. operation. Instant-starting ballast can be furnished on special order for two-lamp, 40-watt, 110-volt fixture only.

Sockets, lamp starters, and ballast are fastened in the hood, leaving the reflector free for complete removal for servicing and cleaning operations.

The reflector is fastened to the hood by two captive wing-nuts having a 2-inch diameter bearing surface.

The lamp starters are located behind the sockets and are easily replaced without disturbing the lamps.

Hood is finished in baked aluminum gray enamel.

Open end reflector is finished in vitreous porcelain enamel. Reflection factor, 79 per cent or more.

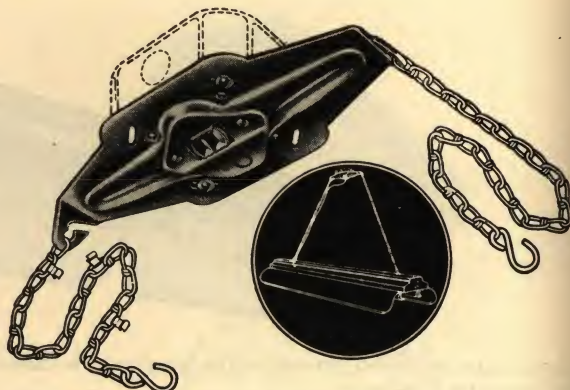
No.	Each	No. of Lamps	—LAMPS—		—DIMENSIONS, INCHES—		
			Watts	Volts	Length	Height	Width
40231NBW	\$32.40	2	40	110	52 3/4	7	13 1/4
40231NAW	32.40	2	40	220	52 3/4	7	13 1/4
40331NBW	43.10	3	40	110	52 3/4	7	13 1/4
40331NAW	43.10	3	40	220	52 3/4	7	13 1/4
50231NBW	58.50	2	100	110	66	8 1/8	16 1/4
50231NAW	58.50	2	100	220	66	8 1/8	16 1/4

For Levolver pull switch wired to fixture, add \$2.00. For 2-wire cord and plug No. 9973-2 add \$1.20. For 3-wire cord and plug No. 9973-3 add \$1.50.

## No. 9988 Day-Brite Hydee Fixture Hangers

For All Chain Suspension Fixtures

Underwriters' Approved



A complete, self-contained fitting for speedy, inexpensive installation. Fastens to ears of 4 and 3 1/4-inch outlet box or open-type plaster ring. Includes receptacle for two-prong plug, knockout for switch, two 5-foot chains with S hooks and cord clips.

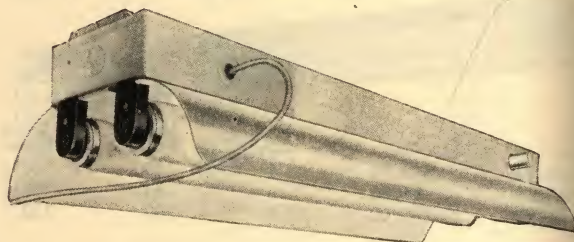
Width, 4 1/8 inches; length, 9 1/4 inches.

No. 9988.....each \$1.82

## No. 2060 Mitchell Portable Industrial Lighting Fixtures

For Two 20-Watt Fluorescent Lamps

110-125 Volts, 60 Cycles A.C.



For high intensity, localized lighting of production, assembly, and inspection lines, over benches, machines, and tables. RLM approved for chain suspension, for rigid mounting or for continuous row mounting.

Reflector is made of Lumenite, a durable moisture-resistant composition. Wireway is made of steel with knockouts at both ends.

Has FS-2 starter mounted on side of wireway; ballasts; and sockets.

Furnished with 6-foot cord and plug. Knockouts are also provided for rigid (conduit) mounting, singly, in twin groups, or continuous rows. Chains of 8 feet in length are also available.

Dimensions: length, 24 inches; width, 9 1/2 inches; height, 4 1/2 inches.

Individually packed. Shipping weight, 8 pounds.

No. 2060.....each \$10.95

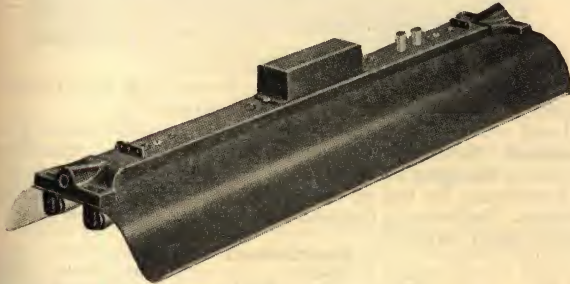


## No. 2080-S Mitchell Industrial Lighting Fixtures

With Open-End Steel Reflector  
For Two 40-Watt Fluorescent Lamps

110-125 Volts, 60 Cycle A.C.

Approved by Underwriters' Laboratories



Approved by Electrical Testing Laboratories for individual or continuous row lighting.

Operates at a low ambient temperature.

Stroboscopic corrected.

Power factor over 90 per cent.

Made of steel.

Has approved tulamp ballasts, starter, and sockets.

Dimensions: length, 48 inches; width, 13 $\frac{3}{4}$  inches; height, 7 $\frac{3}{8}$  inches.

Baked enamel finish.

Accessories for hanging at extra cost.

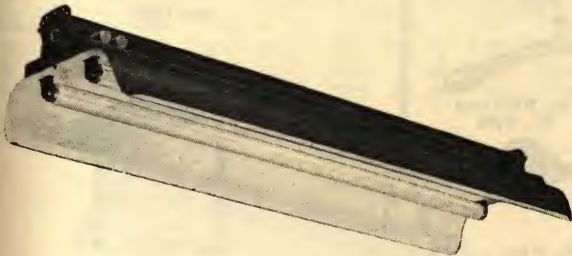
No. 2080-S.....each \$21.50

## Mitchell Industrial Lighting Fixtures

For Two 40-Watt Fluorescent Lamps

110-125 Volts, 60 Cycles A.C.

Approved by Underwriters' Laboratories



Approved by Electrical Testing Laboratories.

Has tulamp ballast, sockets, and starters.

Stroboscopic tested.

Power factor over 90 per cent.

Wireway channel and reflector are made of steel.

Dimensions: length, 50 inches; width, 13 $\frac{3}{4}$  inches; height, 7 inches.

No. 2082 has baked enamel finish.

No. 2084 has porcelain enamel finish.

Accessories are available at extra cost.

No. 2082, Baked Enamel.....each \$22.95

No. 2084, Porcelain Enamel.....each 23.95

## Mitchell Industrial Lighting Fixture Accessories

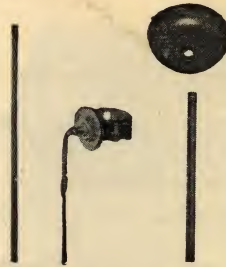
For Hanging or Mounting



No. 301



No. 313



No. 306 No. 311



No. 312



No. 302



No. 314



No. 315



No. 316



No. 317



No. 318

**No. 301.** Underwriters' Laboratories approved cord and plug set 6 $\frac{1}{2}$  inches in length with ground lead and bushing.....each \$1.10

**No. 313.** Two-conductor cord and plug 5 $\frac{1}{2}$  inches in length with bushing.....each .69

**No. 302.** Two 8-foot Tenso chains with S hooks (chains 7/0 Tenso, 175 pound torque). Used for suspension of lighting units.....per pair .84

**No. 306.** Rod, 3 inches in length,  $\frac{3}{8}$ -inch diameter, threaded both ends. Used with slide hanger clamp or rod suspension of lighting units.....each .62

**No. 311.** Pull switch with pull chain for individual mounted lighting units.....each 1.85

**No. 312.** Stem set (canopy and  $\frac{3}{8}$ -inch iron pipe), which is mounted directly to wireway channel and secured with lock-nuts.....per set 1.00

**No. 314.** Messenger cable hanger for messenger cable suspension that can be mounted with slide hanger clamp or directly to channel.....each .44

**No. 315.** Slide hanger clamp with nut and bolt fits channel and anchors suspension device.....each .80

**No. 316.** Channel coupler for open-end lighting units when mounting in continuous row.....each .40

**No. 317.** Channel coupler for closed end lighting units when mounting in continuous row.....each .84

**No. 318.** Aligner strap.....each .44



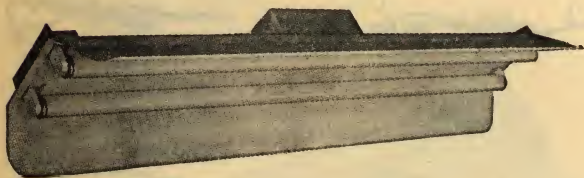
## Smithcraft Economy Series Industrial Lighting Fixtures

For Two or Three 40-Watt Fluorescent Lamps

For Two 100-Watt Fluorescent Lamps

110-125 Volts or 220-250 Volts, 60 Cycles, A.C.

Approved by Underwriters' Laboratories, Inc.



Has minimum light output of 85 per cent.

Completely wired with E.T.L. approved high power factor ballasts, lamp sockets, and FS4 or FS64 starters.

Lead wires approximately 12 inches outside housing is standard.

Housing is die-formed, sturdy and light in weight.

Knockouts for rod or conduit suspension are on 24-inch centers.

Reflector is finished in baked white enamel inside, French gray outside.

No.	Each	No. of Lamps	Watts	DIMENSIONS, INCHES			Ship. Wt.
				Length	Width	Depth	
LS2-40	\$23.89	2	40	49½	13	5½	26
LS3-40	33.78	3	40	49½	13	5½	29
LS2-100	44.22	2	100	63	15	6½	37

Double 40-watt fixtures available with lightning start ballasts. If desired add prefix Q to number when ordering and add 3 pounds to weight.

## Smithcraft Individual Industrial Lighting Fixtures

For Two or Three 40-Watt Fluorescent Lamps

For Two 100-Watt Fluorescent Lamps

110-125 Volts or 220-250 Volts, 60 Cycles, A.C.

Approved by Underwriters' Laboratories, Inc.



Has minimum light output of 85 per cent.

Completely wired with E.T.L. approved high power factor ballasts, lamp sockets, and FS4 starters.

Lead wires approximately 12 inches outside housing is standard.

Girder-like housing, made of steel, provides for every hanging and mounting requirement.

Knockouts for rod or conduit suspension are on 24-inch centers.

Furnished with the single turn release, which consists of two wing nuts that release reflector while the captive hood bolts and chains suspend the reflector for easy servicing.

Reflector is finished in white baked enamel inside, French gray outside.

No.	Each	No. of Lamps	Watts	DIMENSIONS, INCHES			Ship. Wt.
				Length	Width	Depth	
HS2-40	\$25.89	2	40	49½	14	7	29
HS3-40	35.44	3	40	49½	14	7	32
HS2-100	47.78	2	100	62½	16½	8	40

Double 40-watt fixtures available with lightning start ballasts. If desired add prefix Q to number when ordering and add 3 pounds to weight.

## Smithcraft Continuous Row Lighting Fixtures

For Two, Three, Four, and Six 40-Watt Fluorescent Lamps

For Two 100-Watt Fluorescent Lamps

110-125 Volts and 220-250 Volts, 60 Cycles, A.C.

Approved by Underwriters' Laboratories, Inc.



Has minimum light output of 85 per cent.

Completely wired with E.T.L. approved high power factor ballasts, lamp sockets, and FS4 starters.

Lead wires approximately 12 inches outside housing is standard. Girder-like housing, made of steel, provides for every hanging and mounting requirement.

Knockouts for rod or conduit suspension are on 24-inch centers. Reflector is finished in white baked enamel inside, French gray outside.

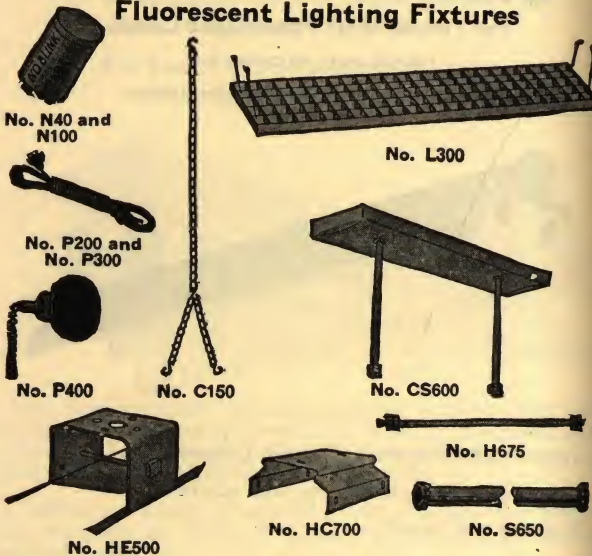
		Basic Sections		Length Inches	No. of Reflectors	Ship. Wt. Lb.
No.	Each	No. of Lamps	Watts			
CHS2-42	\$53.89	4	40	99¼	2	61
CHS3-42	71.67	6	40	99¼	2	70
*CAS2-41	37.33	2	40	99¼	1	45
*CAS3-41	47.77	3	40	99¼	1	50
		Fill-in Sections		Length Inches	No. of Reflectors	Ship. Wt. Lb.
No.	Each	No. of Lamps	Watts			
CHS2-40F	\$27.67	2	40	49½	1	30
CHS3-40F	37.33	3	40	49½	1	35
CHS2-100F	50.33	2	100	62	1	50

\*Consists of one blank section unwired and one reflector section wired.

Price does not include lamps. Prices include following installation accessories as required: No. HE500 Adjusta Slide Hanger Clamp; No. HE500M Adjusta Slide Hanger with Cable Clamp; No. HC700 Housing Coupling; No. E725 Housing End Clamp No. A750 Angle Chain Hanger.

Double 40-watt fixtures available with lightning start ballasts. If desired add prefix Q to number when ordering and add 3 pounds to weight.

## Accessories for Smithcraft Industrial Fluorescent Lighting Fixtures



No.	Description	Each
N40	No-Blink Starters, FS40.....	\$1.67
N100	No-Blink Starters, FS100.....	.44
C150	Tenso 4-Foot Chain Hanging Set with S Hooks.....	.71
P200	2-Conductor Cord Set Installed, Length 4 Feet.....	1.11
P300	3-Conductor Cord Set Installed, Length 4 Feet.....	1.33
L300	Steel Louver for Lamp Shielding.....	7.27
P400	Levolier Pull Switch Installed.....	1.67
CS600	Canopy and Stem Assembly Set.....	5.46
S650	Threaded ½-Inch Conduit Stems.....	1.21
H675	Hanger 5/16-In. Rod Assembly Threaded with Nuts....	.67
HC700	Housing Couplings.....	.33
E725	Housing End Cap.....	.44
HE500	Adjusta Hanger.....	.44



## Wheeler 7000 Heavy Duty Line RLM Fluorescent Units

With Porcelain Enameled Steel Reflectors

Approved by Underwriters' Laboratories

Complete Single Length Fixtures



Two 40-Watt Open End Fixture

Wheeler 7000 line all steel fluorescent fixtures are designed and manufactured to conform with specifications and standards of RLM Standards Institute.

**Features.** Reflectors are demountable from wiring channels by a simple movement of the specially designed supporting plates. These plates are operated by loosening two thumb screws and sliding them towards center of reflectors.

**Reflectors.** Heavy gage, porcelain enameled, steel reflectors are available in either open end or closed end style. All reflecting surfaces white, and outside finish grey.

**Wiring Channel.** Steel wiring channel is rigidly constructed to totally enclose all operating equipment. The specially grooved channel formation permits the use of fully adjustable hanger suspension fittings which can be clamped in position at any point desired. Starter switches are located on the side of the channel. Channel is finished in grey paint to blend with reflectors.

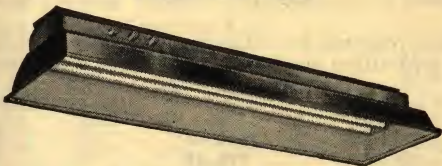
**Suspension.** Provisions are made in the specially grooved channel formation for chain suspension and the top of the channel is provided with  $\frac{1}{2}$ -inch conduit size knockouts for conduit suspension. Knockouts on 40-watt units are spaced 24, 36 and 44  $\frac{1}{16}$ -inches on centers. Holes to receive chain hangers are spaced 44  $\frac{1}{16}$ -inches on centers. Knockouts on 100-watt units are spaced 24, 36 and 57  $\frac{1}{16}$ -inches on centers.

**Ballast Equipment.** All fixtures are supplied with the latest type of high power factor ballast equipment, starter switches and are supplied wired.

### Open End Type

Lamp Size Watts	No. of Lamps	OVERALL DIMEN. INCHES			Approx. Ship. Wt., Lb.	VOLTAGE (60 CYCLE)			
		Lgth.	Width	Depth		No.	110-125 V. Each	No.	220-250 V. Each
40	2	50 $\frac{1}{2}$	13	6 $\frac{5}{8}$	33 $\frac{1}{4}$	7021	\$23.75	7022	\$23.75
40	3	50 $\frac{1}{2}$	13	6 $\frac{5}{8}$	37 $\frac{1}{4}$	7031	31.45	7032	30.70
100	2	63	16 $\frac{1}{8}$	7 $\frac{3}{4}$	55	7121	44.25	7122	44.25

### Closed End Type



Three 40-Watt Closed End Fixture

Lamp Size Watts	No. of Lamps	OVERALL DIMEN. INCHES			Approx. Ship. Wt., Lb.	VOLTAGE (60 CYCLE)			
		Lgth.	Width	Depth		No.	110-125 V. Each	No.	220-250 V. Each
40	2	52 $\frac{1}{4}$	13	6 $\frac{5}{8}$	34 $\frac{3}{4}$	7221	\$27.60	7222	\$27.60
40	3	52 $\frac{1}{4}$	13	6 $\frac{5}{8}$	38 $\frac{3}{4}$	7231	35.30	7232	34.50
100	2	65 $\frac{3}{8}$	16 $\frac{1}{8}$	7 $\frac{3}{4}$	58	7321	50.00	7322	50.00

Instant starting ballasts can be supplied on all units using 2-light, 40-watt, 110-volt ballasts; add \$5.75 per ballast. To order, prefix No. with letters IS.

### Accessories

No.	Description	Each
7083	C-Clamp Slide Hanger	\$.75
7089	6-Foot No. 18 2-Cond. Cord and Plug (Unattached)	.95
7090	6-Foot No. 18 3-Cond. Cord and Plug (Unattached)	1.45
7092	Chain Hangers—for 5-Foot Suspension (Pair of 2)	.95

## Series II Wheeler Dust-Tight Lighting Units

For Two and Three 40-Watt Fluorescent Lamps

Vaportight

Approved by Underwriters' Laboratories  
For Class II, (Group G and F), III, and IV Locations



With Hinged Dust-Tight Glass Cover Open

Hinged dust-tight glass cover is readily opened for access to lamps or starter switches by releasing toggle latches. Three types of glass are available:  $\frac{3}{16}$ -inch double thick plain clear glass;  $\frac{1}{4}$ -inch water white plate glass; and  $\frac{1}{4}$ -inch tempered, clear safety plate glass.

All units are supplied complete with high power factor ballast equipment employing separate and renewable starter switches. A starting compensator is included.

Made for use in food plants, foundries, and similar locations where it is necessary to protect lamps, sockets and reflecting surfaces from moisture, dust, smoke and vapors.

The entire outer body of the reflector, including its closed ends, is enameled in one piece.

The mouth of the reflector has a recessed flange to receive the hinged glass cover which seats against cushioning gaskets.

Fixtures are furnished wired, with pigtailed left for connecting to branch circuit.

Two chain hangers are connected from hood of unit to wiring channel to prevent channel from dropping to floor after holding screws located in bottom of channel are released.

Suspension fittings: units are furnished with two flat flanges, spaced on 36-inch centers, tapped  $\frac{1}{2}$  inch standard,  $\frac{3}{4}$  inch if specified.

Fixture dimensions: length, 53 inches; width, 14 $\frac{3}{4}$  inches; depth, 7 inches.

Reflectors are porcelain enameled, gray outside, white inside.

Standard package, 1.

Prices do not include lamps.

Conduit is not furnished.

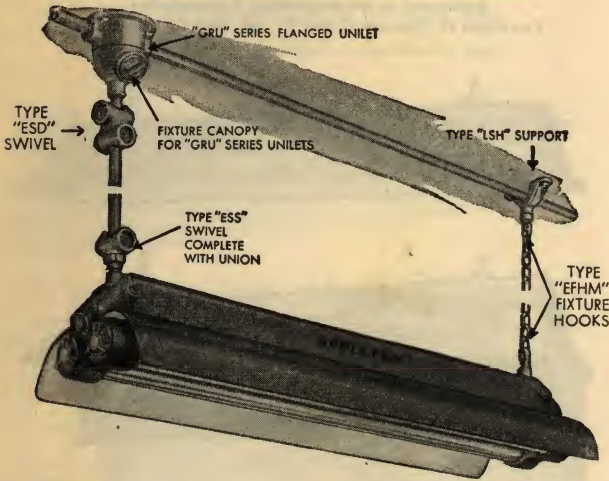
### Tapped for $\frac{1}{2}$ -Inch Conduit

No. of Lamps	Line Voltage	Unit with $\frac{3}{16}$ -inch Double Thick Plain Clear Glass		Unit with $\frac{1}{4}$ -inch Water White Plate Glass		Unit with $\frac{1}{4}$ -inch Tempered Clear Safety Plate Glass		Weight Pounds
		No.	Each	No.	Each	No.	Each	
2	110-125	4981	\$57.70	C4980	\$71.65	H4980	\$77.80	80
2	220-250	4983	57.70	C4982	71.65	H4982	77.80	80
3	110-125	4985	65.40	C4984	79.35	H4984	85.50	81
3	220-250	4987	64.60	C4986	78.55	H4986	84.70	81



Appleton EFU Explosion-Proof Fluorescent Fixtures and Accessories

For Two 40-Watt, 48-Inch T-12 Fluorescent Lamps  
Class 1, Groups C and D—Class 11, Groups E, F, and G  
Listed as Standard by Underwriters' Laboratories



Modern lighting for hazardous locations. Hospital operating rooms, volatile fuel and chemical refineries, powder manufacture and shell loading, flour and grain mills are a few of the many locations where fluorescent lighting may now be safely applied.

The advantages of fluorescent lighting include new working comfort due to low brightness and lack of glare, high efficiency when compared with incandescent lamps of equal wattage, and safety of operation in explosive atmospheres due chiefly to cooler operating temperatures.

These fixtures are lightweight units designed to afford every convenience in making simple, quick lamp renewals and maintenance. No external seals are necessary as all seals and internal wiring are completed in manufacture. Line connections are made to terminal block in junction chamber.

Standard equipment includes the following:

High-power-factor two-lamp ballast, necessary auxiliary equipment, pyrex external glass tubes and two-piece, metallic reflector. Reflector has two coats of baked white enamel and surfaces are chip-proof, washable, and retain an unusually high reflection factor.

To facilitate mounting, the use of Appleton Type UNY Explosion-proof Union Connectors in either or both end castings is recommended. The ceiling junction may be of the GRU series of flanged Unilets with a suspended fixture canopy. This simplifies pulling of wires on continuous line runs.

Overall length, 52 $\frac{3}{4}$  inches, overall width, 15 inches, overall height, 8 $\frac{3}{4}$  inches, mounting centers, 46 $\frac{5}{8}$  inches, tube centers, 5 inches.

With One Two-Lamp Ballast of 95 Per Cent Power-Factor

No. ....	52900	52905
*Each. ....	\$176.45	\$176.45
Size. .... inches	1 $\frac{1}{2}$	1 $\frac{1}{2}$
Line Voltage. ....	118 V., 60 Cycle	283 V.
Weight. .... pounds	49	49

No. 52910 Supports for Dummy End of Fluorescent Units

No. ....	52910
Each. ....	\$ .55
Type. ....	LSH
Size. .... inches	1 $\frac{1}{2}$

No. UNY84 Union Connectors

No. ....	UNY84
Each. ....	\$ .50
Size. .... inches	1 $\frac{1}{2}$
Length. .... inches	2 $\frac{3}{8}$
Diameter. .... inches	1 $\frac{1}{8}$
Standard Package. ....	50

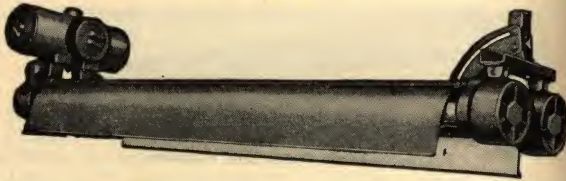
\*Fluorescent lamps not included.

Type EVF Industrial Lighting Fixture Condulets

Schedule CE

For Two 40-Watt and T-8 Fluorescent Lamps  
Explosion-Proof and Dust-Tight

Class I, Groups C and D Class II, Groups E, F, and G; and Class III



Can be mounted end to end. It is unnecessary to leave excessive space between fixtures for relamping, which makes possible continuous and uniform illumination.

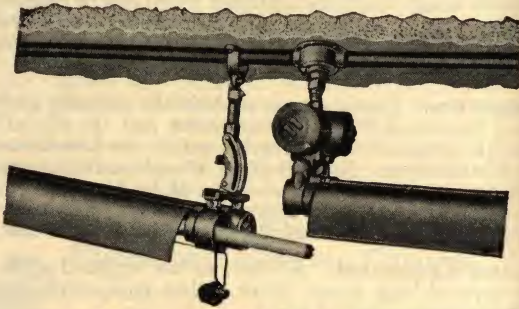
Relamping is quick and easy. No special tools are required.

Ballast housing is unobstructed and readily accessible. This arrangement also results in a cool operating temperature.

Reflectors are easily removable and are replaced without the use of tools.

It is not necessary to raise and connect both ends simultaneously, thus simplifying installation.

\*Furnished with enameled reflector, standard ballast, and starter.



Type EVF Showing Adjacent Ends of Two Fixtures  
One Fixture Lowered for Relamping with Lamp  
Partly Withdrawn

Dimensions

Length overall, 54 inches.  
Width overall, 13 $\frac{5}{8}$  inches.  
Height at ballast end, 12 $\frac{3}{8}$  inches.  
Height at relamping end, 9 $\frac{3}{8}$  inches.  
Distance between conduit centers, 50 inches.  
Minimum center-to-center distance between fixtures, 55 inches.  
Distance required for relamping between the relamping end and a partition or similar obstruction, 48 inches.

Hub Size Inches	No.	Each	LAMP	
			Watts	Volts
1 $\frac{1}{2}$	EVF124	\$176.45	40	110-125
3 $\frac{1}{4}$	EVF224	176.45	40	110-125
1 $\frac{1}{2}$	EVF1242	176.45	40	220-250
3 $\frac{1}{4}$	EVF2242	176.45	40	220-250

Accessories



No. EVF20



No. EVF021



No. EVF21

No.	Size Inches	Description	Each
EVF20	3 $\frac{1}{4}$	Ceiling Saddle for Conduit Support....	\$ .67
EVF021	..	Ceiling Saddle for Support Hook.....	.67
EVF21	3 $\frac{1}{4}$	Support Hook for Conduit.....	.45

\*Lamps are not included in prices.

1 $\frac{1}{2}$ -inch hub at ballast end only; 3 $\frac{1}{4}$ -inch hub at relamping end.



## Dazor Floating Lamps

110 Volts



May be raised, lowered, pushed, pulled, turned, tilted, or swung completely around at a mere touch, and it stays put without any further adjustment or locking. Arms are scientifically counter-balanced in all positions by a spring.

**Bracket Model.** Screws to underside of drawing board permitting use of T-square on upper edge of board. Auxiliary installed beneath spring mechanism.

**Universal Model.** Clamps or screws to horizontal, sloping, or vertical surfaces. For desks, drawing boards, tables, benches, business and industrial machines. Auxiliary installed in housing beneath spring mechanism.

**Pedestal Model.** Portable floor type. Suitable for shops, offices, studios, and homes. May be had in white baked enamel finish. Auxiliary in base.

**Desk Model.** Portable. Requires no screws or clamps. Has heavily weighted base. Auxiliary is installed in the base.

**Standard Finish.** Brown baked enamel over Bonderizing. Inner surfaces of reflectors are white baked enamel. Pedestal model available in white baked enamel.

**Reflectors.** Fluorescent: 18¾ inches long for 15-watt tubes; 9¾ inches long for 6-watt tubes. Incandescent: available in two sizes, 6½ and 5½ inches.

**Standard Packing.** Universal and Bracket Models—both Fluorescent and Incandescent: 1 to a carton, 6 cartons to a case. Pedestal Model—both Fluorescent and Incandescent: 1 to a case. Desk Model—Fluorescent: 1 to a carton, 2 or 3 to a shipping case.

## Fluorescent Type

## Bracket Model—Floating Arm

One T8—15 Watt Tube				P.F. Per Cent	Arm Ext. In.
No.	Without Tube Each	Cycles			
1434-16	\$15.75	60	50	34	
P-1434-16	18.50	60	95	34	
1434-15	16.75	50	50	34	
P-1434-15	19.75	50	95	34	
*1434-10	17.25	DC	100	34	
Two T8—15 Watt Tubes					
2434-16	\$19.50	60	50	34	
P-2434-16	22.25	60	95	34	
2434-15	20.50	50	50	34	
P-2434-15	23.50	50	95	34	
*2434-10	22.25	DC	100	34	

## Desk Model—Floating Arm

One T8—15 Watt Tube				P.F. Per Cent	Arm Ext. In.
No.	Without Tube Each	Cycles			
1324-16	\$19.75	60	50	24	
P-1324-16	22.50	60	95	24	
1324-15	21.00	50	50	24	
P-1324-15	23.75	50	95	24	
*1324-10	21.50	DC	100	24	
Two T8—15 Watt Tubes					
2324-16	\$23.00	60	50	24	
P-2324-16	26.00	60	95	24	
2324-15	24.25	50	50	24	
P-2324-15	27.25	50	95	24	
*2324-10	26.00	DC	100	24	

## Pedestal Model—Floating Arm

One T8—15 Watt Tube				P.F. Per Cent	Arm Ext. In.
No.	Without Tube Each	Cycles			
1224-16	\$21.50	60	50	24	
1234-16	21.50	60	50	34	
P-1224-16	24.25	60	95	24	
P-1234-16	24.25	60	95	34	
1224-15	22.50	50	50	24	
1234-15	22.50	50	50	34	
P-1224-15	25.50	50	95	24	
P-1234-15	25.50	50	95	34	
*1224-10	23.00	DC	100	24	
*1234-10	23.00	DC	100	34	

## Universal Model—Floating Arm

One T8—15 Watt Tube				P.F. Per Cent	Arm Ext. In.
No.	Without Tube Each	Cycles			
1124-16	\$15.75	60	50	24	
1134-16	15.75	60	50	34	
P-1124-16	18.50	60	95	24	
P-1134-16	18.50	60	95	34	
1124-15	16.75	50	50	24	
1134-15	16.75	50	50	34	
P-1134-15	19.75	50	95	24	
P-1134-15	19.75	50	95	34	
*1124-10	17.25	DC	100	24	
*1134-10	17.25	DC	100	34	

## Two T8—15 Watt Tubes

2124-16	\$19.50	60	50	24	
2134-16	19.50	60	50	34	
P-2124-16	22.25	60	95	24	
P-2134-16	22.25	60	95	34	
2124-15	20.50	50	50	24	
2134-15	20.50	50	50	34	
P-2124-15	23.50	50	95	24	
P-2134-15	23.50	50	95	34	
*2124-10	22.25	DC	100	24	
*2134-10	22.25	DC	100	34	

## Pedestal Model—Floating Arm

Two T8—15 Watt Tubes				P.F. Per Cent	Arm Ext. In.
No.	Without Tube Each	Cycles			
2224-16	\$26.00	60	50	24	
2234-16	26.00	60	50	34	
P-2224-16	28.75	60	95	24	
P-2234-16	28.75	60	95	34	
2224-15	27.25	50	50	24	
2234-15	27.25	50	50	34	
P-2224-15	30.00	50	95	24	
P-2234-15	30.00	50	95	34	
*2224-10	28.75	DC	100	24	
*2234-10	28.75	DC	100	34	

## Universal Model—Floating Arm

Two T5—6 Watt Tubes				P.F. Per Cent	Arm Ext. In.
No.	Without Tubes Each	Cycles			
6W-2124-16	\$19.50	60	50	24	
6W-2134-16	19.50	60	50	34	
P-6W-2124-16	22.25	60	95	24	
P-6W-2134-16	22.25	60	95	34	
*6W-2124-10	22.25	DC	100	24	
*6W-2134-10	22.25	DC	100	34	

## Incandescent Type

Identical to Fluorescent except for light and reflector.

## Universal Model

## For One 40-75 Watt Lamp

No. ....	3124	3134
†Each. ....	\$9.25	9.25
Arm Ext. .... in.	24	34

## Pedestal Model

## For One 40-75 Watt Lamp

No. ....	3224	3234
†Each. ....	\$15.75	15.75
Arm Ext. .... in.	24	34

## Bracket Model

## For One 40-75 Watt Lamp

No. ....	3434	
†Each. ....	\$9.25	
Arm Ext. .... in.	34	

## Reflectors

Packed 1 in a carton, 6 in a case.

No. ....	R-1	R-2
†Each. ....	\$ .75	1.50
Diam. .... in.	5½	6½
For Bulb. .... watts	40-60	40-75

\*Equipped with resistor cord, plug. †Prices do not include reflector, bulb. West Coast prices slightly higher.



## Swivelier Adjustable Lighting Fixtures

Adjusts 90 degrees vertically and 350 degrees horizontally. Has no wing nuts or set screws. Stays put at any angle.

Will not work loose or drop down regardless of number of adjustments.

Unaffected by vibration. Spring construction maintains constant tension.

Wires will not twist as lamp is adjusted.

## Desk Lamps



No. T605-12BR2



No. P600-12W3BR

Rich bronze finish. Has heavy, felt-covered base.

Individually packed.

No. T605-12BR2.....each \$6.15  
No. P600-12W3BR.....each 5.10

## Adjustable Hood Shades

Mounted on 4-Inch Outlet Box Covers



No. H547AN-L30



No. H2547AN-L6



No. H547AN-L6

For store, theater and public building lighting.

Shade is finished in infra-baked aluminum.

Furnished with leads, ready for attachment.

No.	Each	Carton
H547AN-L6	\$6.90	12
H547AN24-L30	9.85	6
H2547AN-L6	13.80	6

## No. 940BR Double-Purpose Lamps

Used as a direct light or indirect light table lamp.

Also used with infra-red and RS ultra-violet bulbs.

Price does not include bulbs.

Packed individually, 12 to a carton.

No. 940BR.....each \$9.95



## Heat Lamp Fixtures

For Infra-Red and RS Ultra-Violet Bulbs



No. 907BR



No. 607BR



No. 975BR

Rich bronze finish. Has heavy, felt-covered base.

No.	Each	Carton
607BR	\$2.60	24
907BR	5.00	12
975BR	7.95	12

## Swivelier Work Lights

Used on machine tools, work benches, etc.

Furnished with toggle switch in base and porcelain keyless socket.

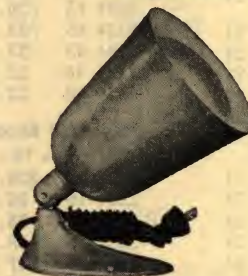
Individually packed, 10 to a carton.

No.	Each	Arm Length Inches
Y-6W3-BA2	\$9.00	6
Y-12W7-BA2	10.20	12
Y-18W7-BA2	10.90	18
Y-24W7-BA2	11.60	24
Y-30W7-BA2	12.30	30



No. Y-24W7-BA2

## Adjustable Window Lighting Units



No. H607AN



No. 547GR



No. 107GR

No.	Each	Description	Carton
107GR	\$1.60	Screw-In Adapter Type	10
547GR	1.75	On 4-Inch Box Cover	10
H607AN	7.50	Portable, with Hood Shade	12



## Adusco Adjustable Lighting Brackets With 3 Sets of Universal Joints



For direct attachment to conduit or outlet box. Has 1/2-inch I.P. male connection to conduit.

No.....	242E	242G	242H	242K
Bracket Only.....each	\$5.40	\$5.60	\$5.80	\$6.00
*Complete.....	7.60	7.80	8.00	8.20
Length.....inches	18	24	30	36

### With Universal Joint at Base—Flexible End Arm



For direct attachment to conduit or outlet box. Has 1/2-inch I.P. male connection to conduit.

No.....	244E	244G	244H	244K
Bracket Only.....each	\$4.60	\$4.80	\$5.00	\$5.20
*Complete.....	6.80	7.00	7.20	7.40
Length.....inches	18	24	30	36

### †With 3 Sets of Universal Joints for Adjustment



Showing No. 23 Shade

No.....	262	263	264
Bracket Only.....each	\$5.60	\$6.00	\$6.40
*Complete.....	7.80	8.20	8.60
Length.....inches	24	36	48

### †With 4 Sets of Universal Joints for Adjustment For Wall or Bench



No.....	266G	266H	266K	266L	266M
Bracket Only.....each	\$6.60	\$6.80	\$7.00	\$7.20	\$7.40
*Complete.....	8.80	9.00	9.20	9.40	9.60
Length.....inches	24	30	36	42	48

### †With Universal Joint at Base—Flexible End Arm For Wall or Bench



No.....	272E	272G	272H	272K
Bracket Only.....each	\$4.60	\$4.80	\$5.00	\$5.20
*Complete.....	6.80	7.00	7.20	7.40
Length.....inches	18	24	30	36

### General Information on Above Items

Fixtures are furnished complete unless otherwise specified. Portable wiring with 10-foot cord and plug instead of regular wiring furnished, if specified, at \$1.10 extra.

Standard finish, black.

Standard package, 12; can be assorted styles.

Lamp bulbs are not included in prices.

\*Complete fixture includes extras as follows: No. 28 shade (illustrated), \$.80; No. 16 bell-shaped shade, \$.80; brass or porcelain factory socket, \$.80; and wiring 16-inch out, \$.60.

†Clamp instead of flange will be furnished, if specified, at \$.90 extra.

## No. 1591 Faries Desk Lamps For 25 or 60-Watt Incandescent Lamps



For students.

Height overall, 22 1/2 inches. Extends 17 inches.

Shade diameter, 6 1/2 inches.

Has 11-inch flexible arm and iron base.

Finish: sprayed bronze.

No. 1591...each \$3.85

Lamp is not included in price.

## No. 153A Faries Desk Lamps For 25 to 60-Watt Incandescent Lamps



Height overall, 26 inches.

Extends 16 inches.

Has 9-inch flexible arm and a brass cover over iron base.

Furnished with slip-on adjustable metal shade.

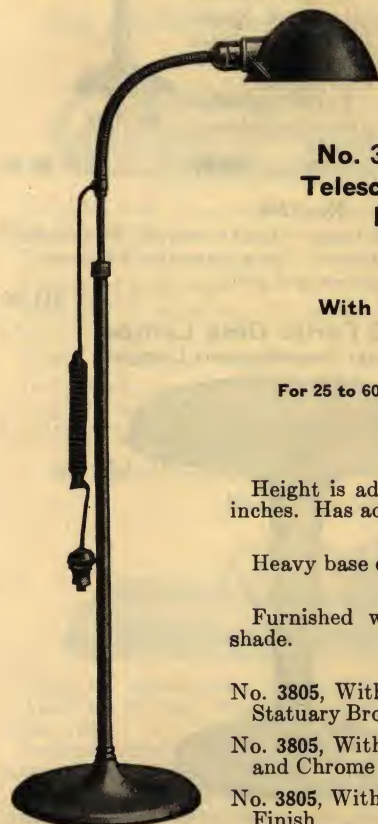
Finish: electroplated statuary bronze.

No. 153A.....each \$6.50  
Lamp is not included in price.

## No. 3805 Faries Telescoping Floor Lamps

### With Flexible Arm

For 25 to 60-Watt Incandescent Lamps



Height is adjustable from 34 to 60 inches. Has adjustable joint.

Heavy base diameter, 9 inches.

Furnished with adjustable metal shade.

No. 3805, With Electroplated Statuary Bronze Finish...ea. \$12.50

No. 3805, With White enamel and Chrome Finish....each 12.50

No. 3805, With All Chromium Finish.....each 15.00

Lamp is not included in price.



**No. 1989 Faries Desk Lamps**

For 100-Watt Incandescent Lamps



For stenographers.  
Swings right or left.  
Arm extends horizontally 16½ to 24½ inches.  
Height overall, 26½ inches.  
Bottom of shade to desk level, 18½ inches.  
Metal shade, 14 inches in diameter. Shade depth, 8 inches.  
Furnished with 8-inch inner reflector.  
Finish: Statuary bronze.

No. 1989.....each \$16.00  
Lamp is not included in price.

**Faries Desk Lamps**

For 100-Watt Incandescent Lamps



No. 2223

**No. 2223**

Height overall, 15½ inches. Shade, 12 inches in diameter. Base diameter 6½ inches.

Finish: electroplated statuary bronze.

No. 2223.....each \$9.50



No. 2242

**No. 2242**

Executive type desk lamp. Height overall, 17½ inches. Shade, 13 inches in diameter. Base diameter, 6 inches.

Finish: normandie bronze and gold.

No. 2242.....each \$14.50

**No. 60243 Faries Desk Lamps**

For 100-Watt Incandescent Lamps



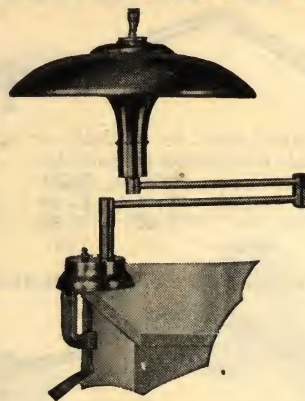
Directs 80 per cent of light on working area without glare.  
Height overall, 12¼ inches. Shade, 11 inches in diameter.  
Base diameter, 8 inches.

Finish: electroplated statuary bronze.

No. 60243.....each \$15.00

**No. 2207 Faries Desk Lamps**

For 100-Watt Incandescent Lamps



For stenographers and executives.  
Bulb is not visible from any position, no glare.  
Height overall, 17½ inches. Shade, 13 inches in diameter.  
Clamps opens to 2½ inches.  
Finish: normandie bronze and gold.

No. 2207.....each \$23.00  
Lamp is not included in price.

**Emeralite Plain Glass****Cone Shades**

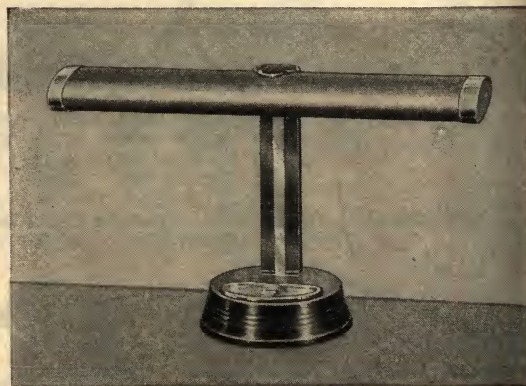
Green, White Lined



No.....	64	170
Each.....	\$2.00	4.00
Diam...in.	7	10
Depth...in.	5	5
Fitter...in.	2¼	2¼

**No. 20000 Faries Desk Lamps**

For One or Two 15-Watt, T-8, 18-Inch Fluorescent Lamps



Furnished with built-in ash tray, paper clip tray, or pencil rest; air flow type shade with baked enamel inner reflector, and manual type, self-starting switch.

Available for d.c. operation upon order.

Height overall, 12¼ inches. Base, 7¼ inches in diameter. Depth, 2 inches.

Finish: electroplated statuary bronze.

No. 20000, For One Fluorescent Lamp.....each \$19.50  
No. 20003, For Two Fluorescent Lamps.....each 24.50

Lamps are not included in prices.



## No. 1010 Mitchell Polaroid Fluorescent Desk Illuminators

For Two 15-Watt Fluorescent Lamps

110-125 Volts, 60 Cycles A.C.



Used in offices, banks, hotels, libraries, and all establishments where a glareless desk lighting is needed. Combines the use of fluorescent lighting with Polaroid glare-eliminating material.

Made of metal with Alzak aluminum parabolic reflector and pencil tray molded in base.

Polaroid filter is shatterproof. Equipped with switch at base and an 8-foot cord and plug. Dimensions: height, 12 $\frac{5}{8}$  inches; length, 18 $\frac{3}{8}$  inches; width, 10 $\frac{3}{4}$  inches.

Packed in individual container.

Shipping weight, 18 pounds.

No. 1010.....each 39.95

## No. 2050 Mitchell Desk Lamps

110-125 Volts, 60 Cycles A.C.



Stands 14 $\frac{1}{2}$  inches high. Shade, 18 inches long. Base, 10 inches long by 5 $\frac{1}{4}$  inches wide. Complete with cord and plug. Pen trough in base. Parabolic shaped chip-proof white enamel reflector. Morocco brown finish. Uses one No. T-8, 15-watt fluorescent bulb.

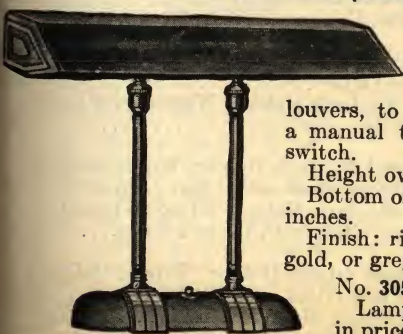
Packed individually. Shipping weight, 12 pounds.

No. 2050, Less Bulb.....each \$9.95

## No. 3054 Faries Desk Lamps

For One 15-Watt, T-8, 18-Inch Fluorescent Lamp

For A.C. or D.C. Operation



Furnished with built-in louvers, to direct light, and a manual type, self-starting switch.

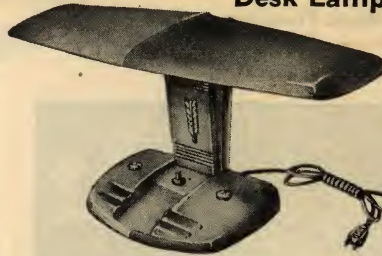
Height overall, 12 $\frac{1}{2}$  inches. Bottom of shade to desk, 10 inches.

Finish: rippled bronze and gold, or grey and chrome.

No. 3054.....each \$18.50

Lamp is not included in price.

## No. M-1000 Moe Brothers Fluorescent Desk Lamps



Used in offices, libraries, etc. For a.c. operation only.

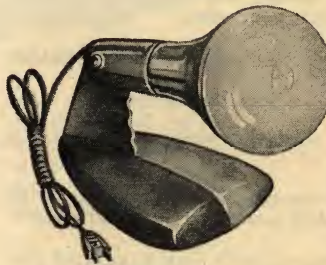
Gray or brown bonderized-baked finish with brass trim. Base ornaments are removable for pen holder fittings. Furnished with 6-foot cord and plug. Dimensions:

base, 1 $\frac{3}{4}$ x10x5 $\frac{3}{4}$  inches; reflector, 20 $\frac{1}{2}$ x4 $\frac{1}{8}$ x15 $\frac{1}{8}$  inches; overall height, 11 $\frac{1}{2}$  inches. Individually packed.

No. M-2000 (Holds Two 15-watt, T-12 Fluorescent Lamps).....each \$12.95

No. M-1000 (Holds One 15-Watt, T-12 Fluorescent Lamp).....each 10.95

## No. M-77 Moe Brothers Lamp Holders



An attractive, handy holder for all reflector type heat lamps, sun lamps, and spot lamps.

Adjusts to any position.

Furnished with 6-foot cord and plug.

Bonderized-baked finish in ivory or seafoam gray.

Base width, 4 $\frac{1}{2}$  inches, tapered.

Overall height, 4 $\frac{3}{8}$  inches.

Individually packed; 12 in a master carton.

No. M-77.....each \$2.95

## No. M-218 Moe Brothers Fluorescent Pin-Up Lamps



Provides soft, glareless illumination for many hard-to-light locations. For a.c. operation only.

Recommended wattage, one 15-watt T-12 fluorescent lamp.

Furnished with 6-foot cord and plug.

Finished in sparkling chromium or bonderized-baked white enamel.

Width, 1 $\frac{1}{2}$  inches. Length, 24 $\frac{3}{4}$  inches. Height, 2 inches.

Individually packed; 12 in a master carton.

No. M-218, White Finish.....each \$6.65

No. M-218, Chromium.....each 7.95

## No. M-418 Moe Brothers Fluorescent Bed Lamps



Fingertip adjustment. For a.c. operation only.

Available in ivory or brown bonderized-baked finish with brass trim.

Recommended wattage, one 15-watt T-12 fluorescent lamp.

Furnished with 6-foot cord and plug.

Length, 19 $\frac{1}{2}$  inches. Depth, extends 3 $\frac{1}{2}$  inches from wall. Back plate measures 8 $\frac{1}{2}$ x3 inches.

Individually packed.

No. M-418.....each \$10.95



**Smithcraft Kitchener Lighting Fixtures****For Two 20-Watt Fluorescent Lamps**

110-125 Volts, 60 Cycles, A.C.



Used in kitchens, bathrooms, bedrooms, playrooms, and corridors.

Polished fittings, graceful design, and glare-free lighting makes this unit ideal for other rooms also.

All parts are easily accessible.

Precision-made with all-riveted construction for greatest light output.

Starters are located at the ends of the channel.

**No. K-1.** Furnished with cord and plug and adapter to fasten to a 4-inch holder.

**No. K-2.** Furnished with canopy, fixture strap, and wire leads to fasten directly to outlet box. Carries Underwriters' Laboratories label.

Finished in white baked enamel with highly polished aluminum underside trim and end caps.

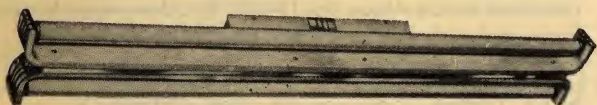
Packed 10 in a carton.

No. K-1.....each **\$9.85**  
No. K-2.....each **9.85**

**No. K2-40 Smithcraft Lighting Fixtures****For Two 40-Watt Fluorescent Lamps**

A.C.—For 110-220 Volts, 60 Cycles

Listed as Standard by Underwriters' Laboratories.



Precision made; ceiling mounted, or with single non-turn stem for pendant mounting.

Complete with high power factor tulamp ballasts and FS4 starters.

Finished with Supercoat white baked enamel and trimmed with aluminum polished ends and decorative strip.

Matching fixture to the No. K-1 and No. K-2 for two 20-watt lamps.

Packed 1 in a carton.

Shipping weight, 13 pounds.

No. K2-40. Flush Mounted, less Lamps.....each **\$23.95**  
No. SS102, Single 30-Inch Stem and Non-Turn Canopy Set for Pendant Mounting.....Each **3.35**

**No. M-1324 Moe Brothers Fluorescent Lighting Fixtures****Permanent Installation**

110-125 Volts, 60 Cycles, A.C.

Approved by Underwriters' Laboratories, Inc.



Recommended wattage, two 20-watt T-12 fluorescent lamps. Has low power factor ballasts.

Furnished with 6-inch ceiling fitter with strap and barrel nuts. Fitter is removable if flush mounting is preferred.

Removable end caps cover lamp ferrules.

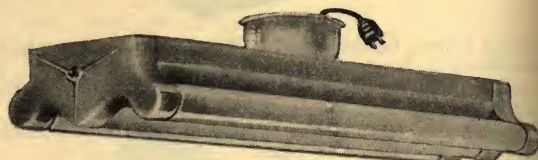
Bonderized-baked white enamel finish.

Individually packed.

No. M-1324.....each **\$9.75**

**No. M-1124 Moe Brothers Fluorescent Lighting Fixtures****Adapter Type**

110-125 Volts, 60 Cycles, A.C.



Recommended wattage, two 20-watt T-12 fluorescent lamps.

Has low power factor ballasts, and a 4-inch adapter which can be removed if permanent flush mounting is desired.

Removable end caps cover lamp ferrules.

Bonderized-baked white enamel finish.

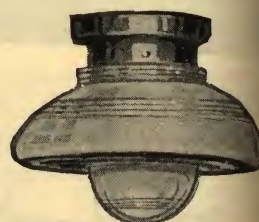
No. M-1124, Individually packed.....each **\$9.75**

**Moe Brothers Holders and Globes**

Nos. M-63 and M-73



No. M-64



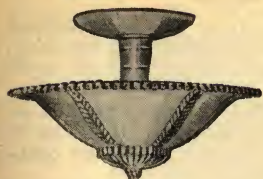
Nos. M-631 and M-641

No.	Description	No. in Case
M- 64	White Enamel 4-Inch Holder, Wired.....	48
M- 64	Chromium 4-Inch Holder, Wired.....	48
M- 63	White Enamel 3¼-Inch Holder, Wired.....	48
M- 63	Chromium 3¼-Inch Holder, Wired.....	48
M- 63	Copper 3¼-Inch Holder, Wired.....	48
M- 63	Black Enamel 3¼-Inch Holder, Wired.....	48
M- 73	White Enamel 3¼-Inch Holder, Wired, with Convenience Outlet.....	48
M- 73	Chromium 3¼-Inch Holder, Wired, with Convenience Outlet.....	48
M-631	White Enamel 3¼-Inch Holder, Wired; 8-Inch Diameter White Glass with Clear Louver.....	6
M-631	Chromium 3¼-Inch Holder, Wired; 8-Inch Diameter White Glass with Clear Louver.....	6
M-641	White Enamel 4-Inch Holder, Wired; 10-Inch Diameter White Glass with Clear Louver.....	6
M-641	Chromium 4-Inch Holder, Wired; 10-Inch Diameter White Glass with Clear Louver.....	6



## Moe Brothers Residential Incandescent Lighting Fixtures

No. M-201



Diameter, 11 inches. Length overall, 9½ inches. Recommended wattage, one 100-watt lamp.

Glass colors (fired): beige, rose, blue, green, and white; all with crystal trim. Canopy finish: ivory. Individually packed.

No. M-201.....each \$2.95

No. M-211



Diameter, 11 inches. Length overall, 9½ inches. Recommended wattage, one 100-watt lamp.

Glass colors (fired): clear crystal, beige, rose, and white. Canopy finish: ivory. Individually packed.

No. M-211.....each \$2.95

Nos. M-610 and M-612



No. M-610

Spread, 10 inches. Depth 4½ inches. Recommended wattage, two 60-watt lamps. White opal glass. Finish: chromium and red. Individually packed.

No. M-610.....each \$8.45

No. M-612

Spread, 12 inches. Depth 4½ inches. Recommended wattage, two 75-watt lamps. White opal glass. Finish: chromium and red. Individually packed.

No. M-612.....each \$9.95

Nos. M-710 and M-712



No. M-710

Spread, 10 inches. Depth 4½ inches. Recommended wattage, two 60-watt lamps. White opal glass. Finish: polished brass and red. Individually packed.

No. M-710.....each \$8.45

No. M-712

Spread, 12 inches. Depth 4½ inches. Recommended wattage, two 75-watt lamps. White opal glass. Finish: polished brass and red. Individually packed.

No. M-712.....each \$9.95

Nos. M-1013 and M-1016



No. M-1013

Diameter, 15 inches. Length overall, 36 inches. Screen design glass bowl with plastic spiral band. Recommended wattage, five 25-watt lamps. Finish: colonial brass. No. M-1013, Packed Individually. ea. \$15.95

No. M-1016

Diameter, 18½ inches. Length overall, 36 inches. Screen design glass bowl with plastic spiral band. Recommended wattage, five 40-watt lamps. Finish: colonial brass. No. M-1016, Packed Individually. ea. \$19.95

Nos. M-1023 and M-1028



No. M-1023

Diameter, 15 inches. Length overall, 7 inches. Screen design glass bowl with plastic spiral band. Recommended wattage, five 25-watt lamps. Finish: colonial brass. No. M-1023, Packed Individually. ea. \$14.95

No. M-1028

Diameter, 18½ inches. Length overall, 7 inches. Screen design glass bowl with plastic spiral band. Recommended wattage, five 40-watt lamps. Finish: colonial brass. No. M-1028, Packed Individually. ea. \$18.95

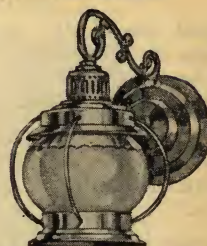
No. M-810



Spread, 10 inches. Depth, 3¾ inches. Recommended wattage, two 60-watt lamps. White opal glass. Made of copper. Finish: antique copper.

No. M-810, Packed Individually...ea. \$5.95

No. M-872



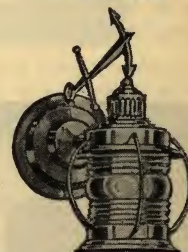
Extends 7 inches. Back plate, 4½ inches. Length overall, 9 inches. Clear glass shade.

Finishes: antique copper (made of copper and forged brass); black with brass trim (made of copper and forged brass).

Packed individually.

No. M-872.....each \$3.95

No. M-822



Extends 7 in. Back plate, 4½ in. Length overall, 10 in.

Finishes: antique copper (made of copper and forged brass); black with brass trim (made of copper and forged brass).

Packed individually.

No. M-822.....each \$3.95

Nos. M-406, M-408, M-410, and M-412



No. M-406

Spread, 6 inches. Recommended wattage, one 60-watt lamp.

White opal glass.

Finish: chromium.

Individually packed.

No. M-406.....each \$2.75

No. M-408

Spread, 9 inches. Recommended wattage, two 60-watt lamps.

White opal glass.

Finish: chromium.

Individually packed.

No. M-408.....each \$3.75

No. M-410

Spread, 11 inches. Recommended wattage, two 75-watt lamps.

White opal glass.

Finish: chromium.

Individually packed.

No. M-410.....each \$5.45

No. M-412

Spread, 13 inches. Recommended wattage, three 75-watt lamps. White opal glass.

Finish: chromium.

Individually packed.

No. M-412.....each \$6.55



## Graybar Silvray Lighting Fixtures

## Indirect Luminaires for Use with Silvered and Semi-Silvered Bowl Lamps

Designed specifically for use with lamps of the silvered or semi-silvered bowl types, which utilize the sealed beam principle.

Silvered bowl lamps eliminate the need for separate reflectors, and have a wide distribution characteristic.

The design is modern and graceful due to the narrow cross-section of all luminaires. This advantage in design is possible because the bowl of the lamp protrudes through the center of the fixture and is made part of the fixture design.

As a result, uniform ceiling brightness is obtained without spottiness or high brightness directly above the fixture.



Features simple relamping, inherent high lighting efficiency, and a light output as high as 90 per cent.

Efficiency is maintained as dust and accumulations in the fixture have no effect on the output of light.

Conversion rings are available to accommodate different sizes of silvered bowl lamps to be used in the same fixture without changing the fixture itself.

Made of heavy gage metal or of metal and plastic combinations and triple-plated over a base copper coat to maintain the permanence of the finish.

Specially prepared heat-resisting enamels are used on units other than those with metallic finishes.

Correctly designed baffles are used to provide complete shielding of the lamp neck.

## Commercial Line



No. 1500 ConEd

Embodies the concentric ring principle to provide effective lamp shielding and light output as high as 86.5 per cent. The vertical plane of rings permits reflected ceiling light to reach the work area.

Available in the three ring construction shown above for use with 300 and 500-watt lamps.

The same design, in two ring construction, is adapted for use with 200-watt lamps.

Also available with four ring construction for use with 750 and 1000-watt lamps.

Made of Steel, spot-welded for rigidity.

Body and canopy is finished in flat white enamel.

Husks are finished in aluminum.



No. 1500-S ConEd

Made of steel and spot-welded for rigidity.

Three concentric rings provide complete shielding of the lamp. Has totally direct illumination with a high light output of 86.5 per cent. No. 1500-S/2 has two concentric rings; No. 1500-S/10 has four concentric rings.

When a semi-silvered bowl is used, the wide cone of direct downward light builds up illumination of merchandise on counters, tables, and cases. Vertical plane of rings prevents collection of dust, insects, etc. Body and canopy are finished in flat white enamel and husks are finished in aluminum.

No. 1500-S is furnished with a stem suspension to permit its use in applications that are not suited to close-to-ceiling fixtures.

No.	1500-S/2	1500-S	1500-S/10
Each	\$23.40	26.20	53.40
Diameter.....inches	14	19	24
Length of Suspension..in.	26	38	44
*Lamp Size.....watts	200	300,500	750,1000

\*Silver bowl or semi-silvered bowl.

No.	1500	1500/2
Each	\$23.60	21.00
Diameter.....inches	19	14
Length Overall.....inches	14	12½
Lamp Size.....watts	300,500	200



## Graybar Silvray Lighting Fixtures Commercial Line

No. 207—Pinnacle



For areas such as accounting and clerical offices, and drafting and school rooms where the efficiency of the lighting system is the primary consideration. ETL output 91 per cent.

Made of triple-plated copperized, heavy gage steel.

Furnished with a deep canopy suited for use with levolver switch. Standard finish is French grey enamel with black beaded edge and chrome bulb ring.

No.	Each	Silvered Bowl Wattage	Suspension Length Inches	Diam. Inches
207	\$21.60	300 or 500	26	20
207-20	25.30	750 or 1000	36	20

No. 210—Plasticon



Modern lighting favors the use of translucent plastic because it combines the best features of glass and metal.

This unit furnishes totally indirect illumination but avoids the blind spot of opaque metal units.

Has an output of 89.5 per cent (E.T.L.).

The bowl is protected against warping or deterioration by a series of chrome-and-aluminum concentric rings which separate it from the lamp.

Deep canopy accommodates a pull switch.

Suspension finished in triple-plated cadmium.

No.	Each	Silvered Bowl Wattage	Suspension Length Inches	Diam. Inches
210PL	\$23.60	300 or 500	26	18
210PL	44.30	750 or 1000	36	25

No. 207PL—Liteking



A highly efficient indirect unit with a shallow bowl of modern plastic which is lighted to a pleasing intensity by the silvered bowl lamp with which it is designed to be used.

Output (E.T.L.) 89.5 per cent.

Shallow bowl lighted to a maximum brightness of only 0.3 per square inch.

Lamp neck is fully concealed by shield which rests on bowl supports.

Attractive, plated metal rings separate the bowl from the lamp. Relamps from below without the need to remove bowl or handle the fixture.

Furnished with deep canopy to accommodate switch.

No.	Each	Silvered Bowl Wattage	Suspension Length Inches	Diam. Inches
207PL	\$23.60	300 or 500	31	18

No. 208—Crusader



An all-metal indirect unit of high efficiency. The rolled-edge treatment of the triple-plated solid steel bowl is designed to create an appearance of dense glass.

Standard finish is oyster white enamel. Also available in metallic plated bronze or cadmium.

Chrome-plated bulb ring and deep canopy are standard.

Self-aligning swivel in stem assures straight hanging.

Special bayonet assembly permits quick attachment or removal of bowl from stem.

No.	Each	Silvered Bowl Wattage	Suspension Length Inches	Diam. Inches
208-I.B.T.	\$22.40	300 or 500	31	20







## Wakefield Screwless 1000 Line Hangers and Graybar Globes

Hangers and Globes Must Be Ordered Separately



No. 1060AT, Hanger Only  
No. 8820, Globe Only



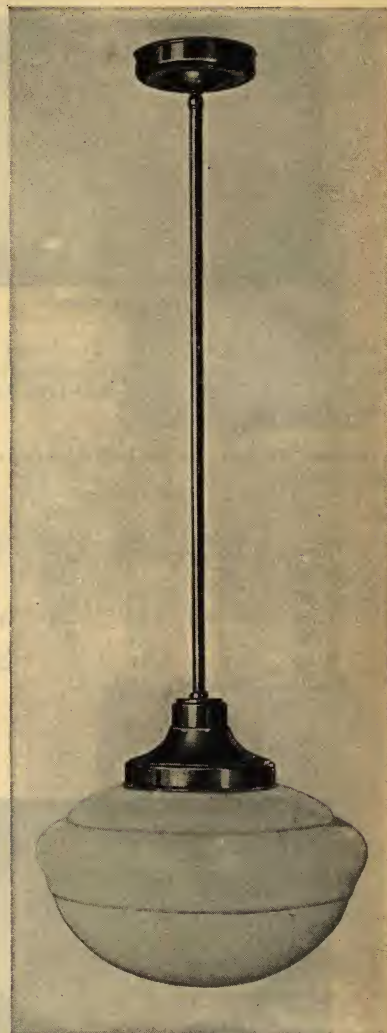
No. 1061AT, Hanger Only  
No. 6620, Globe Only

Hanger is made of heavy gage steel with plated statuary bronze finish.

Canopy measures 5 inches on hanger type and 6 inches on ceiling units.

Holder is screwless toggle type.

Hangers and globes must be ordered separately.



No. 1064AT, Hanger Only  
No. 9920, Globe Only

### Hangers

(Hangers Must Be Ordered Separately)

No.	Each	Recommended Wattage	Fitter Inches	Length Inches	Type of Socket	Description	Std. Pkg.	Wt., Lb. Std. Pkg.
1041AT	\$2.30	75-100	4	5 1/2	Medium	Ceiling Unit	12	16
1061AT	2.50	100-200	6	5 1/2	Medium	Ceiling Unit	12	18
1061BT	2.80	300	6	5 7/8	Mogul	Ceiling Unit	12	23
1040AT	3.10	75-100	4	24	Medium	Chain Suspension	12	18
1060AT	3.70	100-200	6	24	Medium	Chain Suspension	12	19
1060BT	4.00	300	6	24	Mogul	Chain Suspension	12	23
1044AT	4.90	75-100	4	24	Medium	Semi-Rigid	12	23
1064AT	5.20	100-200	6	24	Medium	Semi-Rigid	12	24
1064BT	5.50	300	6	24	Mogul	Semi-Rigid	12	28

### Graybar Opal Globes

(Globes Must Be Ordered Separately)

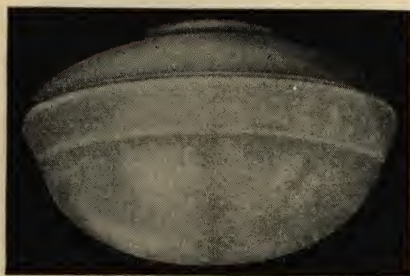
Diameter Inches	Series No. 66					Series No. 88					Series No. 99					Wattage	Std. Pkg.
	No.	Each	Fitter Inches	Depth Inches	Wt. Lb. Std. Pkg.	No.	Each	Fitter Inches	Depth Inches	Wt. Lb. Std. Pkg.	No.	Each	Fitter Inches	Depth Inches	Wt. Lb. Std. Pkg.		
9	6675	\$1.20	4	5	21	8875	\$1.20	4	6 1/2	24	9975	\$1.20	4	6 1/4	25	75	8
10	6680	1.80	4	6	28	8880	1.80	4	6 1/2	27	9980	1.80	4	6 1/2	29	75-100	8
12	6610	3.10	*4 or 6	7	16	8810	3.10	*4 or 6	8 3/8	17	9910	3.10	*4 or 6	7 3/4	19	100-150	4
14	6620	4.00	6	8 1/2	14	8820	4.00	6	8 7/8	10	9920	4.00	6	9	14	200	2
16	6630	5.90	6	9 1/4	19	8830	5.90	6	10 3/8	16	9930	5.90	6	10	17	200-300	2
18						8850	9.10	6 or 8	11	10	9950	9.10	6 or 8	12	20	500	1

\*The 4-inch size is standard; 6-inch size supplied on request only.  
Specify 6 or 8-inch size when ordering.



## Graybar Semi-Indirect Lighting Globes

## Series No. 33



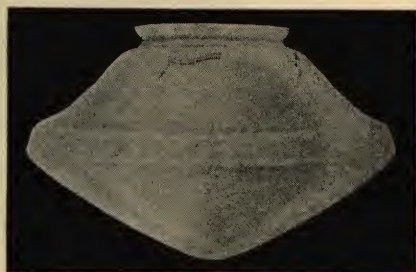
No. 3330, Plain

Made of clear crystal glass. The lower half is coated on the outside with a ceramic enamel which redirects the downward light. The upper half is etched on the inside for better diffusion.

Furnished in plain or in D-5 decorative styles; specify when ordering.

No.	Each	Fitter Inches	Diam. Inches	Depth Inches	Recommended Wattage	Estimated Std. Wt. Lb. Pkg. per Pkg.
3375	\$3.00	4	9	6 1/4	75	8 22
3380	3.40	4	10	6 1/2	75-100	8 27
3310	4.50	*4 or 6	12	7 3/4	100-150	4 20
3320	6.90	6	14	9	200	2 14
3330	8.60	6	16	10	200-300	2 18
3350	12.30	†6 or 8	18	12	500	1 13

## Series No. 77



Made of cased glass of dual opacity with light density top for diffusion and heavy density bottom for reflection. One-piece construction with two-layer diffusing alabaster top and three-layer alabaster reflecting bottom. Thus approximately two-thirds of the light is directed upward and softly diffused, without ceiling shadows, over a wide area. The remaining one-third downward transmitted light is of low brightness, free from glare.

Furnished in plain or in D-452 decorative styles; specify when ordering.

Also furnished with ground neck (neckless) for use with G type fixture only. When ordering, specify 1/2 after number—i.e., 7730 1/2.

No.	Each	Fitter Inches	Diam. Inches	Depth Inches	Recommended Wattage	Estimated Std. Wt. Lb. Pkg. per Pkg.
7775	\$3.30	4	9	6 1/2	75	8 24
7780	3.80	4	10	6 1/2	75-100	8 27
7710	5.00	*4 or 6	12	8 3/8	100-150	4 17
7720	7.60	6	14	8 7/8	200	2 10
7730	9.60	6	16	10 3/8	200-300	2 16
7750	13.70	†6 or 8	18	11	500	1 10

\*The 4-inch size is standard; 6-inch size supplied on request only. †Specify either 6 or 8-inch size when ordering.

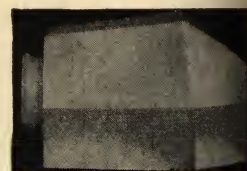
## Graybar Miscellaneous Glassware

These shades are designed for use with some of the wall brackets and ceiling fixtures. They also can be used as replacements with fixtures of other makes that have standard fittings.

Made of a single layer homogeneous opal white glass of density carefully selected for diffusing qualities. This glass is light in weight and warm in color providing a more refined appearance than ordinary white commercial glass.



No. G-42

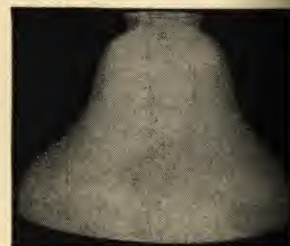


No. G-9504

No.	Each	Diam. In.	Depth In.	Fitter In.	Std. Pkg.	Ship. Wt. Lb. per Std. Pkg.
G-42	\$ .80	5 1/2	3 1/2	2 1/4	36	30
G-9504	.80	5	3 1/2	2 1/4	36	30



Nos. G-747 and G-975



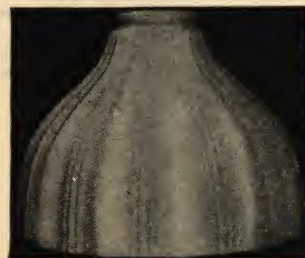
Nos. G-615, G-699, and G-700

G-747	\$ .54	4 3/4	4 5/8	2 1/4	24	32
G-975	.66	6 1/8	5	2 1/4	27	37
G-615	.66	6	4	2 1/4	36	29
G-699	.90	7	5	2 1/4	24	30
G-700	1.24	8	5	2 1/4	24	42



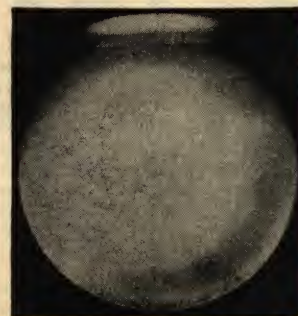
Nos. G-346, G-347, and G-348

No. ....	G-346	G-347	G-348
Each.....	\$ .88	1.24	1.40
Diam.....in.	7	7 1/2	9
Depth...in.	2 3/4	3 3/8	3 1/4
Fitter...in.	2 1/4	2 1/4	2 1/4
Std. Pkg...	24	24	24
Ship.Wt.lb.	33	33	34



Nos. G-340, G-341, and G-342

No. ....	G-340	G-341	G-342
Each.....	\$ .66	.88	1.24
Diam.....in.	6	7	8
Depth...in.	4 1/2	5 1/8	5 7/8
Fitter...in.	2 1/4	2 1/4	2 1/4
Std. Pkg...	24	24	24
Ship.Wt.lb.	27	33	33



Nos. G-608-6 and G-608-8

No. ....	G-608-6	G-608-8
Each.....	\$ .70	1.10
Diam.....in.	6	8
Depth...in.	6	8
Fitter...in.	3 1/4	4
Std. Pkg...	27	12
Ship. Wt. lb.	32	30



## Alabax Porcelain Lighting Fixtures

(Listed by the Underwriters' Laboratories)

Fixtures will not tarnish, rust, stain or change color. Easy to clean—soap and water restore original luster.

An unusual degree of protection is afforded because porcelain is a complete insulator.

Fixtures with pull control are protected against damage by a snub, which takes the strain of unusual or unnecessary

pulling or abuse. Chain or cord can be broken without damage to pull mechanism.

Supplied in white or ivory glaze. Colors in glazes cannot change. They are permanently fired in at a temperature of approximately 2300°F. Glaze becomes an integral part of fixture, and is not subject to peeling or color change.



No. AL-3130

Ht., 6¼ in.; width, 3½ in.

No. AL-3130. Keyless. No outlet; with glass.

White.....each \$5.28

No. AL-3131. Push. With outlet; with glass.

White.....each \$6.30

No. AL-3134. Keyless. No outlet; with glass.

Black.....each \$5.88



No. AL-3100

Length, 6¾ inches; width, 4 inches. With pull.

No. AL-3100. With outlet.

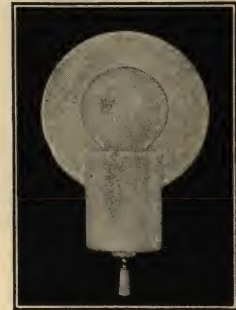
White.....each \$3.05

Color.....each 3.65

No. AL-3101. No outlet.

White.....each \$2.75

Color.....each 3.35



Length, 6¾ inches; width, 4¾ inches. With pull.

No. AL-2108. With outlet.

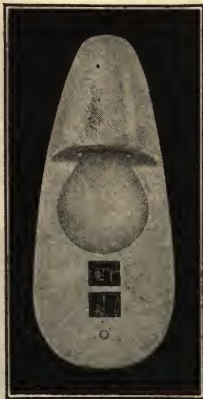
White.....each \$3.51

Color.....each 4.11

No. AL-2109. No outlet.

White.....each \$3.21

Color.....each 3.81



No. AL-2160. Keyless. Brown single pole switch P&S-1311. With T rating. Brown outlet with double contact, P&S-1320.

White.....each \$3.96

Color.....each 4.56



Diameter, 5⅝ inches. With convenience outlet and 2¼-inch shade holder; no glass.

No. AL-990. Pull.

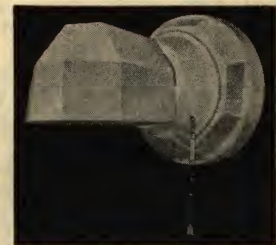
White.....each \$2.88

Color.....each 3.48

No. AL-980. Keyless.

White.....each \$2.58

Color.....each 3.18



No. AL-9234

Diameter, 5⅝ inches. With convenience outlet and glass.

No. AL-9234. Pull.

White.....each \$4.38

Color.....each 4.83

No. AL-9235 Keyless.

White.....each \$4.08

Color.....each 4.53



No. AL-2100 ND

Diameter, 4¾ inches. With glass.

No. AL-2100 ND. Pull. With outlet.

White.....each \$3.96

Color.....each 4.41

No. AL-2101 ND. Keyless. With outlet.

White.....each \$3.66

Color.....each 4.11



No. AL-2390

Length, 4⅝ inches; width, 4⅝ inches. With glass.

No. AL-2390. Pull. With outlet.

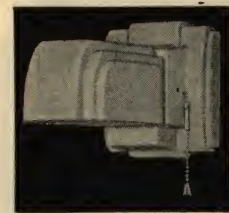
White.....each \$4.38

Color.....each 4.83

No. AL-2391. Pull. No outlet.

White.....each \$4.08

Color.....each 4.53



No. AL-2380

Length, 5 inches; width, 4½ inches. With convenience outlet and glass.

No. AL-2380. Pull.

White.....each \$4.38

Color.....each 4.83

No. AL-2382. Keyless.

White.....each \$4.08

Color.....each 4.53



## Alabax Porcelain Lighting Fixtures

Approved by Underwriters' Laboratories

**No. AL-2521**

Diameter, 5½ inches.

**No. AL-2521.** Keyless.

White.....each \$1.71

Color.....each 2.16

**No. AL-2521-P.** Pull; short chain and long cord.

White.....each \$1.98

Color.....each 2.43

**No. AL-3140.** Diameter

5½ inches. Keyless.

Ivory.....each \$1.62

White.....each 1.17

**No. AL-2007 ND****No. AL-2007 ND.** Pull,

with short chain, long cord.

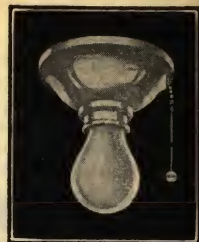
White.....each \$1.59

Color.....each 2.04

**No. AL-2011 ND.** Keyless.

White.....each \$1.41

Color.....each 1.86

**No. AL-859**

Diameter, 4½ inches.

**No. AL-859.** Pull, short chain and long cord.

White.....each \$2.52

**No. AL-898.** Keyless.

White.....each \$1.74

**No. AL-2401**

Diameter, 5½ inches.

**No. AL-2400.** Pull, with long cord, short chain.

White.....each \$1.71

Color.....each 2.16

**No. AL-2401.** Keyless.

White.....each \$1.53

Color.....each 1.98

**No. AL-2221.** Diam. 4

inches. Pull; short chain, long cord.

White.....each \$1.35

Color.....each 1.80

**No. AL-2260.** Diam. 4

inches. Keyless.

White.....each \$1.14

Color.....each 1.59

**No. AL-2222.** Diam. 4¾

in. Pull; short chain, long cord.

White.....each \$1.56

Color.....each 2.01

**No. AL-2259.** Diam. 4¾

in. Keyless.

White.....each \$1.35

Color.....each 1.80



Diameter of base, 5½ inches. Vapor proof.

**No. AL-2300.** With 5-inch CRI glass; for 25 to 75 watt lamps.

White.....each \$3.80

Color.....each 4.37

**No. AL-2303.** With 5-inch

opal glass; for 25 to 75 watt lamps.

White.....each \$3.80

Color.....each 4.37

**No. AL-2301.** With 6-inch

CRI glass; for 25 to 100 watt lamps.

White.....each \$4.17

Color.....each 4.75

**No. AL-2107**

Diameter, 5¼ inches.

**No. AL-2106.** Pull, with short chain and long cord.

White.....each \$1.80

Color.....each 2.25

**No. AL-2107.** Keyless.

White.....each \$1.62

Color.....each 2.07



Diameter, 5½ inches; keyless; 4-inch fitter.

**No. AL-2072.**

Ivory.....each \$2.77

**No. AL-2073.**

White.....each 1.98

**No. AL-2019**

Diameter, 5¾ inches. With 4-inch fitter.

**No. AL-2019.** Pull, with short chain, long cord.

White.....each \$2.37

Color.....each 2.97

**No. AL-2020.** Keyless.

White.....each \$2.19

Color.....each 2.79



Diameter, 5¼ inches.

**No. AL-2378.** With 9-inch plastic bowl. For 75 watt lamps.

White.....each \$4.50

Color.....each 4.95

**No. AL-2379.** With 12-inch plastic bowl. For 100 watt lamps.

White.....each \$5.40

Color.....each 5.95



Reflector and base cast integral.

Diameter of base, 5½ inches.

**Nos. AL-2030 and AL-2031**

Diameter of reflector, 6½ inches. White, 40 to 60 watt lamps.

Overall height, 4½ inches.

**No. AL-2030.** Keyless

.....each \$3.54

**No. AL-2031.** Pull

Switch.....each 5.43

**Nos. AL-2032 and AL-2033**

Diameter of reflector, 8 inches. White, 75 to 100 watt lamps.

Overall height, 6½ inches.

**No. AL-2032.** Keyless

.....each \$4.74

**No. AL-2033.** Pull

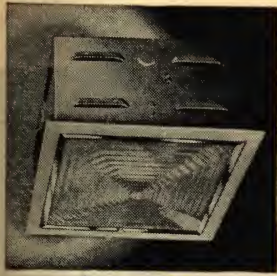
Switch.....each 6.72



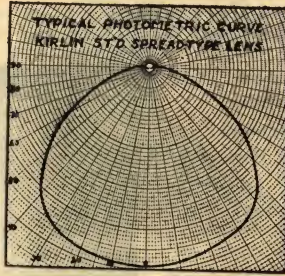
## Kirlin Recessed Lighting

Listed as Standard by Underwriters' Laboratories

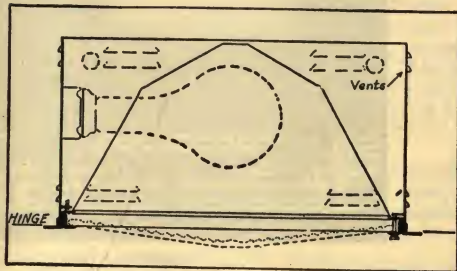
### Incandescent



Square Unit



Typical Wide Distribution



Cross Section of Square Unit

### Wide Distribution

Standard finish, satin stainless door, white ground-coat frame. All units have Underwriters' Laboratories and I.B. E.W. labels.

May be had with top of box removable for relamping from above ceiling, on special order.

No.	Each	Maximum Watts	SIZE CEILING OPENING, INCHES		
			Length	Width	Depth
1207	\$15.30	100	7 $\frac{3}{4}$	7 $\frac{3}{4}$	5 $\frac{1}{8}$
1208	18.20	150	9 $\frac{1}{4}$	9 $\frac{1}{4}$	5 $\frac{1}{2}$
1212	27.10	300 Med.	13 $\frac{1}{4}$	13 $\frac{1}{4}$	7 $\frac{5}{8}$
*1512	30.00	300 Med.	13 $\frac{1}{4}$	13 $\frac{1}{4}$	7 $\frac{5}{8}$
1218	77.30	500	19 $\frac{3}{8}$	19 $\frac{3}{8}$	13

\*Has clear center in lens.

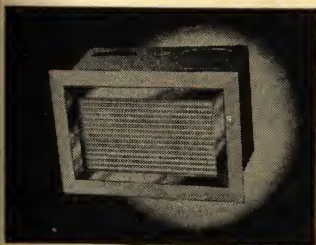
All units have Alzak polished reflector, hinged doors.

All units can be supplied with shock-proof glass on special order.

### Concentrating 30° Beam

No.	Each	Watts	SIZE CEILING OPENING, INCHES		
			Length	Width	Depth
1409	\$20.40	150	9 $\frac{1}{4}$	9 $\frac{1}{4}$	5 $\frac{1}{2}$
1412	29.60	300 Med.	13 $\frac{1}{4}$	13 $\frac{1}{4}$	7 $\frac{5}{8}$

### Rectangular Units



Albalite diffusing glass, Alzak reflector.

No. 508

Watts, 100. Length, 8 $\frac{1}{2}$  inches; width 5 $\frac{1}{2}$  inches; depth, 5 $\frac{1}{8}$  inches. No. 508....each \$13.90

No. 414

Watts, 40; uses T8 bulb. Length, 14 $\frac{1}{4}$  inches; width, 3 $\frac{3}{8}$  inches; depth, 4 inches. No. 414....each \$15.40

### Exits, Recessed Flush

Six-inch letters.

Box, width, 8 $\frac{3}{8}$  inches; length, 13 $\frac{1}{8}$  inches; depth, 3 $\frac{3}{8}$  inches.

"No-Guard" type hinged exit uses shock-proof glass for gymnasiums.

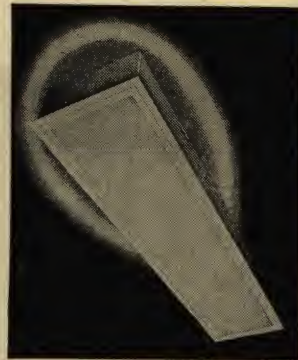
White letters, red background.

No. 4506.....each \$13.70

No. 4516 "No-Guard"...each 22.90



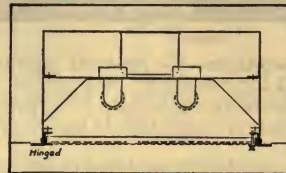
### Fluorescent



Hinged Door Type

All H.P.F. ballasts, finish white ground-coat. Hinges concealed. Wide distribution of light.

### Hinged Door and Open Troffer Types



Cross-Section of No. 240B

Frames arranged for single sections or continuous runs. If for runs specify length; small extra charge for runs, \$2.22 per section. Two-lamp units fit 12-inch acoustic tile ceilings. Albalite glass used.

Baked white reflectors standard.

Alzak GlasSurfaced reflectors may be supplied at extra cost.

Hinged Door		Open Troffer		SIZE FOR CEILING OPENING, IN.			
No.	Type	No.	Type	BULBS No.	Watts	Width	Length
220B	\$46.17	220TR	\$36.17	2	20	11 $\frac{3}{4}$	24 $\frac{1}{2}$
420B	72.66	420TR	53.53	4	20	16 $\frac{3}{8}$	24 $\frac{1}{2}$
230B	62.08	230TR	42.53	2	30	11 $\frac{3}{4}$	36 $\frac{1}{2}$
240B	59.12	240TR	39.78	2	40	11 $\frac{3}{4}$	48 $\frac{1}{2}$
440B	92.88	440TR	65.34	4	40	16 $\frac{3}{8}$	48 $\frac{1}{2}$



Snap-On Disc Louver



Snap-On Louver In Open Troffer

A full size louver, width, 4 $\frac{1}{4}$  inches. Discs may be interlocked on two lamp units. The original and highest efficiency louver. Lightweight, 48-inch louver 11 ounces. White baked enamel on spring steel.

Packed 24 of one size in a carton.

No.	Each	Size In.	Watts
60D	\$4.12	60	100
48D	2.22	48	40
36D	2.90	36	30
24D	1.53	24	20
18D	1.52	18	15



## Curtis Incandescent Recessed Lighting Units

Maximum allowable spacing for good general lighting is approximately one and one half times distance of unit to working plane for good distribution of light with units listed.

Concentrating reflector units, however, provide a spot-

light effect immediately under the unit and are not suitable for general lighting.

Satin Gray finish on louver and inside of housing. White Fluracite finish on hinged rims.

### Metal Housed Recessing Units

\*For General Lighting

Bears Underwriters' Recessing Label

Fitted with "X-Ray" silver mirror reflectors, for maximum efficiency, and a hinged rim which holds the louvers and cover glasses.

Can be permanently set into plaster ceilings without plaster rings, but plaster rings should be ordered separately where housing must be removable for access to wiring.

Shallow types have aluminum interior finish and two sockets arranged to hold lamps in a horizontal position.



Round

#### Large Round Deep Units—For 300-Watt Medium Base Lamps

Space required for recessing, 15 1/4 inches.

Dimensions: housing diameter, 14 1/2 inches; lens diameter, 14 inches; louver diameter, 14 inches; rim, 17 5/8 inches overall.

No. 2309, with Crackled Glass Lens Only.....each \$25.50

No. 2329, with Lens and Concentric Louver....each 29.60

If plaster ring is required, order No. 14038.

#### Large Round Shallow Units—For Two 150-Watt Lamps

Space required for recessing, 6 inches.

Dimensions: housing diameter, 14 1/2 inches; lens diameter, 14 inches; louver diameter, 14 inches; rim, 17 5/8 inches overall.

No. 2302, with Sanded Glass Lens Only.....each \$15.25

No. 2322, with Lens and Concentric Louver....each 20.85

If plaster ring is required, order No. 14038.

#### Small Round Deep Units—For 200 or 300-Watt Medium Base Lamp

Space required for recessing, 12 1/2 inches.

Dimensions: housing diameter, 11 3/8 inches; lens diameter, 10 inches; louver diameter, 10 inches; rim 12 5/8 inches overall.

\*No. 2306, with Sanded Glass Lens Only.....each \$17.75

\*No. 2315, with Concentric Louver Only.....each 20.65

\*No. 2326, with Lens and Concentric Louver....each 22.00

If plaster ring is required, order No. 14037.

\*If housed units are wanted with concentrating type reflectors, use the following Nos. in place of Nos. 2306, 2315, and 2326 respectively (available in small round deep housings only): No. 2304, each \$18.60; No. 2314, each \$20.65; No. 2324, each \$22.65.



Square

#### Small Round Shallow Units—For Two 100-Watt Lamps

Space required for recessing, 6 inches.

Dimensions: housing diameter, 11 3/8 inches; lens diameter, 10 inches; louver diameter, 10 inches; rim, 12 5/8 inches overall.

No. 2301, with Sanded Glass Lens Only.....each \$10.15

No. 2321, with Lens and Concentric Louver.....each 14.60

If plaster ring is required, order No. 14037.

#### Square Deep Units—For 200 or 300-Watt Medium Base Lamp

Space required for recessing, 13 1/4 inches.

Dimensions: housing, 10 7/8 inches; square; lens, 10 inches; square; louver, 10 inches, square; rim, 13 1/4 inches, square.

No. 2455, with Etched Glass Lens Only.....each \$24.10

No. 2495, with Lens and Pattern Louver.....each 27.65

#### Square Shallow Units—For Two 100-Watt Lamps

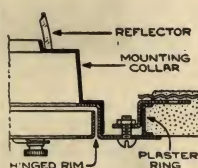
Space required for recessing, 6 inches.

Dimensions: housing, 10 7/8 inches, square; lens, 10 inches, square; louver, 10 inches, square; rim, 13 1/4 inches, square.

No. 2451, with Etched Glass Lens Only.....each \$16.90

No. 2491, with Lens and Pattern Louver.....each 20.60

If plaster ring is required, order No. 14042.



### Hinged Rim Recessing Units

Without Housing

Furnished with "X-Ray" reflector, holder socket and shell, mounting collar and hinged rim with cover glass, concentric louver, or guard.

Plaster ground rings are not furnished but should be ordered separately when units are to be set into a plaster ceiling. May be serviced either from above or below.

#### For General Lighting

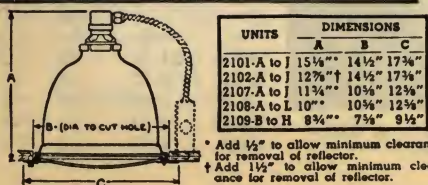
Wattage	With Lens Glass Only	With Lens and Louver	With Louver Only
300, 500	2101-A \$20.75	2102-F \$25.65	2102-H \$22.10
200, 300	2104-B 13.50	2104-F 17.75	2105-H 15.65
100	2109-B 9.40	2109-F 13.50	2109-H 12.40

#### Concentrating Units for Spotlighting Only

200 or 300	2106-A \$13.60	2106-F \$17.65	2106-H \$15.65
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#### Plaster Ring

No. 14038, For 14-Inch Size Units.....	each	\$1.10
No. 14035, For 10-Inch Size Units.....	each	.88
No. 14011, For 7-Inch Size Units.....	each	.83



\* Add 1/2" to allow minimum clearance for removal of reflector.  
† Add 1 1/2" to allow minimum clearance for removal of reflector.



## Curtis "X-Ray" Silver Mirror Show Window Reflectors

## Recessing

No. 420  
"Master" ModelNo. 500  
"King" Model

Made of crystal glass mirrored with pure silver.

**No. 420** is semi-concentrating for shallow windows using 100 or 150-watt incandescent lamp. Adjustable holder included. Louver No. 12420 (U-Type) is furnished at extra cost. Dimensions: diameter,  $8\frac{5}{8}$  inches; height with holder,  $7\frac{1}{16}$  inches.

**No. 500** is an angle type for deep windows using 150, 200, or 300-watt medium base incandescent lamp. Adjustable holder is included. Dimensions: width, 10 inches; depth, front to back,  $10\frac{1}{2}$  inches. Height with holder, 10 inches.

**No. 530** is semi-concentrating for shallow windows using 150, 200 or 300-watt medium base incandescent lamp. Adjustable holder is included. Louver No. 12531 (U-Type) is furnished at additional cost of \$4.25 each. Dimensions: diameter,  $9\frac{3}{4}$  inches. Height, with holder,  $9\frac{1}{16}$  inches.

**No. 1010** is semi-concentrating for very large windows using 300 or 500-watt mogul base incandescent lamp. Holder included is No. 10010,  $3\frac{3}{4}$ -inch which fits "X-Ray" mogul base sockets only. Socket No. 8300-B is included and has a  $\frac{1}{2}$ -inch back outlet. Dimensions: diameter, 13 inches. Height, with holder and socket,  $12\frac{3}{8}$  inches.

**Installation:** Nos. 420, 500, and 530 are usually installed on CurtiStrip using No. 5 socket or on outlet box by means of box cover receptacle unit; No. 1010 is installed directly on conduit or on a  $\frac{1}{2}$ -inch or  $\frac{3}{8}$ -inch nipple. May be recessed with finishing flanges.

Finishing Flange				Plaster Ring			
Reflector No.	Each	No.	Each	Width of Flange Inches	Plaster Ring Dimensions, INCHES	Min.	*X
420	\$4.35	10517	\$1.08	$10\frac{5}{8}$	14027	\$0.82	$10\frac{5}{8}$ 12 $\frac{3}{8}$
500	5.35	11500	3.25	12	.....	.....	.....
530	5.00	14026	1.58	$11\frac{3}{4}$	14028	.88	$11\frac{3}{4}$ 12 $\frac{3}{8}$
1010	11.00	14110	1.58	$15\frac{1}{2}$	14111	1.08	$15\frac{1}{2}$ 15 $\frac{7}{8}$

\*Dimension X is distance from front to back of plaster ring, measured on mounting screw hole-centers.

## Accessories

## Metal Shell Porcelain Sockets—Medium Base



## For Screw Engaging "X-Ray" Holders Only

No. 8251-S, With  $\frac{1}{2}$ -Inch Side Outlet.....each \$1.08

No. 8257-B, With  $\frac{1}{2}$ -Inch Back Outlet.....each 1.08

## With Groove for Clamping Type Holders

No. 8290-B, With  $\frac{1}{2}$ -Inch Back Outlet.....each \$1.08

No. 8291-S, With  $\frac{1}{2}$ -Inch Side Outlet.....each 1.08

## Box Cover Socket Units



## For Screw Engaging "X-Ray" Holders Only

No. 10145-B, For 3-Inch Outlet Box.....each \$4.47

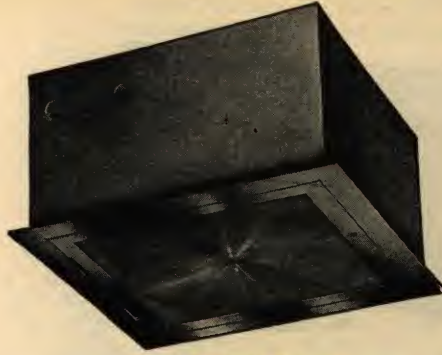
No. 10146-B, For 4-Inch Outlet Box.....each .50

## With Groove for Clamping Type Holders

No. 10160-B, For 3-Inch Outlet Box.....each \$4.47

No. 10161-B, For 4-Inch Outlet Box.....each .50

## Wheeler Flush Lighting Units



No. 1860, Single Gang Unit

Designed to set into ceiling or wall so that front will be flush with finished plaster. Box portion is equipped with adjustable flanges on outside so that box can be fastened into position during construction of building before it is

plastered. Each box is equipped with compartment in which all wiring can be done.

Door and trim constructed of 12-gage steel.

Door is cut out to take standard size lens and is provided with a means of holding lens in place.

Boxes and trims finished aluminum bronze inside and out.

Box portion is constructed of 16-gage steel welded together at corners.

No.	Each	Lamp Position	Lamp Watts	Lens Size In.	Trim In.	Box, INCHES	Width	Depth
1860	\$23.00	Vertical	25-60	$6\frac{1}{2}$	$9\frac{3}{4}$	$8\frac{1}{2}$	8	
1861	17.00	Horizontal	25-60	$6\frac{1}{2}$	$9\frac{3}{4}$	$8\frac{1}{2}$	$4\frac{1}{2}$	
1862	24.00	Vertical	75-150	$8\frac{1}{2}$	12	$10\frac{1}{2}$	$11\frac{1}{2}$	
1863	20.00	Horizontal	75-150	$8\frac{1}{2}$	12	$10\frac{1}{2}$	$5\frac{1}{2}$	
1864	31.00	Vertical	200-300	12	$15\frac{1}{2}$	$14\frac{1}{4}$	13	
1865	27.00	Horizontal	200-300	12	$15\frac{1}{2}$	$14\frac{1}{4}$	8	

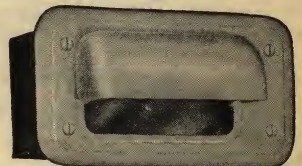
If lens is required for greater diffusion, suffix No. with letters VFD and add \$1.00 to price.

Special chromium-plated reflector for use in any of above boxes, \$5.00 extra for  $6\frac{1}{2}$  and  $8\frac{1}{2}$ -inch sizes; \$7.00 for 12-inch size. Wire guard for 12-inch plate only, \$3.00 extra.

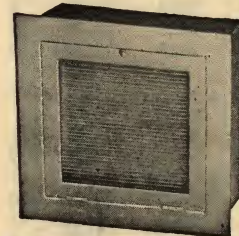
## Wheeler Hospital Night Lights



No. 1877 Louver Type



No. 1878 Visor Type



No. 1879 Lens-In-Door Type

**Louver type night light** is usually mounted eighteen inches or two feet above the floor. Louvers obstruct the light from shining in patients eyes. Box is 14 gage steel finished aluminum bronze inside and out. Face plate is cast aluminum finished in baked white enamel. A clear glass panel behind the louvers prevents dust from collecting in the box.

**Visor type night light** furnishes direct or indirect light over the bed or table in sick rooms. Visor swings up or down. Box is made of 14 gage steel painted aluminum bronze inside and out. Face plate is cast aluminum and is equipped with a clear glass panel over which visor swings. Face plate and visor are finished in baked white enamel.

**Lens-in-door type** is a corridor night light designed to set flush with the finished wall. Usually installed about two feet above the floor. Box is 16 gage steel finished aluminum bronze inside and out. Front consists of door and trim of 12 gage steel finished in baked white enamel. Lens is a diffusing type.

Cat. No.	Each	Watts	FACE OR TRIM (INCHES)	BOX DIMENSIONS, INCHES	Lght	Width	Depth.
1877	\$5.00	25-40	$6\frac{3}{4} \times 3\frac{3}{4}$	6	3	$3\frac{1}{4}$	
*1878	7.00	25-40	$6\frac{3}{4} \times 3\frac{3}{4}$	6	3	$3\frac{1}{4}$	
1879	15.00	25-100	$9\frac{3}{4} \times 9\frac{3}{4}$	$8\frac{1}{2}$	$8\frac{1}{2}$	$3\frac{1}{4}$	

\*Can be furnished with toggle switch at an increase of \$2.00.



## Wheeler Exit Signs



No. 2331-SHF

Wheeler exit signs are attractive in appearance, and fully meet the requirements of the most modern theatres, auditoriums and public buildings. They are available in a variety of designs, single-faced, double-faced and tri-angular, with five, six or eight-inch letters to comply with state laws.

All Wheeler exit signs are made of heavy gage sheet iron, finished aluminum bronze inside and dark bronze outside; signs can be finished outside in any color to match woodwork or wall finish, if desired and so specified on order. Prices on application.

All exit signs are supplied with two receptacles, unwired, for use with 25-40 watt lamps.

**Wheeler stenciled exit signs** are most attractive and efficient. The letters are stenciled Old Roman and are backed with imported ruby glass, which is sandblasted on the back to give even, diffused light. When the sign is lighted, only the red letters "Exit" can be seen, with no undesirable light around the letters.

**Flush type exit signs** with hinged fronts are heavier and more rugged than the standard signs. Hinged door permits quick and easy access to lamps and sockets.

**Triangular exit signs** are supplied with the word "Exit" on two sides. This type of sign is used in corridors and can be seen from either end of the corridor.

## Standard Single-Faced Exit Signs

## Stenciled Letters Backed with Imported Ruby Glass

Height Letter Inches	Box, INCHES		Surface Type		Depth Box In.	Flush Type		Depth Box In.
	Lgth.	Ht.	No.	Each		No.	Each	
5	14	7	2330	\$7.60	3	2331	\$8.20	4
6	14	8	2334	10.75	3	2333	11.20	4
8	14	10	2336	13.25	3	2335	13.50	4

## White Opal Letters on Painted Red Background

Height Letter Inches	Box, INCHES		Surface Type		Depth Box In.	Flush Type		Depth Box In.
	Lgth.	Ht.	No.	Each		No.	Each	
5	14	7	2315	\$8.70	3	2322	\$9.30	4
6	14	8	2316	9.50	3	2323	10.10	4
8	14	10	2317	10.30	3	2324	11.40	4

## Flush Type Exit Signs with Hinged Steel Fronts

Height Letter Inches	Box, INCHES		Stenciled Ltrs. Backed with Ruby Glass		White Opal Ltrs. on Painted Red Background	
	Lgth.	Ht.	No.	Each	No.	Each
5	14	7	2331-SHF	\$14.20	2322-SHF	\$15.30
6	14	8	2333-SHF	17.20	2323-SHF	16.10
8	14	10	2335-SHF	19.50	2324-SHF	17.40

## Triangular Exit Signs (Surface Type)

Height Letter Inches	Box, INCHES		Stenciled Ltrs. Backed with Ruby Glass		White Opal Ltrs. on Painted Red Background	
	Lgth.	Ht.	No.	Each	No.	Each
5	14½	7	2346	\$18.80	2355	\$21.00
6	14½	8	2347	27.55	2356	22.50
8	14½	10	2348	32.05	2357	23.50

## Kliegl Disappearing Type Footlights

When not in use, this type is closed down flush with stage floor. Wired for three colors. Automatic mercury on and off circuit switches. Solid kiln-dried oak flooring. Malleable iron cross brackets, positive latches. Terminal blocks for feeder connections.

Furnished in standard five-foot lengths. Completely assembled.

## No. 829 Open Trough Style



For use with colored lamps.

With continuous reflector, sprayed white.

Single row receptacles, continuous flooring, 5-foot sections, 15 outlets, 60-100 watts.

No. 829.....each \$55.00

## No. 832 Individual Reflector Style



For use with clear or inside frosted lamps.

Has single row Alzak aluminum reflectors and glass color-roundels.

Hinged mounting, continuous flooring, 5-foot section, 12 outlets, 100 watts.

No. 832.....each \$72.00

## No. 610 Kliegl Individual Reflector and Roundel Borderlights

Wired as specified, for three or more colors. Furnished with splice box, scenery guards, and chain hangers.

Any continuous length, or in sections.



For clear or inside frosted lamps. Alzak aluminum individual reflectors. Heat-resisting glass color roundels, hinged-ring roundel holders. Porcelain screw-base receptacles, 100 or 150-watt outlets as specified, 6 inches on centers.

No. 610.....per foot \$13.00

## Kliegl Stage-Floor Type Pockets



No. 354

Set in floor flush with surface. Has hinged self-closing cover notched for passage of cable. Fitted with heavy duty plug outlets.

Listed by Underwriters' Laboratories.

Furnished complete with two-wire plugs.

## 250 Volts

No.	Each	No. of 2-Wire Outlets	Amperes per Outlet	No.	Each	No. of Amperes 2-Wire Outlets	per Outlet
351	\$12.00	1	50	*355	\$14.00	1	30
352	22.00	2	1-25, 1-50	*356	26.00	2	30
353	32.00	3	25	*357	38.00	3	30
354	42.00	4	25	*358	50.00	4	30
1350	42.00	1	100	...	.....	..	..

\*Each plug and receptacle with separate ground leg.



## Kliegl Wall Type Pockets



No. 311



No. 319

Heavy duty plug outlets for use wherever heavy current temporary connections are required—in theatres, projection booths, photographic studios, hotels, schools, industrial plants, etc. Listed by Underwriters' Laboratories.

Furnished complete with two-wire plugs.

### 250 Volts

#### Flush Wall Mounting

No.	Each	No. of 2-Wire Outlets	Amperes per Outlet	No.	Each	No. of 2-Wire Outlets	Amperes per Outlet
310	\$11.00	1	50	*361	\$13.00	1	30
311	18.00	2	50	*362	22.00	2	30
312	26.00	3	50	*363	32.00	3	30
313	34.00	4	50	*364	42.00	4	30

#### Surface Wall Mounting

307	\$8.80	1	50	*366	\$11.00	1	30
317	16.00	2	50	*367	20.00	2	30
318	23.50	3	50	*368	30.00	3	30
319	31.00	4	50	*369	39.00	4	30

\*Each plug and receptacle with separate ground leg.

## Kliegl Portable Plugging Boxes



No. 400

For conveniently and quickly connecting several circuits to single outlet. Plug receptacles mounted in fireproofed case. Each receptacle independently fused. Feeder cable enters through special clamp.

Made to withstand rough usage.

Furnished complete with plugs.

Furnished with cartridge fuses, unless otherwise ordered. Other arrangements for heavier current demands available.

2-Wire Outlets Amperes	2-Wire Main		3-Wire Main	
	No.	Each	No.	Each
6-30	400	\$37.00	402	\$39.00
12-30	401	69.00	403	71.00
4-50	404	42.00	405	44.00
6-50	406	57.00	407	59.00

## Kliegl Aisle, Step, and Corridor Lights

Casts subdued light downward on steps and aiseways, or diffused light in corridors.

### No. 675 Aisle Spot Lights

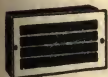


For mounting on side of end seats adjoining aisleway. Cast aluminum housing with control lens and receptacle for 10-watt, S14 lamp.

Width, 3 inches; height, 6 inches; and depth, 2 3/4 inches.

No. 675.....each \$4.50

### No. 2677 Step Lights



For stairways, mounted flush in riser. Louvered openings direct light to tread. Removable cast aluminum front.

For 40-watt, medium screw-base lamp.

Width, 8 inches; height, 4 1/8 inches; and depth, 3 1/2 inches.

No. 2677.....each \$5.00

### No. 2666 Aisle Lights



For flush wall mounting. Louvered front directs light to floor. Front is removable.

For 40-watt, medium screw-base lamp.

Width, 4 7/8 inches; height, 8 1/4 inches; and depth, 3 1/2 inches.

No. 2666.....each \$5.00

### No. 2681 Corridor Lights



For flush wall mounting.

Cast bronze, removable front, wire-glass face.

For 40-watt, medium screw-base lamp.

Width, 4 1/8 inches; height, 8 inches; and depth, 3 1/2 inches.

No. 2681.....each \$8.00

## Kliegl Lighting Fixtures

Prices given below do not include lamps

### Recessed Fresnel-Lens Ceiling Units

Flush inbuilt type which provides high intensity direct illumination. Accommodates standard screw-base general service incandescent filament lamps. Furnished complete with back box, mounting arrangements, wired porcelain receptacle, Alzak aluminum reflector, Fresnel lens with painted risers, and hinged front frame.



No. 22F12

#### Circular Lens Types

Fitted with circular Fresnel lens of listed diameter. Circular front frame. Cylindrical back box. Plaster rings.

No. 22F06, 100 Watts, 6-Inch Diam. Lens.....each	\$18.00
No. 22F08, 150 Watts, 8-Inch Diam. Lens.....each	22.00
No. 22F12, 200-300 Watts, 12-Inch Diam. Lens.....each	30.00
No. 22F14, 300-500 Watts, 14-Inch Diam. Lens.....each	40.00
No. 22F16, 500-750 Watts, 16-Inch Diam. Lens.....each	50.00



No. 24F12

#### Square Lens Types

Fitted with square shaped Fresnel lens of indicated size. Square hinged front frame. Rectilinear back box.

No. 24F06, 100 Watts, 6-Inch Square Lens.....each	\$22.00
No. 24F08, 150 Watts, 8-Inch Square Lens.....each	26.00
No. 24F12, 200-300 Watts, 12-Inch Square Lens.....each	30.00

### Downlights—Concealed Ceiling Units

Provides high intensity direct illumination. Projects light beam through small hole in ceiling.



No. 2503

#### Fixed Beam Types—Relamped from Above

For general lighting. Gives soft edge beam. Uses standard service lamps. Furnished with ellipsoidal reflector and fixed-focus lens system.

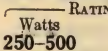
No. 2501, 150-Watt, Medium Screw Base.....each	\$38.00
No. 2503, 200-300-Watt, Medium Screw Base.....each	48.00
No. 2504, 300-500-Watt, Mogul Screw Base.....each	66.00
No. 2505, 750-1000-Watt, Medium Bipost.....each	82.50

#### Adjustable Beam Types—Relamped from Above

For defined lighting and general illumination, either straight down or approximately 45° angular projection.

Sharp or soft edge cut-off. Shape and size of beam can be regulated. Has focusable lens, adjustable framing shutters,

and reflector. Uses concentrated filament type lamps.



No. 2164



No. 2165

Watts	RATING	Volts	No.	*Each	Projection
250-500		115	2164	\$40.00	Straight Down
1000		115	2166	68.00	Straight Down
1500-2000		115	2168	83.00	Straight Down
250-500		115	2165	46.00	Angular
1000		115	2167	72.00	Angular
1500-2000		115	2169	88.00	Angular

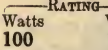
\*For relamping from below, add \$6.00 for straight down and \$8.00 for angular projection units.

#### Pin-Hole Spot Units—Relamped from Below

Furnished with plaster ring, removable aperture plate, and spherical reflector.

Approved by Underwriters' Laboratories, Inc.

Can also be furnished for top relamping.



No. 2145

Watts	RATING	Volts	No.	Each	Projection
100		115	2145	\$36.00	Straight Down
100		115	2146	38.00	Angular



No. 276AA

## Kliegl Picture and Poster Lights

Fitted with objective lens system and adjustable framing shutters, permitting confinement of light within picture area.

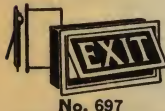
No. 276, For 75 or 100-Watt G16 1/2 D.C. Bayonet Base Lamp.....each	\$24.00
No. 276AA, For 100-Watt P25, 250-400-Watt G30 Medium Screw-Base Lamp.....each	30.00



## Kliegl Illuminated Exit Signs

For general safety requirements in places of assembly. Made in a variety of standard designs, well lighted, legible, and attractive. Meet all code requirements.

### Flush Types



Recessed in wall, flush with surface.

Wall box and front frame furnished as separable parts.

### Hinged Style Front

Detachable, hinged, sheet metal frame for holding glass insert.

Ruby glass face plate. Plain white letters.  
Sprayed bronze finish.

No.	Each	Ht. of Letters Inches	Front Frame Size, In.	—BACK BOX, INCHES— Size Depth	
6945	\$6.60	5	12½x 8	11½x 7	3½
6946	8.00	6	15 x 9	14½x 8	3½
6948	9.50	8	17 x 11½	15½x 10½	3½

### Pivoted Style Front

Removable cast-bronze frame with swinging panel for holding glass insert.

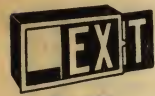
Ruby glass face plate. Fancy white letters.  
Statuary bronze finish.

No.	Each	Ht. of Letters Inches	Front Frame Size, In.	—BACK BOX, INCHES— Size Depth	
696	\$18.00	3	14¼x 7	13 x 6	3½
697	20.00	4	15¼x 9	14¼x 7½	3½
699	28.00	6	17½x 10½	16½x 9½	3½
698	35.00	8	18 x 12½	16¾x 11½	3½
*697W	23.00	4	15¼x 9	14¼x 7½	3½

\*Equipped with wire guard for protection of glass face plate.

Pigtail wired socket installed, \$1.00 each additional.

### Surface Types



No. 685

Mounted on surface of wall, or semi-recessed, allowing ½-inch projection for removal of glass panel. Glass slides in from side. Single face signs with gold finish metal box. Ruby glass face plate, white letters. Depth, 3½ inches.

Double face signs are also available.

No.	Each	Size Letters, inches	Size Box, inches
680	\$4.00	3	10x5
685	4.50	5	11½x6¾
686	5.00	6	14x8
687	5.00	8	12x10
690	5.50	8	15¾x10

Pigtail wired socket installed, \$1.00 each additional.



No. 711

### No. 711A Outlet Box Types

Made for attachment to standard octagonal 4-inch outlet box in wall.

Includes base plate, medium screw receptacle socket, and red lens with opaque letters.

Finished in brushed brass or statuary bronze.

Has 5-inch diameter; with 2-inch letters on front.

No. 711A.....each \$5.50

## Kliegl Floodlights

### Stage Units

Used from side wings or from overhead on the stage. Provided with slide grooves on front for color frames with gelatine mediums. For P. S. lamps.

### No. 1N Standing Types

Open-box reflector sprayed white; grooves for color frame. Pedestal floor stand, 25-foot cable. For 500-1500 watts.

No. 1N.....each \$31.00

### No. 2N Standing Types

Parabolic boxed Alzak aluminum reflector; grooves for color frame. Pedestal floor stand, 25-foot cable. For 500-1500 watts.

No. 2N.....each \$42.00

### No. 540 Hanging Types

Open-box reflector sprayed white; chain hangers; asbestos leads; grooves for color frame. For 500 watts.

No. 540.....each \$17.00

### No. 546 Hanging Types

Parabolic boxed Alzak aluminum reflector; grooves for color frames; asbestos leads; pipe clamp hanger. For 500 watts.

No. 546.....each \$26.00



No. 546

## Kliegl Color Gelatines

Furnished in all standard colors.  
Conventional Gelatine, 20x24-In. Sheets.....per sheet \$1.16  
Heat and Moisture-Proof Gelatine,  
20x22-In. Sheets.....per sheet .40

## Kliegl Color Wheels

### Hand Operated

No.	Each	Diam. In.	Colors	For Spotlights, Lens Size Inches
14	\$3.50	13½	5	4½
22	6.00	18	5	5 or 6
24	8.60	20	7	5 or 6
23	11.00	24	5	8



No. 22

### Motor Operated

Furnished with a.c. motors, 60 cycles, 115 volts.

No.	Each	Diam. In.	Colors	For Spotlights, Lens Size Inches
14AC	\$17.00	15½	6	4½
31AC	32.00	20	6	5 or 6
35AC	38.00	24	5	8

Can also be furnished with d.c. motors. Prices upon application.

## Kliegl Dimmers



No. 1237

Round plate, resistance type dimmers for flat mounting on wall or similar surface. For general use and serviceable for continuous duty at their rated capacity.

Not adaptable for interlocking in color groups.

No.	Each	Watts Min. Max.	No. of Plates	Plate Size, In.	No.	Each	Watts Min. Max.	Plate Size, In.
1229	\$16.90	60 150	1	8	1237	\$26.00	1005 1350	1
1230	16.90	155 250	1	8	1238	35.10	1355 1650	1
1231	16.90	255 400	1	8	1239	36.40	1655 2000	1
1233	18.20	405 550	1	8	1240	42.90	2005 2450	1
1234	20.80	555 650	1	8	1241	52.00	2455 2700	1
1235	23.40	655 750	1	13	1242	54.60	2705 3000	1
1236	23.40	755 1000	1	13	.....	.....	.....	.....

## Kliegl Carbon-Arc Spotlights

### General Service Types



No. 11

Standard designs with plano-convex condensing lens. Hand-feed arc spots.

Provided with external focusing and arc feed control. Hand grip for directional movement. Arc ballast resistance on stand. Enclosed line switch. Cable, 25 feet.

No.	Each	9	10	11	18
.....	\$125.00	160.00	195.00	210.00	.....
Rating, amps.	35	50	70	70	.....
Lens Diam., in.	6	6	6	8	.....

### All-Duty Booth Types

High powered, long-range arc spotlights fully equipped with boomerang for rapid color changes.

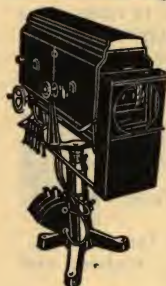
No. 1695 is a 100-ampere hand feed arc spotlight. Working range, 100 to 150 feet; 8-inch condensing lens. Five color frames in color box on front. Mounted on tubular-steel side-bracket on heavy cast iron base. Asbestos leads and line switch.

No. 1695.....each \$850.00

No. 1701 is a 140-ampere automatic and hand feed arc spotlight. Working range, 100-200 feet; 10-inch condensing lens. Has 6 removable color frames in boomerang in front of spot, keyed color levers on side. Built-in iris and curtain shutters. Movable arc carriage with focusing control hand wheel and position indicator. Motor driven mechanism for automatic arc regulation interconnected with hand controls. Balanced and supported in yoke on massive base. Complete with leads and booster switch.

No. 1701.....each \$1400.00

NOTE. Resistance for connection in series with all-duty arc spots not included in prices listed. When ordered, they are supplied as separate units, without cable, for mounting at some out of the way location.



No. 1701







### HUB Borderlights Individual Reflector Type



No. 21625

Available in any specified length with individual LUME-CROME Reflectors fitted with clear and natural colored convex heat-resisting glass roundels—hinged retaining rings accommodate either roundels or metal frames for gelatin.

Chain hangers. Heavy wire scenery guards. Splice-box with terminal block.

Wired for three or more colors and additional circuits as required for work-lights, spotlights, etc.

No.	21623	21625	21830	21235
Per Foot.....	\$16.90	6.90	9.50	20.80
Outlet Wattage.....	100	150	200	300-500
Ctr. to Ctr. Min. Outlet Spacing.....inches	6	6	8	12
Face.....inches	7 1/4	7 1/4	9 1/4	14 1/4
Height.....inches	8 1/2	9 5/8	11 1/4	15 1/2

#### No. 526 Worklight Receptacles

Special outlet in top of borderlight to connect spotlights, worklights, etc.

No. 526.....each \$9.00

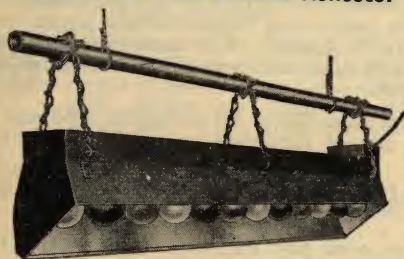
#### Upper Worklight Units

Consists of reflector, glass roundel, retaining ring, attachment clamp, cable and plug to fit No. 526 receptacle.

No. WL-1625, With 100 or 150-Watt Reflector...each \$14.30

No. WL-1830, With 200-Watt Reflector.....each 16.25

### Type A With Continuous Reflector



No. 20804-L

For colored-bulb lamps up to 100 watts. Equipped with chain hangers and splice box for feed cables. Width, 5 1/2 inches; height, 8 1/2 inches; length as required.

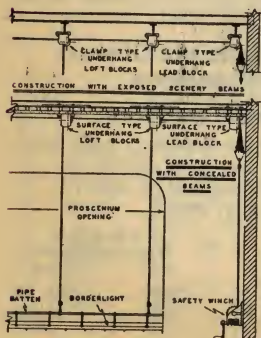
#### Matte White or Lustralume Aluminum Lacquer Reflecting Surface

No.	20804P	20806P	20808P
Per Foot.....	\$7.80	7.50	7.15
Ctr. to Ctr. Min. Outlet Spacing in.	4	6	8

#### Lume-Chrome or Alzak Aluminum Reflector Lining

No.	20804L	20806L	20808L
Per Foot.....	\$9.75	9.40	9.10
Ctr. to Ctr. Min. Outlet Spacing in.	4	6	8

### HUB Winch Rigging

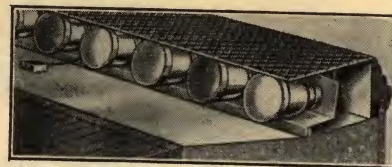


For raising or lowering border lights. Consists of wire cables running over ceiling blocks to a winch. Ceiling blocks and winches are furnished in varying capacities according to load.

When ordering, specify type of ceiling (exposed or concealed beams), dimensions of stage, including height and length, and type and weight of border-lights.

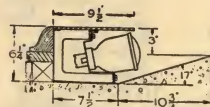
No. of Lines in Set	Max. Proscenium Opening, Feet
2	20
3	35
4	45

### HUB Permanent Semi-Flush Footlights



No. 63520

#### Saffred Type

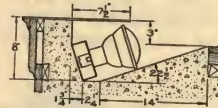


With individual spun reflectors and glass roundels in pivoting retaining rings that also accommodate gelatin frames.

Top is of 1/4-inch steel tread-plate supported on heavy channel brackets, angle iron reinforced. Furnished in any length. Reflector outlets spaced 6 inches on center (minimum).

No.	63520	63620
Per Foot.....	\$6.00	7.95
Lamp Wattage.....	60/100	150

#### Open Type

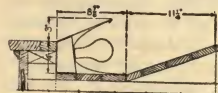


With individual spun reflectors and glass roundels in pivoting retaining rings that also accommodate gelatin frames. Steel channel wire-way. Tread plate not included. Fur-

nished in any length. Center to center minimum outlet spacing, 6 inches.

No.	61623	61625
Per Foot.....	\$16.25	16.90
Lamp Wattage.....	60/100	150

#### Continuous Reflector Type



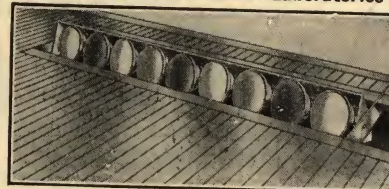
With complete housing of galvanized steel and continuous reflector finished in matte white or aluminum bronze.

No.	60004-P	60006-P
Per Foot.....	\$6.80	6.20
Lamp Wattage.....	40/100	40/100
Ctr. to Ctr. Min. Outlet Spacing...in.	4	6

For LUME-CROME or Alzak aluminum reflector, add \$1.95 per foot.

### HUB Disappearing Footlights

Approved by Underwriters' Laboratories



No. 41625

These footlights present practically an unbroken front, project but slightly above stage floor in use, fold flush when not in use, and are locked both open and closed.

Cover and trim of kiln-dried hardwood. Lamp carriage is secured to back of cover.

Furnished in 5-foot sections with Mercury cut-off switches, splice box and flexible steel armored conduit.

Approved by Underwriters' Laboratories, and comply with N.E.C. Standards.

**Type I.**—With individual spun reflectors and pivoting retaining rings for glass roundels or gelatine color frames.

**Type L.**—With continuous LUME-CROME reflector.

**Type P.**—With continuous matte white or Lustralume aluminum lacquer reflector.

No.	41623	41625	43523	40004-L	40004-P
Per 5-Foot Section...	\$120.00	120.00	108.00	90.00	84.00
Type.....	I	I	I	L	P
No. of Outlets.....	9	9	12	15	15
Lamp Wattage.....	100	150	60/100	40/100	40/100
Frame Width...inches	18	18	14	14	14
Ship Wt.....pounds	100	100	80	70	70



## HUB Concealable Footlights

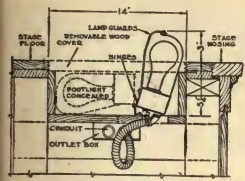
For lamps up to 100 watts. Hinged for concealment under removable wood cover (by others).

Available in multiple sections, not exceeding 7 feet.

**Type P** is furnished with Matte white or aluminum bronze interior.

**Type L** is furnished with continuous LUME-CROME or Alzak aluminum reflector.

Available with Underwriters' Approved mercury disconnect switches, add \$10.50 per section.



No 60024-P

No.	60024P	60024L	60026P	60026L
Per Foot.....	\$8.10	10.05	7.75	9.45
Ctr. to Ctr. Min. Outlet Spacing.....inches	4	4	6	6

## HUB Portable Footlights



No 73523

Available in multiple sections up to 10 feet each, complete with connecting cables and slip connectors, separable connectors or twist-lock couplings; specify when ordering.

## No. 73523 Individual Reflector Type

With individual LUME-CROME reflectors with glass roundels for 60 to 100-watt lamps. Reflector outlets spaced 6-inch on center, minimum.

Width, 10 1/8 inches. Height, 5 3/8 inches.

No. 73523.....per foot \$14.30  
For each connector or feeder cable, add \$4.55.

## Continuous Reflector Type

With continuous reflector for colored bulb lamps. Sockets spaced 4 inches on center, minimum.

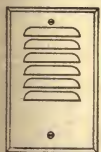
No. 70004-P.—Matte white or Lustralume aluminum lacquer reflecting surface. Width, 8 3/4 inches. Height, 3 3/4 inches.

No. 70004-P.....per foot \$7.80  
For each connector or feeder cable, add \$4.55.

No. 70004-L.—With LUME-CROME or Alcoa aluminum reflector lining.

No. 70004-L.....per foot \$9.75  
For each connector or feeder cable, add \$4.55.

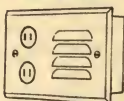
## HUB Aisle, Step and Night Lights



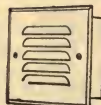
No 9950



No 9850



No 9952



No 9955

Made of steel with lacquer sprayed or brass plated finish.  
No. 9950.—Vertical louvered flush wall unit designed to direct all light to floor.

No. 9850.—Mounts directly under arm of aisle chair. Cast housing, diffusing glass.

No. 9952.—A horizontal louvered flush unit with duplex convenience outlet.

No. 9951.—Same as No. 9952, except without convenience outlet.

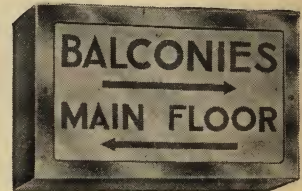
No. 9955.—A louvered flush unit with LUME-CROME reflector.

All flush units have concealed aligners and can be furnished with clear glass dust panel at \$1.80 additional.

No.	Lacquer Sprayed Each	Brass Plated Each	Max. Lamp Watts	Size, INCHES	Cover, INCHES	Width	Height	RECESS, BOX, INCHES	Width	Height	Depth
9950	\$6.00	\$9.00	60	5 1/2	8 3/8	4 1/2	6 7/8	3 1/4	4 1/2	6 7/8	3 1/4
9951	6.00	9.00	60	8 3/8	5 1/2	6 7/8	4 1/2	3 1/4	6 7/8	4 1/2	3 1/4
9952	8.40	11.40	60	8 3/8	5 1/2	6 7/8	4 1/2	3 1/4	6 7/8	4 1/2	3 1/4
9955	6.00	9.00	10	6	6	4 1/16	4 1/16	2 1/4	...	...	...
9850	6.00	.....	10	6	3 1/2	...	...	...	...	...	...

HUB Directional and Exit Signs  
With Concealed Hinge Front

Flush Type



Surface Type

Made of steel. Recess box has 1/2-inch knockouts and removable channel for concealed wiring and two or three receptacles for medium screw base lamps.

Exposed surfaces finished any standard lacquer color, interior sprayed Lustralume lacquer.

**Exit.**—Ruby or green letters on white, bronze-tone or aluminum background; or white letters on ruby or green background.

**Directional Inscriptions.**—Two lines of white letters on opaque bronzetone or aluminum background, or colored ceramic filled letters on opal background. Lettering may be any style.

Special designs and other glass combinations available at extra cost.

## Flush Type

## —2-Line Directional—

No.	Each	Letter Ht., In.	Each	Letter Ht., In.	Max. Letter Ht., In.	Box Size, INCHES	Height	Width	Depth
9003	\$8.70	3	\$2.00	1 1/4	1 1/4	6	12	4	
9005	9.80	4, 5, 6	3.65	2 1/2	2 1/2	8 3/4	13 3/4	4	
9006	3.65	6, 8	9.15	3 1/2	3 1/2	10 3/4	16 3/4	4	
9203	\$9.80	3	\$3.10	1 1/4	1 1/4	7 1/4	13 3/4	4	
9205	20.90	4, 5, 6	4.75	2 1/2	2 1/2	10	15	4	
9206	5.30	6, 8	31.35	3 1/2	3 1/2	12	18	4	

## Surface Type

Available with wire guard, add \$4.40 per sign.

## With 2-Piece Continuous Hinge Front



Heavy gauge steel frame and box. Two receptacles for medium screw base lamps.

Inscription in any style or wording in white letters on ruby or green background; ruby or green letters on white or bronze background at additional cost.

Exposed surfaces finished any standard lacquer color, interior sprayed aluminum bronze.

## Flush Type

## —FRONT, INCHES—

## Height Width

## Box Size, INCHES

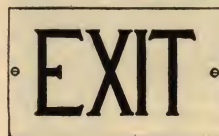
## Height Width Depth

9060	\$4.20	3, 4, 5	9	13 7/8	7 3/4	12 1/4	4	
9061	5.85	6	10	15 7/8	8 3/4	13 3/4	4	
9062	7.50	8	12	18 3/8	10 3/4	16 3/4	4	
9260	\$5.85	3, 4, 5	9	13 1/2	9	13 1/2	3 1/2	
9261	7.50	6	10	15	10	15	3 1/2	
9262	30.25	8	12	18	12	18	3 1/2	

## Surface Type

Available with wire guard, add \$4.40 per sign.

## Stencil Plate—Removable Front



Cutout letters backed with ruby or green panels as required.

Light box with two receptacles for medium screw base lamps.

Exterior finished any standard lacquer color, interior finished in aluminum bronze.

## Flush Type

## —FRONT, IN.—

## Height Width

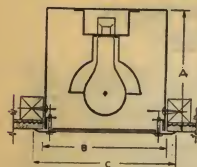
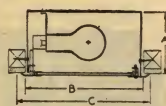
## Box Size, INCHES

## Height Width Depth

9190	\$2.10	3, 4, 5	9	13 1/2	7 3/4	12 1/4	4	
9191	5.95	6	10	15	8 3/4	13 3/4	4	
9192	20.35	8	12	18	10 3/4	16 3/4	4	
9390	\$3.20	3, 4, 5	9	13 1/2	9	13 1/2	3 1/2	
9391	7.05	6	10	15	10	15	3 1/2	
9392	22.00	8	12	18	12	18	3 1/2	



## HUB Flush Square Luminous Elements

No 5031-VS  
Lamp VerticalType HS  
with  
Removable FrameNo 5031-HS  
Lamp Horizontal

Steel frames, removable or concealed hinge types, finished any standard lacquer color. With panels of flashed opal, ceramic or sanded clearlite glass; other glass available at additional cost.

Recess box of rustproofed steel; interior sprayed Lustralume aluminum lacquer; exterior sprayed prime coat; fitted with individual LUME-CROME reflector.

## Lamps Vertical

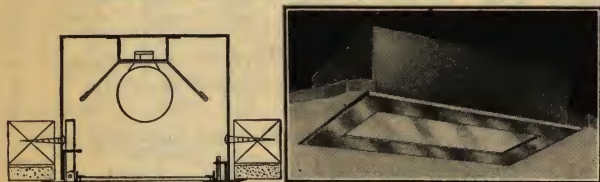
No.	With Hinged Frame Each	With Removable Frame Each	Max. Lamp Wattage	DIMENSIONS, INCHES		
				Height A	Ceiling Open. B	Frame Overall C
5001-VS	\$16.23	\$13.48	100	8 $\frac{3}{8}$	8 $\frac{3}{8}$	10 $\frac{1}{4}$
5031-VS	20.08	16.23	200	11 $\frac{3}{8}$	10 $\frac{3}{8}$	12 $\frac{1}{4}$
5061-VS	25.03	20.63	300	12 $\frac{3}{4}$	13 $\frac{7}{8}$	15 $\frac{3}{4}$

## Lamps Horizontal

No.	With Hinged Frame Each	With Removable Frame Each	Max. Lamp Wattage	DIMENSIONS, INCHES		
				Height A	Ceiling Open. B	Frame Overall C
5001-HS	\$14.30	\$11.55	60	4 $\frac{5}{8}$	8 $\frac{3}{8}$	10 $\frac{1}{4}$
5031-HS	17.60	13.75	100	4 $\frac{5}{8}$	10 $\frac{3}{8}$	12 $\frac{1}{4}$
5061-HS	22.55	18.15	200	7	13 $\frac{7}{8}$	15 $\frac{3}{4}$

## HUB Flush Luminous Elements

Type H, Tilted Angle Receptacle, Lamps Horizontal  
Type V, Sign Receptacle, Lamps Vertical



Removable or concealed hinge type steel ceiling trim frames, finished any standard lacquer color; flashed opal glass panels. Recess box of rustproofed steel with removable wireway and continuous LUME-CROME reflector lining; interior sprayed Lustralume aluminum lacquer; exterior sprayed prime coat. Specify Type H or Type V.

## For Lamps Up to 60 Watts

No.	With Concealed Hinged Frame Each	With Removable Frame Each	No. of Outlets	DIMENSIONS, INCHES		
				HEIGHT Type H	HEIGHT Type V	Ceiling Opening
5001	\$15.95	\$13.48	1	6 $\frac{7}{8}$	8 $\frac{3}{8}$	8 $\frac{3}{8}$ x 8 $\frac{3}{8}$
5002	19.80	16.78	2	6 $\frac{7}{8}$	8 $\frac{3}{8}$	15 x 8 $\frac{3}{8}$
5003	25.30	21.45	3	6 $\frac{7}{8}$	8 $\frac{3}{8}$	21 $\frac{5}{8}$ x 8 $\frac{3}{8}$
5004	30.80	26.13	4	6 $\frac{7}{8}$	8 $\frac{3}{8}$	28 $\frac{1}{4}$ x 8 $\frac{3}{8}$
5091	30.80	26.13	4	6 $\frac{7}{8}$	8 $\frac{3}{8}$	15 x 15
5006	42.90	36.58	6	6 $\frac{7}{8}$	8 $\frac{3}{8}$	41 $\frac{1}{2}$ x 8 $\frac{3}{8}$
5008	57.20	48.40	8	6 $\frac{7}{8}$	8 $\frac{3}{8}$	54 $\frac{3}{4}$ x 8 $\frac{3}{8}$
5010	71.50	61.05	10	6 $\frac{7}{8}$	8 $\frac{3}{8}$	68 x 8 $\frac{3}{8}$
5012	85.80	73.70	12	6 $\frac{7}{8}$	8 $\frac{3}{8}$	81 $\frac{1}{4}$ x 8 $\frac{3}{8}$

## For Lamps Up to 100 Watts

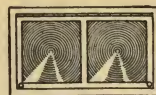
No.	With Concealed Hinged Frame Each	With Removable Frame Each	No. of Outlets	DIMENSIONS, INCHES		
				HEIGHT Type H	HEIGHT Type V	Ceiling Opening
5031	\$19.80	\$16.78	1	8 $\frac{3}{8}$	11 $\frac{3}{8}$	10 $\frac{3}{8}$ x 10 $\frac{3}{8}$
5032	25.85	22.00	2	8 $\frac{3}{8}$	11 $\frac{3}{8}$	18 $\frac{7}{8}$ x 10 $\frac{3}{8}$
5033	34.65	29.43	3	8 $\frac{3}{8}$	11 $\frac{3}{8}$	27 $\frac{3}{4}$ x 10 $\frac{3}{8}$
5034	45.65	38.75	4	8 $\frac{3}{8}$	11 $\frac{3}{8}$	35 $\frac{7}{8}$ x 10 $\frac{3}{8}$
5092	45.65	38.75	4	8 $\frac{3}{8}$	11 $\frac{3}{8}$	19 x 19
5036	62.70	53.08	6	8 $\frac{3}{8}$	11 $\frac{3}{8}$	52 $\frac{7}{8}$ x 10 $\frac{3}{8}$
5038	79.20	67.38	8	8 $\frac{3}{8}$	11 $\frac{3}{8}$	69 $\frac{7}{8}$ x 10 $\frac{3}{8}$
5040	99.00	84.15	10	8 $\frac{3}{8}$	11 $\frac{3}{8}$	86 $\frac{1}{2}$ x 10 $\frac{3}{8}$
5042	123.75	105.05	12	8 $\frac{3}{8}$	11 $\frac{3}{8}$	103 $\frac{1}{2}$ x 10 $\frac{3}{8}$

## For Lamps Up to 200 Watts

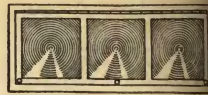
No.	With Concealed Hinged Frame Each	With Removable Frame Each	No. of Outlets	DIMENSIONS, INCHES		
				HEIGHT Type H	HEIGHT Type V	Ceiling Opening
5061	\$26.13	\$22.00	1	11 $\frac{3}{8}$	12 $\frac{3}{4}$	13 $\frac{7}{8}$ x 13 $\frac{7}{8}$
5062	33.00	28.05	2	11 $\frac{3}{8}$	12 $\frac{3}{4}$	26 x 13 $\frac{7}{8}$
5063	49.50	42.08	3	11 $\frac{3}{8}$	12 $\frac{3}{4}$	38 $\frac{1}{2}$ x 13 $\frac{7}{8}$
5064	66.00	55.83	4	11 $\frac{3}{8}$	12 $\frac{3}{4}$	50 $\frac{1}{4}$ x 13 $\frac{7}{8}$
5093	66.00	55.83	4	11 $\frac{3}{8}$	12 $\frac{3}{4}$	26 $\frac{1}{4}$ x 26 $\frac{1}{4}$
5066	94.05	80.03	6	11 $\frac{3}{8}$	12 $\frac{3}{4}$	76 $\frac{1}{2}$ x 13 $\frac{7}{8}$
5068	125.95	107.25	8	11 $\frac{3}{8}$	12 $\frac{3}{4}$	98 $\frac{3}{4}$ x 13 $\frac{7}{8}$
5070	154.00	131.18	10	11 $\frac{3}{8}$	12 $\frac{3}{4}$	123 x 13 $\frac{7}{8}$
5072	182.60	155.38	12	11 $\frac{3}{8}$	12 $\frac{3}{4}$	147 $\frac{1}{4}$ x 13 $\frac{7}{8}$

## HUB Incandescent Controlens Elements

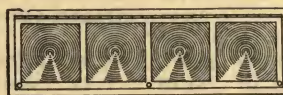
## Flush Type

Single Lens  
Element

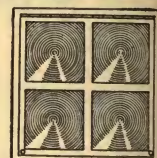
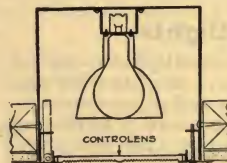
Two Lens Element



Three Lens Element



Four Lens Element

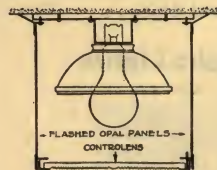
Square Four  
Lens Element

Consists of steel recess box with wireway, medium base sockets and individual reflectors and Controlens in a steel frame, hinged or removable, finished any standard lacquer color.

Pre-focused at factory to produce specific lighting distribution.

No.	With Hinged Frame Each	With Removable Frame Each	LENSES		LAMPS		RECESS BOX, INCHES		
			No.	Size In.	No.	Max. Wattage	Length	Width	Depth
6001	\$26.40	\$24.75	1	6 $\frac{1}{2}$	1	100	8 $\frac{1}{8}$	8 $\frac{1}{8}$	8 $\frac{3}{8}$
6002	47.85	43.45	2	6 $\frac{1}{2}$	2	100	14 $\frac{3}{4}$	8 $\frac{1}{8}$	8 $\frac{3}{8}$
6003	63.25	56.65	3	6 $\frac{1}{2}$	3	100	21 $\frac{3}{8}$	8 $\frac{1}{8}$	8 $\frac{3}{8}$
6004	79.75	71.50	4	6 $\frac{1}{2}$	4	100	28	8 $\frac{1}{8}$	8 $\frac{3}{8}$
6091	80.85	73.15	4	6 $\frac{1}{2}$	4	100	14 $\frac{3}{4}$	14 $\frac{3}{4}$	8 $\frac{3}{8}$
6031	31.90	30.25	1	8 $\frac{1}{2}$	1	150	10 $\frac{1}{8}$	10 $\frac{1}{8}$	11 $\frac{3}{8}$
6032	62.15	57.75	2	8 $\frac{1}{2}$	2	150	18 $\frac{5}{8}$	10 $\frac{1}{8}$	11 $\frac{3}{8}$
6033	81.40	74.80	3	8 $\frac{1}{2}$	3	150	27 $\frac{1}{4}$	10 $\frac{1}{8}$	11 $\frac{3}{8}$
6034	106.70	98.45	4	8 $\frac{1}{2}$	4	150	35 $\frac{5}{8}$	10 $\frac{1}{8}$	11 $\frac{3}{8}$
6092	107.25	99.00	4	8 $\frac{1}{2}$	4	150	18 $\frac{3}{4}$	18 $\frac{3}{4}$	11 $\frac{3}{8}$
6061	38.50	36.85	1	12	1	300	13 $\frac{5}{8}$	13 $\frac{5}{8}$	12 $\frac{3}{4}$
6062	73.35	70.95	2	12	2	300	25 $\frac{3}{4}$	13 $\frac{5}{8}$	12 $\frac{3}{4}$
6063	108.35	101.75	3	12	3	300	37 $\frac{7}{8}$	13 $\frac{5}{8}$	12 $\frac{3}{4}$
6064	140.25	132.00	4	12	4	300	50	13 $\frac{5}{8}$	12 $\frac{3}{4}$
6093	137.50	129.25	4	12	4	300	26	26	12 $\frac{3}{4}$

## Surface Type

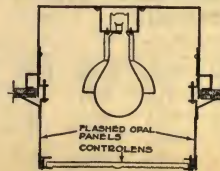


Made of steel with opal glass side panels and Controlens at bottom in hinged, removable or gravity lift frame. Complete with wireway, medium base sockets and individual reflectors, pre-focused at factory.

Finished any standard lacquer color.

No.	With Hinged Frame Each	With Gravity Lift Frame Each	LENSES		LAMPS		DIMENSIONS, INCHES		
			No.	Size In.	No.	Max. Wattage	Length	Width	Depth
6601	\$47.30	\$43.45	1	6 $\frac{1}{2}$	1	100	10 $\frac{1}{4}$	10 $\frac{1}{4}$	8 $\frac{7}{8}$
6602	57.75	52.25	2	6 $\frac{1}{2}$	2	100	16 $\frac{7}{8}$	10 $\frac{1}{4}$	8 $\frac{7}{8}$
6603	80.85	73.70	3	6 $\frac{1}{2}$	3	100	23 $\frac{1}{2}$	10 $\frac{1}{4}$	8 $\frac{7}{8}$
6604	97.35	88.00	4	6 $\frac{1}{2}$	4	100	30 $\frac{1}{8}$	10 $\frac{1}{4}$	8 $\frac{7}{8}$
6691	88.00	78.65	4	6 $\frac{1}{2}$	4	100	16 $\frac{7}{8}$	16 $\frac{7}{8}$	8 $\frac{7}{8}$
6631	58.30	54.45	1	8 $\frac{1}{2}$	1	150	12 $\frac{1}{4}$	12 $\frac{1}{4}$	11 $\frac{7}{8}$
6632	71.50	66.00	2	8 $\frac{1}{2}$	2	150	20 $\frac{3}{4}$	12 $\frac{1}{4}$	11 $\frac{7}{8}$
6633	100.65	93.50	3	8 $\frac{1}{2}$	3	150	29 $\frac{1}{4}$	12 $\frac{1}{4}$	11 $\frac{7}{8}$
6634	123.75	115.50	4	8 $\frac{1}{2}$	4	150	37 $\frac{3}{4}$	12 $\frac{1}{4}$	11 $\frac{7}{8}$
6692	112.75	104.50	4	8 $\frac{1}{2}$	4	150	20 $\frac{7}{8}$	20 $\frac{7}{8}$	11 $\frac{7}{8}$
6661	66.00	62.15	1	12	1	300	15 $\frac{3}{4}$	15 $\frac{3}{4}$	13 $\frac{3}{4}$
6662	85.25	79.75	2	12	2	300	27 $\frac{7}{8}$	15 $\frac{3}{4}$	13 $\frac{3}{4}$
6663	119.90	112.75	3	12	3	300	40	15 $\frac{3}{4}$	13 $\frac{3}{4}$
6664	151.25	143.00	4	12	4	300	52 $\frac{1}{8}$	15 $\frac{3}{4}$	13 $\frac{3}{4}$
6693	145.75	137.50	4	12	4	300	28 $\frac{1}{8}$	28 $\frac{1}{8}$	13 $\frac{3}{4}$

## Semi-Flush Type



Exposed portion has opal glass sides and Controlens in hinged, removable or gravity lift frames.

Recess box dimensions same as flush type shown above, except height is 3 $\frac{3}{8}$  to 5 inches less.

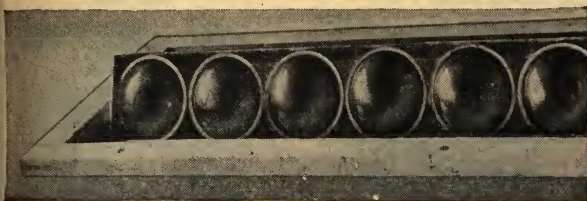
Prices upon request.

\*Elements with one lens provided with removable frame.



## Century Footlights

Approved by Underwriters' Laboratories, Inc.



Disappearing type made in 62-inch sections.

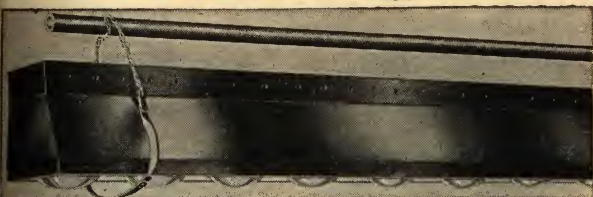
Has kiln dry maple wood cover with individual aluminum alcen finish reflectors. Heat resisting color roundels in red, white and blue. Furnished with mercury on and off switches and a splice box for feed with terminal blocks.

No. 846M, With Twelve 60-Watt Outlets.....each \$79.20  
No. 843M, With Nine 75 to 150-Watt Outlets...each 85.80

## Century Borderlights

Approved by Underwriters' Laboratories, Inc.

Individual Reflector Type

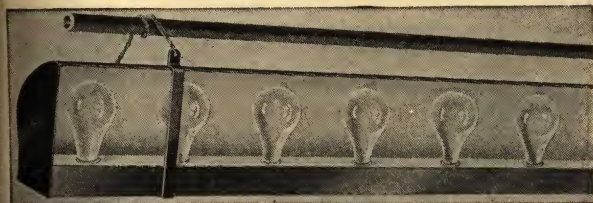


Has aluminum alcen finish reflectors, red, amber, green, white, or blue roundels, chain hangers and splice box.

No.	450	455	460
Per Foot.....	\$7.70	11.00	13.75
Outlet Centers.....inches	6	8	12
Wattage.....	75-150	200	300-500

Cable clamp and cradle sets furnished at \$7.70 extra.

### No. 400 Continuous Reflecting Surface Type



White paint continuous reflecting surface, semi-open trough, chain hangers, splice box for feed cables.

No.	400	400	400
Per Foot.....	\$5.28	4.29	3.52
Outlet Centers.....inches	4	6	12
Wattage.....	25-100	25-100	25-100

### Individual Compartment Type

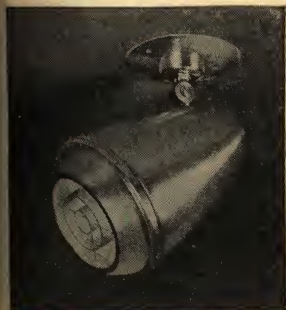
White paint individual compartment type with metal doot frames, chain hangers, and splice box for feed cables.

No.	406 1/2	406
Per Foot.....	\$5.00	5.00
Outlet Centers.....inches	6	8
Wattage.....	100-150	200

## Century Dramalites

Approved by Underwriters' Laboratories, Inc.

Decoratively designed to receive reflector bulbs in 150 and 300-watt R40 and PAR38 sizes. All aluminum finish.



No. 373, Canopy Type..ea.\$12.10



No. 372, Base Type...ea.\$12.10

## Century Lekolites

For 100 to 500 Watts

For 1000 to 2000 Watts

Approved by Underwriters' Laboratories, Inc.



No. 1565

Elliptical spotlites with built-in beam framing shutters, yoke base or clamp, metal cutter frame, heat resisting condensing lens, and asbestos lead.

No. 1565 has one 8x10-inch heat resisting condensing lens, built-in 4-way shutters, elliptical reflector, and is wired for 1000 to 2000 watts.

No. 1591 has two 6x9-inch lenses, 4-way shutters, elliptical reflectors, and is wired for 100 to 500 watts.

Bulbs are not included in price.

No. 1565.....	each \$148.50
No. 1591.....	each 55.00

Iris shutter may be substituted for 4 way shutters at no extra cost.

## Century Fresnelites

For 75 to 5000 Watts

Approved by Underwriters' Laboratories, Inc.



Fresnelens provides soft edged spot and floodlight.

Ideal for stage lighting.

Furnished with spherical reflector, focusing device, yoke (clamp or base), metal color frame, and asbestos lead. Accessories available: tripod base, glass filter, flanges; prices on request.

No.	Each	Lens Diam. In.	Watts
500	\$18.70	6	250-500
*501	66.00	8	1000-1500
*502	93.50	10	2000
*503	148.50	14	5000
*505	44.00	6	250-500
507	17.60	5	100-400
508	15.40	3	75-150

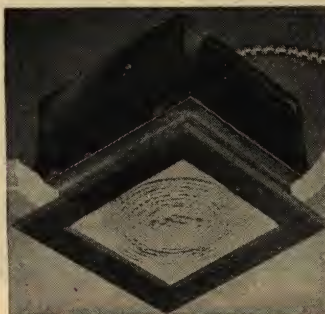
\*Cast aluminum top and bottom, with screw feed focusing device. Others are all steel bodies, with push-button type slider focusing device.

Bulbs are not included in prices.

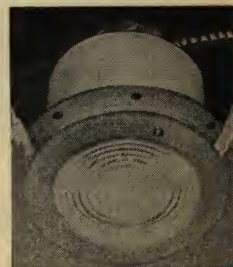
Available with telescopic stand at extra cost.

## Century Fresnelite Downlights

Approved by Underwriters' Laboratories, Inc.



Square Fresnelens Unit



Circular Fresnelens Unit

Built-in heat resisting lens unit with hinged door, plaster ring, and bottom access.

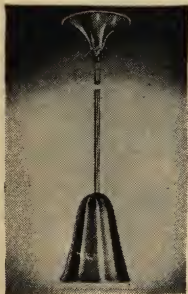
Square				Circular			
No.	Each	Lens Size Sq. In.	Watts	No.	Each	Lens Size In.	Watts
2220	\$21.00	12	300-500	2201	\$14.50	6	60-100
2221	19.20	8 1/4	100-200	2202	19.70	8	100-150
2222	17.70	6 1/4	60-75	2203	13.20	3	60
.....	.....	.....	.....	2210	22.00	10	150-200
.....	.....	.....	.....	2212	26.40	12	100-300
.....	.....	.....	.....	2214	30.80	14	200-300



## Century Reflec-O-lites

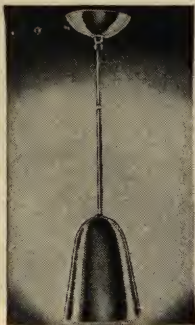
For 150 to 300-Watt R40 and PAR38 Bulbs

No. 346, Bellshape



No. 346.....each \$9.90

No. 347, Streamline



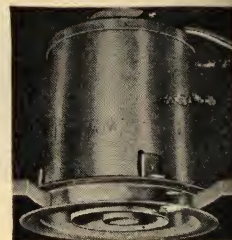
No. 347.....each \$9.90

No. 348, Sphere



No. 348.....\$19.80

No. 338



Recessed type. Louver ring, bottom access, ceiling ring.

Minimum ceiling opening,  $6\frac{7}{8}$  inches diameter. Depth,  $9\frac{1}{2}$  inches.

No. 338.....each \$14.30

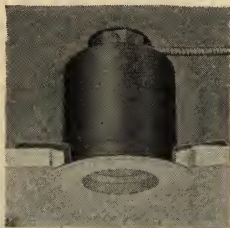
No. 386



Recessed, swivel type, 360° turn, angle to 45° from vertical. Flush ceiling ring. Light aperture,  $5\frac{1}{4}$  inches. Ceiling opening, 12 inches. Depth,  $14\frac{1}{2}$  inches.

No. 386.....each \$36.00

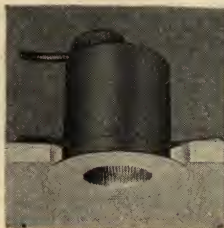
No. 388



Recessed type. Bafflerings, fixed focus. Flush ceiling ring. Light aperture,  $5\frac{1}{4}$  inches. Minimum ceiling opening,  $8\frac{1}{2}$  inches. Depth,  $11\frac{1}{4}$  inches.

Low surface contrast. No. 388.....each \$22.00

No. 387



Recessed counter light. Long, narrow elliptical beam pattern. Offset bulb, 55° spread lens. Light aperture,  $5\frac{1}{4}$  inches. Ceiling opening,  $11\frac{1}{8}$  inches.

Depth,  $11\frac{1}{8}$  inches. No. 387.....each \$26.50

No. 351



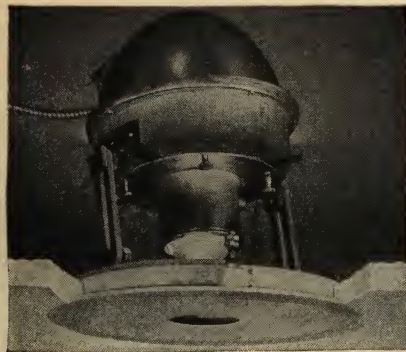
Semi-recessed, eyeball swivel. Minimum ceiling opening,  $13\frac{3}{4}$  inches diameter.

Depth, 5 inches. No. 351.....each \$25.00

## Century Downlights

No. 250 or 400-Watt G30 Bulb

No. 1653



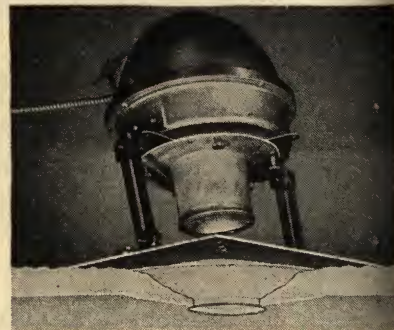
No. 1653.....each \$66.00

Has built-in 4-way framing shutters, objective lens, ellipsoidal reflector,  $3\frac{1}{2}$ -inch aperture opening; 250 or 400 watt incandescent type.

No. 1653. Bottom access to lamp. Bayonet locked aperture plate.

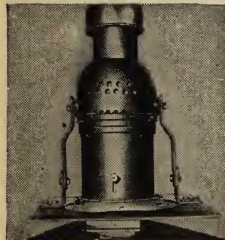
No. 1653A. Top access to lamp.

No. 1653A



No. 1653A, With Plaster Cone.....each \$60.50

No. 1646



No. 1646.....each \$52.80

Top access only.

Uses prefocus base bulb.

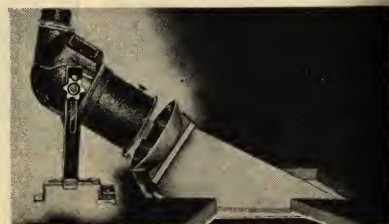
Has built-in framing shutters, objective lens system with two 6x9-inch lenses, and ellipsoidal reflector.

No. 1646. Has 90° angle of projection.

No. 1649. Has 30° to 60° angle of projection.

For 250 or 500-Watt T-12 Bulb

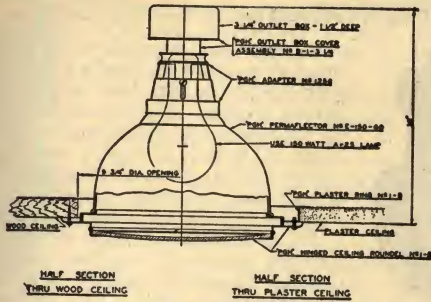
No. 1649



No. 1649.....each \$61.60



## Pittsburgh Permaflexor Recessed Show Window Lighting Units No. E-150 Series



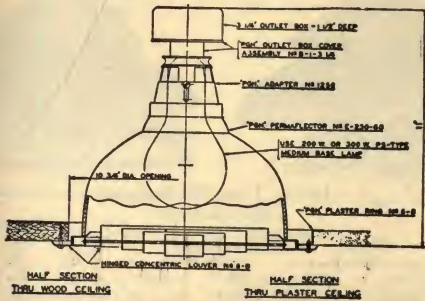
No. E-150-4 Recessed in Ceiling

Provides a broadly distributing reflector with a desirable concentration at center for direct lighting service where a close spacing of lamps is needed for low mounting such as entrance ways and marquees.

Furnished complete with Permaflexor E-150, outlet box cover assembly and hinged ceiling roundel with or without wire guards or hinged concentric louvers.

Lamp sizes: 100-watt A-21 and 150-watt PS-25.

## No. E-230 Series

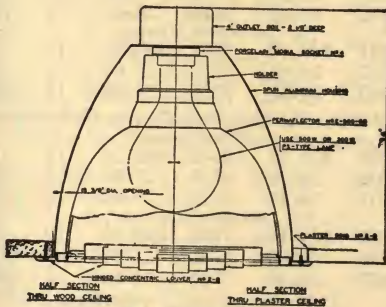


No. E-230-5 Recessed in Ceiling

Provides a broadly distributing reflector with a desirable center concentration. Used for downlighting in stores, gymnasiums, and below mezzanine floors and other locations with low head room. Equipped with Permaflexor E-230 outlet box cover assembly and hinged ceiling roundel with or without wire guards or hinged concentric louvers.

Lamp sizes: 300-w. PS-35, 200-w. PS-30 or 150-w. PS-25.

## No. E-500 Series



No. E-500-8 Recessed in Ceiling

Used exposed or enclosed in metal housing for industrial and public space illumination. It is recessed in the ceiling, with flush mounting ring and concentric louver, or hinged ceiling roundel. Excellent for use above skylights and for all recessed installations for general lighting.

Lamp Sizes: 500-watt PS-40 or 300-watt PS-35.

No.	Each	Std. Wt. Pkg. Lb.	No.	Each	Std. Wt. Pkg. Lb.	No.	Each	Std. Wt. Pkg. Lb.
E-150	\$3.50	7 15	E-230	\$4.00	5 14	E-500	\$8.70	1 8
E-150R	3.50	7 15	E-230-R	4.00	5 14	E-500-B	8.70	1 9
E-150-2	4.37	7 20	E-230-2	4.95	5 17	E-500-2	9.85	1 8
E-150-4	7.70	7 33	E-230-4	9.05	5 28	E-500-4	17.20	1 13
E-150-5	7.70	7 28	E-230-5	8.70	5 25	E-500-5	14.20	1 11
E-150-7	12.00	1 11	E-230-7	15.60	1 12	E-500-7	25.00	1 20
E-150-8	12.00	1 10	E-230-8	15.25	1 11	E-500-8	22.00	1 18

## Pittsburgh Permaflexor Floodlight Units No. I-1005 Series



Used in high-bay industrial applications where the lighting equipment is located 25 feet or more above the floor and exceptional light concentration is required.

Available in a metal protective housing for use in industrial plants, power houses, gymnasiums, repair shops, and similar installations.

Also available in concentrated and broad light distribution and wattages ranging from 200 to 1000-watts and for use with 400-watt mercury lamps.

Can be equipped with concentric louvers and various types of protective guards.

Bottom diameter, 16 inches.

## No. I-1005-N Series

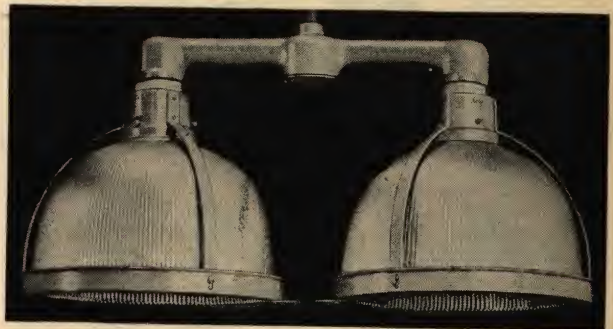
Provides support and protection for the Permaflexor without the use of a complete housing.

Incorporates the retaining ring arrangement for lighting interiors, in industrial plants, repair shops, hangers, armories, power plants, and similar installations.

Available in concentrated and broad light distribution; wattages from 150 to 1000-watts and for use with 400-watt mercury lamps. Bottom diameter, 16½ inches.

No.	Each	Std. Pkg.	Wt. Lb.
I-1005-S	\$24.00	1	35
I-1005-L	26.65	1	36
I-1005-G	26.25	1	36
I-1005-LG	28.90	1	37
I-1005-N	23.60	1	22

## Dual Units



Used for general factory and industrial installations.

The twin hangers support two Permaflexors; one for the incandescent filament lamp and the other for the mercury T-16 lamp. In this manner, a perfect blend of incandescent and mercury is obtainable in desired proportions. Available in 500-watt, 750-watt, and 1000-watt incandescent lamps combined with 400-watt T-60 mercury lamps.

No.	Each	Std. Pkg.	Wt. Lb.
D-005-N	\$49.46	1	39
D-505-N	47.00	1	37
D-500-N	25.70	1	30
D-530-N	39.17	1	32



## Benjamin Intensifiers

Listed by Underwriters' Laboratories, Inc.

For supplementary, high intensity illumination of small areas.

Packed 1 in a standard package.

## Medium Base—Adjustable-Focus Projectors



Highly polished Alzak aluminum reflector. Medium base composition socket (No. 6656) has focusing adjustment. Universal adjusting bracket is attached to reflector neck. Two thumb screws lock bracket at any point in a wide range of horizontal and vertical settings.

Bracket tapped for 1/2 inch conduit connection. Reflector interior sealed by dust-tight glass cover with quick-opening latch.

Band is natural aluminum, latch electro-plated. Reflector is green lacquer outside; louver, black.

Size Lamp Watts	Complete		Glass Only		Style of Cover Glass	Diam. In.	Lgth. In.
	No.	Each	No.	Each			
60-100	5603	\$12.00	6281	\$1.00	Plain, Clear...	9 7/8	12 1/4
150-200	5604	14.95	6285	3.50	Stippled, Clear	12 7/8	15 3/4

## Mogul Base—Fixed-Focus Projectors



Highly polished Alzak aluminum reflector. Non-focusing, mogul base porcelain socket, No. 2585.

Universal adjusting bracket encloses wiring; fixture supplied with 10-foot leads of No. 16 B&S gage, asbestos covered stranded fixture wire.

Bracket is tapped 1/2 inch standard, 3/4 inch if specified. Reflector interior is sealed by glass cover with quick-opening latch.

Band is natural aluminum; latch, electro-plated. Reflector is green lacquer outside; louver, dead black.

Size Lamp Watts	Complete		Glass Only		Style of Cover Glass	Diam. In.	Lgth. In.
	No.	Each	No.	Each			
300-500	5637	\$22.00	6285	\$3.45	Stippled, Clear	12 7/8	13
300-500	5639	19.00	6287	6.00	*Daylight.....	12 7/8	13

## Benjamin Explosion-Proof Pendent Lighting Units

Listed as Standard by Underwriters' Laboratories  
Class I, Groups C and D, Hazardous Locations

Less Reflector

Socket is one-piece porcelain, with wiring terminals conveniently located on side. Socket base has permanently formed-on metal gasket.

Packed 1 in a standard package.

A line of enclosing-globe type explosion-proof units to which can be attached any of four standard porcelain enamel steel reflector shapes. Units completely satisfy all Underwriters' requirements for installation in Class I, Groups C and D, hazardous locations—atmospheres having vapors of gasoline, naphtha, petroleum, alcohol, acetone, lacquer solvents, and natural gas.

The pendent hood is cast iron, finished in sprayed aluminum applied over electroplating; tapped 1/2 and 3/4 inch. Removable inspection plug in side of hood gives access to socket terminal screws.



With Dome Reflector



With Shallow Dome Reflector

Units Less Reflectors  
With Guards

Size Lamp Watts	Tapped 1/2 Inch		Tapped 3/4 Inch		Diam. Ref. In.	Over- all Ht. In.	Wt., Lb. Std. Pkg.
	No.	Each	No.	Each			
75,100	7601	\$22.35	7501	\$22.45	..	11	11
150	7602	22.35	7502	22.45	..	12	10 1/2
200	7603	32.10	7503	32.20	..	13 1/2	15
75,100	7631	\$21.20	7531	\$21.30	..	10 1/8	11
150	7632	21.20	7532	21.30	..	11 1/8	10 1/2
200	7673	30.35	7573	30.45	..	12 1/4	14 1/2

## Without Guards

## Units with Dome Reflectors

Size Lamp Watts	Tapped 1/2 Inch		Tapped 3/4 Inch		Diam. Ref. In.	Over- all Ht. In.	Wt., Lb. Std. Pkg.
	No.	Each	No.	Each			
75,100	7611	\$25.55	7511	\$25.65	12	11	15
150	7612	26.10	7512	26.20	14	12	17
200	7613	36.45	7513	36.55	16	13 1/2	20
75,100	7651	\$24.40	7551	\$24.50	12	10 1/8	14 1/2
150	7652	24.95	7552	25.05	14	11 1/8	16 1/2
200	7653	34.70	7553	34.80	16	12 1/4	23

## Without Guards

## Units with Shallow Dome Reflectors

Size Lamp Watts	Tapped 1/2 Inch		Tapped 3/4 Inch		Diam. Ref. In.	Over- all Ht. In.	Wt., Lb. Std. Pkg.
	No.	Each	No.	Each			
75,100	7615	\$25.25	7515	\$25.35	12	11	15
150	7616	25.80	7516	25.90	14	12	17
200	7617	36.15	7517	36.25	16	13 1/2	19 1/2
75,100	7655	\$24.10	7555	\$24.20	12	10 1/8	14
150	7656	24.65	7556	24.75	14	11 1/8	16 1/2
200	7657	34.40	7557	34.50	16	12 1/4	22 1/2

## Without Guards

## Units with Bowl Reflectors

Size Lamp Watts	Tapped 1/2 Inch		Tapped 3/4 Inch		Diam. Ref. In.	Over- all Ht. In.	Wt., Lb. Std. Pkg.
	No.	Each	No.	Each			
75,100	7629	\$25.80	7529	\$25.90	10	11	14 1/2
150	7630	26.40	7530	26.50	12	12	10
75,100	7659	\$24.65	7559	\$24.75	10	10 1/8	14
150	7660	25.25	7560	25.35	12	11 1/8	14

## Without Guards

## Units with Symmetrical Angle Reflectors

Size Lamp Watts	Tapped 1/2 Inch		Tapped 3/4 Inch		Diam. Ref. In.	Over- all Ht. In.	Wt., Lb. Std. Pkg.
	No.	Each	No.	Each			
75,100	7633	\$25.80	7533	\$25.90	10	*12 7/8	14 1/2
150	7634	26.40	7534	26.50	12	*15	14 1/2
200	7635	37.30	7535	37.40	16	*18 1/8	22
75,100	7663	\$24.65	7563	\$24.75	10	*12 7/8	14
150	7664	25.25	7564	25.35	12	*15	14
200	7665	35.55	7565	35.65	16	*18 1/8	25

## Without Guards

\*Height from top of hood to lower rim of reflector.



## Benjamin Explosion-Proof Ceiling Lighting Units

Listed by Underwriters' Laboratories as Standard Class I, Groups C and D, Hazardous Locations



Less Reflector

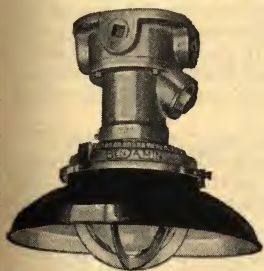
Units completely satisfy all Underwriters' requirements for installation in Class I, Groups C and D, hazardous locations—atmospheres having vapors of gasoline, naphtha, petroleum, alcohol, acetone, lacquer solvents and natural gas. Any of four standard porcelain enamel steel reflector shapes can be attached to units.

The two-piece ceiling hood is cast iron. Consists of an explosion-proof outlet box to which is attached the main body of the hood containing the socket. Hood body is fastened to the box by four screws; has a removable inspection plug and is threaded

to take the fixture body. Sprayed aluminum finish, applied over electro-plating.

Boxes have four 3/8-inch diameter mounting holes and four tapped hubs, with conduit stops; three having plugs.

Packed 1 in a standard package.



With Dome Reflector



With Bowl Reflector

### Units Less Reflectors With Guards

Size Lamp Watts	Tapped 1/2 Inch		Tapped 3/4 Inch		Diam. Ref. In.	Over- all Ht. In.	Ship. Wt., Lb. Std. Pkg.
	No.	Each	No.	Each			
75,100	7601CX	\$27.30	7501CX	\$27.50	..	11 1/8	12 1/2
150	7602CX	27.30	7502CX	27.50	..	12 3/4	12
200	7603CX	37.05	7503CX	37.25	..	13 7/8	16 1/2
Without Guards							
75,100	7631CX	\$26.15	7531CX	\$26.35	..	10 1/2	12 1/2
150	7632CX	26.15	7532CX	26.35	..	11 1/2	12
200	7673CX	35.30	7573CX	35.50	..	12 5/8	19 1/2

### Units with Dome Reflectors With Guards

75,100	7611CX	\$30.50	7511CX	\$30.70	12	11 3/8	16 1/2
150	7612CX	31.05	7512CX	31.25	14	12 3/8	18 1/2
200	7613CX	41.40	7513CX	41.60	16	13 7/8	21 1/2
Without Guards							
75,100	7651CX	\$29.35	7551CX	\$29.55	12	10 1/2	16
150	7652CX	29.90	7552CX	30.10	14	11 1/2	18
200	7653CX	39.65	7553CX	39.85	16	12 5/8	24 1/2

### Units with Shallow Dome Reflectors With Guards

75,100	7615CX	\$30.20	7515CX	\$30.50	12	11 3/8	16 1/2
150	7616CX	30.75	7516CX	30.95	14	12 3/8	18 1/2
200	7617CX	41.10	7517CX	41.30	16	13 7/8	20 3/4
Without Guards							
75,100	7655CX	\$29.05	7555CX	\$29.25	12	10 1/2	15 1/2
150	7656CX	29.60	7556CX	29.80	14	11 1/2	18
200	7657CX	39.35	7557CX	39.55	16	12 5/8	23 3/4

### Units with Bowl Reflectors With Guards

75,100	7629CX	\$30.75	7529CX	\$30.95	10	11 3/8	16
150	7630CX	31.35	7530CX	31.55	12	12 3/8	17
Without Guards							
75,100	7659CX	\$29.60	7559CX	\$29.80	10	10 1/2	15 1/2
150	7660CX	30.20	7560CX	30.40	12	11 1/2	15 1/2

### Units with Symmetrical Angle Reflectors With Guards

75,100	7633CX	\$30.75	7533CX	\$30.95	10	*13 1/4	16
150	7634CX	31.35	7534CX	31.55	12	*15 3/8	16
200	7635CX	42.25	7535CX	42.45	16	*18 1/2	23 1/2
Without Guards							
75,100	7663CX	\$29.60	7563CX	\$29.80	10	*13 1/4	15 1/2
150	7664CX	30.20	7564CX	30.40	12	*15 3/8	15 1/2
200	7665CX	40.50	7565CX	40.70	16	*17 1/4	23 1/2

\*Height from top of hood to lower rim of reflector.

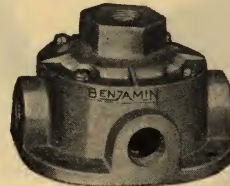
## Benjamin Explosion-Proof Junction Boxes

With Hubbed Covers

For Installing Explosion-Proof, Pendent Type Units

Listed as Standard by Underwriters' Laboratories for Class I, Groups C and D

Class II, Group E, F, G and Classes III and IV Hazardous Locations



No. 7350X

Designed for the suspension of pendent type explosion-proof and dust-tight lighting units in hazardous atmosphere locations.

Hubbed cover is attached by four screws, lock washer equipped, which thread into blind tapped holes.

Boxes are supplied with four 3/8-inch diameter mounting holes, equally spaced on a 5 1/2-inch circle.

A single style and size of box, equipped with four tapping hubs equally spaced on a circle, is the basis of all tapping combinations.

Hubs on boxes and covers are provided with built-in conduit stops.

Boxes and covers are cast iron; sprayed aluminum finish, applied over electro-plating.

Cover attaching screws are electro-plated.

Packed 5 in a standard package.

### One Side Tapped

Size Tapping Inches	Type EPS Box with Hubbed Cover						*Type ES Box Only	
	1/2-INCH HUB COVER			3/4-INCH HUB COVER				
	No.	Each		No.	Each		No.	Each
1/2	7350V	\$3.70		7351V	\$3.75		7300V	\$1.40
3/4	7355V	3.75		7356V	3.80		7305V	1.45
1	7360V	3.80		7361V	3.85		7310V	1.50

### Feed Through Tapped

1/2	7350C	\$3.80	7351C	\$3.85	7300C	\$1.50
3/4	7355C	3.90	7356C	3.95	7305C	1.60
1	7360C	4.00	7361C	4.05	7310C	1.70

### Right Angle Tapped

1/2	7350L	\$3.80	7351L	\$3.85	7300L	\$1.50
3/4	7355L	3.90	7356L	3.95	7305L	1.60
1	7360L	4.00	7361L	4.05	7310L	1.70

### 3-Way Tapped

1/2	7350T	\$3.90	7351T	\$3.95	7300T	\$1.60
3/4	7355T	4.05	7356T	4.10	7305T	1.75
1	7360T	4.20	7361T	4.25	7310T	1.90

### 4-Way Tapped

1/2	7350X	\$4.00	7351X	\$4.05	7300X	\$1.70
3/4	7355X	4.20	7356X	4.25	7305X	1.90
1	7360X	4.40	7361X	4.45	7310X	2.10

### Covers

Made of cast iron; sprayed aluminum finish, applied over electro-plating.

Packed 5 in a standard package.

No.	Hubbed		Plain
	7370	7371	
Each	\$2.30	2.35	2.20
Tapped	inches 1/2	3/4	....

\*Outlet box without tapping, No. 7300, \$1.15 each.



## Type II-G Benjamin Dust-Tight Lighting Units

Listed by Underwriters' Laboratories for Class II, Groups E, F and G and Classes III and IV Hazardous Locations



No. 8500



No. 8506



No. 8513



No. 8517

For locations requiring dust or vapor-tight lighting equipment. Weather and moisture-proof, and due to the protection of the lamp afforded by the glass screw globe, this unit is valuable in food industries where there is a danger of spoilage from breakage of uncovered lamps.

Cast aluminum hoods with removable cast-aluminum cap; sprayed aluminum finish. Acid-resisting porcelain enameled reflector; green outside, reflecting white inside. Medium base, one-piece porcelain socket with side terminals. Standard package is 10.

### With Dome Reflectors

No.	Each	Watts	Type of Globe	Diam. Refl. In.	Over-all Ht. In.	Hood No.	Refl. No.	Globe No.
8500	\$13.30	75	Plain Cl.	12	10 $\frac{1}{16}$	8550	1100	1062
8500-HR	17.25	75	Heat-Res.	12	10 $\frac{3}{8}$	8550	1100	1094
8505	19.05	150	Plain Cl.	18	13 $\frac{3}{8}$	8551	1103	1063
8505-HR	24.50	150	Heat-Res.	18	12 $\frac{7}{8}$	8551	1103	1095
8503	19.05	200	Plain Cl.	18	13 $\frac{3}{8}$	8552	1103	1063
8503-HR	24.50	200	Heat-Res.	18	12 $\frac{7}{8}$	8552	1103	1095

### With Bowl Reflectors

8506	\$13.75	100	Plain Cl.	9	10 $\frac{1}{16}$	8550	1106	1062
8506-HR	17.70	100	Heat-Res.	9	10 $\frac{1}{16}$	8550	1106	1094

### With Flat Cone Reflectors

8513	\$13.30	75	Plain Cl.	14	10 $\frac{1}{16}$	8550	1113	1062
8513-HR	17.25	75	Heat-Res.	14	10 $\frac{1}{16}$	8550	1113	1094
8514	17.80	150	Plain Cl.	18	13 $\frac{3}{8}$	8551	2515	1063
8514-HR	23.25	150	Heat-Res.	18	12 $\frac{7}{8}$	8551	2515	1095
8515	17.80	200	Plain Cl.	18	13 $\frac{3}{8}$	8552	2515	1063
8515-HR	23.25	200	Heat-Res.	18	12 $\frac{7}{8}$	8551	2515	1095

### With Symmetrical Angle Reflectors

8517	\$13.85	75	Plain Cl.	10	11 $\frac{1}{16}$	8550	1117	1062
8517-HR	17.80	75	Heat-Res.	10	11 $\frac{1}{16}$	8550	1117	1094
8519	18.45	150	Plain Cl.	14	16 $\frac{1}{2}$	8568	1119	1063
8519-HR	23.90	150	Heat-Res.	14	16 $\frac{1}{2}$	8568	1119	1095
8518	18.45	200	Plain Cl.	14	16 $\frac{1}{2}$	8569	1119	1063
8518-HR	23.90	200	Heat-Res.	14	16 $\frac{1}{2}$	8569	1119	1095

### Without Reflectors

8520	\$11.20	75	Plain Cl.	6	10 $\frac{1}{16}$	8555	....	1062
8520-HR	15.15	75	Heat-Res.	6 $\frac{3}{8}$	10 $\frac{1}{16}$	8555	....	1094
8525	13.10	150	Plain Cl.	8 $\frac{1}{4}$	13 $\frac{3}{8}$	8572	....	1063
8525-HR	18.55	150	Heat-Res.	8 $\frac{3}{8}$	12 $\frac{7}{8}$	8572	....	1095
8521	13.10	200	Plain Cl.	8 $\frac{1}{4}$	13 $\frac{3}{8}$	8556	....	1063
8521-HR	18.55	200	Heat-Res.	8 $\frac{3}{8}$	12 $\frac{7}{8}$	8556	....	1095

### Hoods for Type II-G Dust Tight Lighting Units

Hood includes keyless sockets. Standard package, 10.

For Units With Reflectors				For Units Without Reflectors			
No.	Each			No.	Each		Watts
8550	\$9.80			8555	\$9.80		100
*8551	11.25			8572	11.25		150
†8568	11.25			....	....		150
*8552	11.25			8556	11.25		200
†8569	11.25			....	....		200

\*For use on Dome and Flat Cone Reflector Units Only.

†For use on Bowl and Symmetrical Angle Units Only.

## Type II-G Benjamin Dust-Tight and Moisture-Proof Units

Listed by Underwriters' Laboratories for Class II, Groups E, F, G and Class III and Class IV, Hazardous Locations



No. 665



No. 657

For installation in Class II, Group G, hazardous locations, where combustible organic dusts are in suspension in the atmosphere and are likely to collect on lighting fixtures in sufficient quantities to cause overheating or explosions; also listed for Class II, Group E atmospheres containing metal dust; and Class II Group F, atmospheres containing carbon black, coal or coal dust. Units are also listed for Classes III and IV locations, where ignitable fibers and materials producing combustible flyings are manufactured, handled or stored.

Has one-piece, weatherproof copper casing; tapped for 1/2-inch conduit. Fitted with removable, one-piece, medium base porcelain socket, which has lamp grip to retard loosening of lamp, and is held in place by a retaining ring that threads into the casing.

Glass globe threads into copper casing seats against an impregnated, asbestos gasket. Natural copper finish.

Guard-type units have removable wire guard which threads onto outside of copper casing. Guards are heavy steel wire, welded and finished bright tin.

Packed 10 in standard package.

### Without Guards

No.	Complete Each	Globe Only No.	Each	Size Lamp Watts	Ht. In.	Diam. In.	Ship. Wt., Lb. Std. Pkg.
663	\$2.65	1060	\$ .75	25-60	7 $\frac{5}{8}$	4 $\frac{1}{8}$	21
665	3.45	1062	1.20	75,100,150	9 $\frac{3}{4}$	6	33
665-HR	7.40	1094	4.65	75,100,150	9 $\frac{1}{2}$	6 $\frac{3}{8}$	29 $\frac{1}{2}$
665-OP	6.00	1092	3.40	75,100,150	9 $\frac{1}{2}$	6 $\frac{3}{8}$	33

### With Wire Guards

657	\$4.95	1060	\$ .90	25-60	8 $\frac{1}{2}$	4 $\frac{5}{8}$	24
658	7.60	1062	1.40	75,100,150	10 $\frac{1}{4}$	7 $\frac{1}{2}$	35
658-HR	11.55	1094	5.35	75,100,150	10 $\frac{1}{4}$	7 $\frac{1}{2}$	31
658-OP	10.15	1092	3.95	75,100,150	10 $\frac{1}{4}$	7 $\frac{1}{2}$	35

### Wire Guards Only

No.	Each	Fits Fixture No.	Ht. In.	Diam. In.	Ship. Wt., Lb. Std. Pkg.
1415	\$2.30	663, 657	6 $\frac{1}{8}$	4 $\frac{5}{8}$	5
1428	4.15	665(HR-OP), 658(HR-OP)	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7

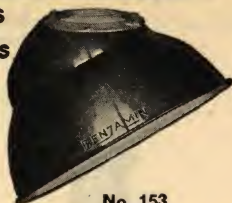




## Benjamin Porcelain Enameled Steel Reflectors For Vapolets



No. 145



No. 153

With cast aluminum ring for attachment to outside threading on lighting Vapolet bodies.

Seamless, acid-resisting reflector; green outside, reflecting white inside.

Threaded cast aluminum rings for 50-60 and 75-100-watt reflectors fit 50-100-watt Vapolet bodies; rings for 150, 150-200 and 200-watt reflectors, fit 150-200-watt Vapolet bodies.

Packed 10 in a standard package.

### Dome Reflectors

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Wt., Lb. Std. Pkg.	Ship.
145	\$2.75	75,100	12	5 $\frac{3}{8}$	24 $\frac{1}{2}$	
146	3.00	150	14	6 $\frac{7}{8}$	31 $\frac{1}{2}$	
147	3.85	200	16	7 $\frac{7}{8}$	40 $\frac{1}{2}$	

### Shallow Dome Reflectors

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Wt., Lb. Std. Pkg.	Ship.
148	\$2.50	75,100	12	5 $\frac{1}{8}$	19	
149	3.00	150	14	6 $\frac{1}{8}$	28	
150	3.60	200	16	7 $\frac{1}{8}$	40	

### 30° Symmetrical Angle Reflectors

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Wt., Lb. Std. Pkg.	Ship.
152	\$2.20	50,60	*10	7 $\frac{1}{4}$	29	
153	3.00	75,100	*12	9 $\frac{3}{8}$	28 $\frac{1}{2}$	
154	3.85	150,200	*16	12 $\frac{3}{8}$	39 $\frac{1}{2}$	

\*Allow the following distances from center line of lamp to wall, No. 152, 6 $\frac{1}{2}$  inches; No. 153, 7 $\frac{3}{4}$  inches; and No. 154, 10 inches.

## Type M Benjamin Junction Vapolets

### Without Lugs

Listed by Underwriters' Laboratories

A standard, 4 $\frac{1}{2}$ -inch diameter, water tight outlet box; 1 $\frac{1}{2}$  inches deep. Made of cast brass or cast iron.

Plain type cover, cast iron. Rubber gasket makes water tight connection between cover and Vapolet.

Iron junction vapolets and covers are sprayed aluminum.



No. 6701

### Bottom Tapped

Size Tapping In.	Vapolet Box Only		Vapolet Box Cover & Gasket	
	No.	Each	No.	Each
1/2	6901A- 1/2	\$ .75	6701A- 1/2	\$1.25
3/4	6901A- 3/4	.75	6701A- 3/4	1.25

### One Side Tapped

Size Tapping In.	Vapolet Box Only		Vapolet Box Cover & Gasket	
	No.	Each	No.	Each
1/2	6901V- 1/2	.75	6701V- 3/4	\$1.25
3/4	6901V- 3/4	.75	6701V- 3/4	1.25
1	6901V-1	.80	6701V-1	1.30

### Feed-Through Tapped

Size Tapping In.	Vapolet Box Only		Vapolet Box Cover & Gasket	
	No.	Each	No.	Each
1/2	6901C- 1/2	\$ .85	6701C- 1/2	\$1.35
3/4	6901C- 3/4	.85	6701C- 3/4	1.35
1	6901C-1	.95	6701C-1	1.45

### Right-Angle Tapped

Size Tapping In.	Vapolet Box Only		Vapolet Box Cover & Gasket	
	No.	Each	No.	Each
1/2	6901L- 1/2	\$ .85	6701L- 1/2	\$1.35
3/4	6901L- 3/4	.85	6701L- 3/4	1.35
1	6901L-1	.95	6701L-1	1.45

### 3-Way Tapped

Size Tapping In.	Vapolet Box Only		Vapolet Box Cover & Gasket	
	No.	Each	No.	Each
1/2	6901T- 1/2	\$ .95	6701T- 1/2	\$1.45
3/4	6901T- 3/4	.95	6701T- 3/4	1.45
1	6901T-1	1.10	6701T-1	1.60

### 4-Way Tapped

Size Tapping In.	Vapolet Box Only		Vapolet Box Cover & Gasket	
	No.	Each	No.	Each
1/2	6901X- 1/2	\$1.05	6701X- 1/2	\$1.55
3/4	6901X- 3/4	1.05	6701X- 3/4	1.55
1	6901X-1	1.25	6701X-1	1.75

### Without Tapping

No.	Each	No.	Each
6901	\$ .65	6701	\$1.15

### Ceiling Flanges

Fits Type M Junction Vapolets. Sprayed aluminum finish.

Weight, 3/4 pound.

No. 6928, 1/2-Inch Male....each \$ .50

No. 6929, 1/2-Inch Female....each .50



## Benjamin Industrial Lighting Vapolets

Listed by Underwriters' Laboratories



Ceiling Type

For use in indoor and outdoor locations where equipment is subjected to rough handling and corrosive fumes, vapors, etc.

Cast iron alloy junction box body; sprayed aluminum finish. One-piece composition receptacle. Plain clear glass globe supplied; for opal, heat-resisting and colored globes, prices on request.

Steel wire guard with cast iron threaded neck guard.



Pendant Type

When specified, brass guards and bodies can be furnished at a slight additional charge.

When desired without guard, deduct price of guard only from price of complete Vapolet, and specify Less Guard after Vapolet number.

### Ceiling Type One Side Tapped

Size Lamp Watts	Size Tapping In.	With Globe and Guard				Without Globe and Guard		Guard Only No.	Globe Only No.
		No.	Each	Ht. In.	Width In.	No.	Each		
15- 60	1/2	7117V	\$5.15	8 1/4	4 7/16	7013V	\$2.65	7069	7080
15- 60	3/4	7127V	5.25	8 1/4	4 7/16	7023V	2.75	7069	7080
15- 60	1	7137V	5.35	8 1/4	4 11/16	7033V	2.85	7069	7080
75-100	1/2	7113V	5.30	9 9/16	4 7/16	7013V	2.65	7070	7062
75-100	3/4	7123V	5.40	9 9/16	4 7/16	7023V	2.75	7070	7062
75-100	1	7133V	5.50	9 9/16	4 11/16	7033V	2.85	7070	7062
150-200	1/2	7114V	6.20	11 1/4	5 5/16	7014V	3.00	7071	6867
150-200	3/4	7124V	6.30	11 1/4	5 5/16	7024V	3.10	7071	6867
150-200	1	7134V	6.40	11 1/4	5 5/16	7034V	3.20	7071	6867

### Feed-Through Tapped

15- 60	1/2	7117C	\$5.15	8 1/4	4 7/16	7013C	\$2.65	7069	7080
15- 60	3/4	7127C	5.25	8 1/4	4 7/16	7023C	2.75	7069	7080
15- 60	1	7137C	5.35	8 1/4	4 11/16	7033C	2.85	7069	7080
75-100	1/2	7113C	5.30	9 9/16	4 7/16	7013C	2.65	7070	7062
75-100	3/4	7123C	5.40	9 9/16	4 7/16	7023C	2.75	7070	7062
75-100	1	7133C	5.50	9 9/16	4 11/16	7033C	2.85	7070	7062
150-200	1/2	7114C	6.20	11 1/4	5 5/16	7014C	3.00	7071	6867
150-200	3/4	7124C	6.30	11 1/4	5 5/16	7024C	3.10	7071	6867
150-200	1	7134C	6.40	11 1/4	5 5/16	7034C	3.20	7071	6867

### Angle Tapped

15- 60	1/2	7117L	\$5.35	8 1/4	4 7/16	7013L	\$2.85	7069	7080
15- 60	3/4	7127L	5.55	8 1/4	4 7/16	7023L	3.05	7069	7080
15- 60	1	7137L	5.75	8 1/4	4 7/16	7033L	3.25	7069	7080
75-100	1/2	7113L	5.50	9 9/16	4 7/16	7013L	2.85	7070	7062
75-100	3/4	7123L	5.70	9 9/16	4 7/16	7023L	3.05	7070	7062
75-100	1	7133L	5.90	9 9/16	4 7/16	7033L	3.25	7070	7062
150-200	1/2	7114L	6.40	11 1/4	5 5/16	7014L	3.20	7071	6867
150-200	3/4	7124L	6.60	11 1/4	5 5/16	7024L	3.40	7071	6867
150-200	1	7134L	6.80	11 1/4	5 5/16	7034L	3.60	7071	6867

### 3-Way Tapped

15- 60	1/2	7117T	\$5.35	8 1/4	4 7/16	7013T	\$2.85	7069	7080
15- 60	3/4	7127T	5.55	8 1/4	4 7/16	7023T	3.05	7069	7080
15- 60	1	7137T	5.75	8 1/4	4 7/16	7033T	3.25	7069	7080
75-100	1/2	7113T	5.50	9 9/16	4 7/16	7013T	2.85	7070	7062
75-100	3/4	7123T	5.70	9 9/16	4 7/16	7023T	3.05	7070	7062
75-100	1	7133T	5.90	9 9/16	4 7/16	7033T	3.25	7070	7062
150-200	1/2	7114T	6.40	11 1/4	5 5/16	7014T	3.20	7071	6867
150-200	3/4	7124T	6.60	11 1/4	5 5/16	7024T	3.40	7071	6867
150-200	1	7134T	6.80	11 1/4	5 5/16	7034T	3.60	7071	6867

### 4-Way Tapped

15- 60	1/2	7117X	\$5.35	8 1/4	4 7/16	7013X	\$2.85	7069	7080
15- 60	3/4	7127X	5.55	8 1/4	4 7/16	7023X	3.05	7069	7080
15- 60	1	7137X	5.75	8 1/4	4 7/16	7033X	3.25	7069	7080
75-100	1/2	7113X	5.50	9 9/16	4 7/16	7013X	2.85	7070	7062
75-100	3/4	7123X	5.70	9 9/16	4 7/16	7023X	3.05	7070	7062
75-100	1	7133X	5.90	9 9/16	4 7/16	7033X	3.25	7070	7062
150-200	1/2	7114X	6.40	11 1/4	5 5/16	7014X	3.20	7071	6867
150-200	3/4	7124X	6.60	11 1/4	5 5/16	7024X	3.40	7071	6867
150-200	1	7134X	6.80	11 1/4	5 5/16	7034X	3.60	7071	6867

For brass or iron plugs, price on request.

### Pendant Type

Size Lamp Watts	Size Tapping In.	Top Tapped			Guard Only No.	Globe Only No.
		No.	Each	Width In.		
15- 60	1/2	7110A	\$5.00	8 $\frac{1}{2}$	7011A	\$2.50
15- 60	3/4	7120A	5.05	8 $\frac{1}{2}$	7021A	2.50
75-100	1/2	7111A	5.20	9 $\frac{1}{16}$	7011A	2.50
75-100	3/4	7121A	5.25	9 $\frac{1}{16}$	7021A	2.55
150-200	1/2	7112A	6.05	11 $\frac{1}{2}$	7012A	2.85
150-200	3/4	7122A	6.10	11 $\frac{1}{2}$	7022A	2.90

Prices do not include wires or lamps.



### Benjamin Heavy Duty Vaporproof Lighting Units

Suitable for use in locations exposed to moisture or non-combustible dust.

The lamp is enclosed in a heavy glass screw globe. A single asbestos gasket between the hood and globe seals the lamp and assures a tight enclosure. A stuffing gland in the hood top seals the wire entrance.

The hood is an aluminum casting designed to accommodate the threaded, copper neck of the heavy gage steel reflector. Reflector rim is tightly closed to assure a smooth unbroken surface for the acid-resisting porcelain enamel. A formed copper gasket provides a cushion between the bottom edges of the hood and the porcelain surfaces of the reflector.

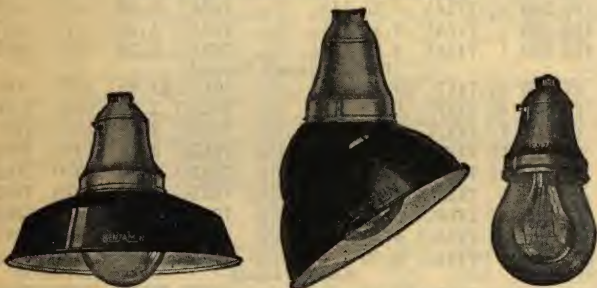
Hood is finished in sprayed aluminum; reflector is green outside, reflecting white inside.

Regularly supplied with plain clear or opal diffusing globes. Can be furnished with heat-resisting globe at an advance over the plain clear globe unit list, \$3.95 for medium and \$5.45 for mogul base units. To order, use suffix number of plain clear globe unit with HR.

Keyless rigid medium or mogul base sockets supplied. When specified, at 20 cents advance in list, shock-absorbing socket can be furnished. To order, suffix fixture number with SHB.

### Benjamin Heavy Duty Vaporproof Pendent Lighting Units

Listed by Underwriters' Laboratories



No. 6501

No. 6518

No. 6527

Hood is regularly tapped  $\frac{1}{2}$  inch standard;  $\frac{3}{4}$  inch when specified.

#### With Dome Reflectors

Size Lamp Watts	With Clear Globe No.	Each	With Opal Globe No.	Each	Diam. Refl. In.	*Ht. In.	Std. Pkg.	Ship. Wt. Lb.
75, 100	6500	\$7.75	6500-OP	\$10.30	12	11 $\frac{3}{4}$	10	58
150	6501	8.40	6501-OP	10.95	14	11 $\frac{3}{4}$	10	64
200	6502	8.85	6502-OP	11.40	16	11 $\frac{3}{4}$	10	71
300, 500	6503	12.85	6503-OP	16.55	18	15 $\frac{1}{4}$	5	65 $\frac{1}{2}$

#### With Bowl Reflectors

150	6506	\$8.25	6506-OP	\$10.80	9	11 $\frac{3}{4}$	10	57
200	6507	8.40	6507-OP	10.95	10	11 $\frac{3}{4}$	10	60
300, 500	6508	10.90	6508-OP	14.60	12	15 $\frac{1}{4}$	5	54 $\frac{1}{2}$

#### With Flat Cone Reflectors

75, 100	6513	\$7.75	6513-OP	\$10.30	14	11 $\frac{3}{4}$	10	61
150	6514	8.75	6514-OP	11.30	16	11 $\frac{3}{4}$	10	67
200	6515	10.40	6515-OP	12.95	18	11 $\frac{3}{4}$	10	67

#### With Symmetrical Angle Reflectors

75, 100	6517	\$8.30	6517-OP	\$10.85	10	12 $\frac{3}{8}$	10	57
150, 200	6518	9.25	6518-OP	11.80	12	15 $\frac{1}{8}$	10	65
300, 500	6519	12.25	6519-OP	15.95	14	18	5	56

#### Without Reflectors

Size Lamp Watts	With Clear Globe No.	Each	With Opal Globe No.	Each	Diam. Globe In.	*Ht. In.	Std. Pkg.	Ship. Wt. Lb.
50, 100	6526	\$5.65	6526-OP	\$8.20	16	9 $\frac{3}{4}$	10	44
150, 200	6527	5.70	6527-OP	8.25	16	11 $\frac{3}{4}$	10	48
300, 500	6528	6.90	6528-OP	10.60	18 $\frac{1}{4}$	15 $\frac{1}{4}$	5	41 $\frac{1}{2}$

\*Heights are for clear globe units; for opal or heat-resisting deduct  $\frac{3}{8}$  inch from medium and  $\frac{3}{4}$  inch from mogul unit heights.

†Height taken from top of hood to lower rim of reflector.

‡Clear globe diameter; opal or heat-resisting globe diameter is 6 $\frac{3}{8}$  inches.

§Clear globe diameter; opal or heat-resisting globe diameter is 8 $\frac{3}{8}$  inches.

### Benjamin Heavy Duty Vaporproof Ceiling Lighting Units

Listed by Underwriters' Laboratories



No. 6551

No. 6568

No. 6577

Suitable for use in locations exposed to moisture or non-combustible dust.

#### With Dome Reflectors

For Benjamin Type M 4 $\frac{1}{2}$ -Inch Junction Vapolet Boxes

Size Lamp Watts	With Clear Globe No.	Each	With Opal Globe No.	Each	Diam. Refl. In.	*Ht. In.	Std. Pkg.	Ship. Wt. Lb.
75, 100	6550	\$7.95	6550-OP	\$10.50	12	11	10	59 $\frac{1}{2}$
150	6551	8.60	6551-OP	11.15	14	11	10	65 $\frac{1}{2}$
200	6552	9.05	6552-OP	11.60	16	11	10	73
300, 500	6553	13.05	6553-OP	16.75	18	14 $\frac{1}{2}$	5	71 $\frac{1}{2}$

For Standard 4-Inch Round or Octagonal Boxes

75, 100	6650	\$7.95	6650-OP	\$10.50	12	11	10	61 $\frac{1}{2}$
150	6651	8.60	6651-OP	11.15	14	11	10	67 $\frac{1}{2}$
200	6652	9.05	6652-OP	11.60	16	11	10	75
300, 500	6653	13.05	6653-OP	16.75	18	14 $\frac{1}{2}$	5	65

#### With Bowl Reflectors

For Benjamin Type M 4 $\frac{1}{2}$ -Inch Junction Vapolet Boxes

150	6556	\$8.45	6556-OP	\$11.00	9	11	10	58
200	6557	8.60	6557-OP	11.15	10	11	10	61 $\frac{1}{2}$
300, 500	6558	11.10	6558-OP	14.80	12	14 $\frac{1}{2}$	5	60 $\frac{1}{2}$

For Standard 4-Inch Round or Octagonal Boxes

150	6686	\$8.45	6686-OP	\$11.00	9	11	10	60
200	6687	8.60	6687-OP	11.15	10	11	10	63 $\frac{1}{2}$
300, 500	6688	11.10	6688-OP	14.80	12	14 $\frac{1}{2}$	5	54

#### With Flat Cone Reflectors

For Benjamin Type M 4 $\frac{1}{2}$ -Inch Junction Vapolet Boxes

75, 100	6563	\$7.95	6563-OP	\$10.50	14	11	10	62 $\frac{1}{2}$
150	6564	8.95	6564-OP	11.50	16	11	10	68 $\frac{1}{2}$
200	6565	10.60	6565-OP	13.15	18	11	10	70

For Standard 4-Inch Round or Octagonal Boxes

75, 100	6663	\$7.95	6663-OP	\$10.50	14	11	10	65
150	6664	8.95	6664-OP	11.50	16	11	10	71
200	6665	10.60	6665-OP	13.15	18	11	10	73

#### With Symmetrical Angle Reflectors

For Benjamin Type M 4 $\frac{1}{2}$ -Inch Junction Vapolet Boxes

75, 100	6567	\$8.50	6567-OP	\$11.05	10	11 $\frac{1}{8}$	10	58 $\frac{1}{2}$
150, 200	6568	9.45	6568-OP	12.00	12	14 $\frac{3}{8}$	10	66
300, 500	6569	12.45	6569-OP	16.15	14	17 $\frac{1}{4}$	5	62

For Standard 4-Inch Round or Octagonal Boxes

75, 100	6667	\$8.50	6667-OP	\$11.05	10	11 $\frac{5}{8}$	10	61
150, 200	6668	9.45	6668-OP	12.00	12	14 $\frac{3}{8}$	10	68 $\frac{1}{2}$
300, 500	6669	12.45	6669-OP	16.15	14	17 $\frac{1}{4}$	5	56

#### Without Reflectors

For Benjamin Type M 4 $\frac{1}{2}$ -Inch Junction Vapolet Boxes

50, 100	6576	\$5.85	6576-OP	\$8.40	16	9	10	41
150, 200	6577	5.90	6577-OP	8.45	16	11	10	44
300, 500	6578	7.10	6578-OP	10.80	18 $\frac{1}{4}$	14 $\frac{1}{2}$	5	47 $\frac{1}{2}$

For Standard 4-Inch Round or Octagonal Boxes

50, 100	6676	\$5.85	6676-OP	\$8.40	16	9	10	38
150, 200	6677	5.90	6677-OP	8.45	16	11	10	46
300, 500	6678	7.10	6678-OP	10.80	18 $\frac{1}{4}$	14 $\frac{1}{2}$	5	44

\*Heights are for clear globe units; for opal or heat-resisting deduct  $\frac{3}{8}$  inch from medium and  $\frac{3}{4}$  inch from mogul unit heights.

†Heights taken from top of hood to lower rim of reflector.

‡Clear globe diameter; opal or heat-resisting globe diameter is 6 $\frac{3}{8}$  inches.

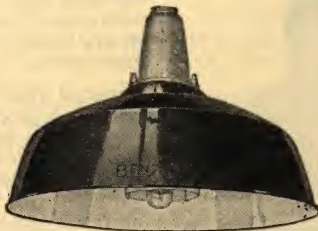
§Clear globe diameter; opal or heat-resisting globe diameter is 8 $\frac{3}{8}$  inches.



## Benjamin 400-Watt Mercury Lamp Units

Will not operate on ordinary lighting circuits unless special transformer or reactor equipment is provided.

### With 22-Inch Spread Porcelain Dome



No. 5485

For use with the standard 400-watt mercury lamp in general lighting installations.

The porcelain enameled steel dome shaped reflector provides uniform illumination on both horizontal and vertical surfaces and its 78° cut-off (bottom of light source) is lowered to 61° by the opal glass cylinder surrounding the lower portion of the lamp, which is furnished as standard.

Unit is available with spun steel neck for use with any of three Turnlox hoods or socket-reflector X fitting.

Turnlox ceiling hood fits 3/4 or 4-inch standard round or octagonal outlet boxes. Other Turnlox hoods and all X fittings tapped 1/2-inch standard; 3/4-inch if specified. Reflector is porcelain enameled steel, green outside, white inside.

Standard package, 4.

No.	Each	Type	Neck	DIMENSIONS, IN.	
				Diameter	Height
5485	\$10.00	Socket Reflector	Steel	22	15 1/4
7485	11.15	Turnlox Pendant	Steel	22	17
9485	11.15	Turnlox Ceiling	Steel	22	16 5/8
3485	11.15	Turnlox Angle	Steel	22	17 5/8

### With 20-Inch Porcelain Dome



No. 5480

For use with standard 400-watt mercury lamp in general lighting conditions.

The dome shaped reflector provides uniform illumination on both horizontal and vertical surfaces and its 72 1/2° angle of cut-off (bottom of light source) minimizes glare.

Available with spun steel neck for use with any of three Turnlox hoods or socket-reflector X fitting. An auxiliary reflector is provided to assure maximum light output.

Standard package, 4.

No.	Each	Type	Neck	DIMENSIONS, IN.	
				Diameter	Height
5480	\$10.00	Socket Reflector	Steel	20	15 1/2
7480	11.15	Turnlox Pendant	Steel	20	17 1/4
9480	11.15	Turnlox Ceiling	Steel	20	16 7/8
3480	11.15	Turnlox Angle	Steel	20	17 7/8

## Benjamin Steelite Armor-Clad Lighting Units

Listed As Vapor Tight by Underwriters' Laboratories, Inc.



Designed to stand up under severe mechanical strain and unfavorable atmospheric conditions.

Consists of a highly efficient Alzak aluminum reflector, enclosed in a protective steel housing to guard against damage caused by rough handling or from flying metal particles. The bottom of this housing is sealed against dust, moisture, and corrosive fumes by

a hinged cover, equipped with heat and impact-resisting glass which offers resistance to sudden impacts and is impervious to temperature changes.

Diameter of reflector, 18 inches. Overall diameter, 20 1/2 inches.

**Narrow Beam Units.** Recommended for lighting relatively small areas to a high intensity or for use where units must be mounted a considerable distance from the lighted surface. Equipped with an Alzak reflector having a satinized polished reflecting surface.

**Concentrating Units.** Recommended for lighting high narrow bays. Equipped with an Alzak reflector, with inner surfaces of etched aluminum, which concentrates light directly below the unit with most favorable illumination on horizontal surfaces.

**Spread Units.** For general industrial lighting; have an Alzak reflector with inner surfaces of etched aluminum. Provides a relatively broad distribution of light and gives uniform illumination on both horizontal and vertical surfaces.

Provided with X-type separable fitting tapped 1/2 inch standard, 3/4 inch if specified. Sockets are keyless, rigid, mogul base type with finger type lamp grip.

Packed 1 in a standard package.

Type of Distribution	For 750-1500-Watt Lamps		For 400-Watt Mercury Lamps		Recom. Mtg. Ft.	Ship. Wt. Lb.
	No.	Each	No.	Each	Ht. In.	Std. Pkg.
Narrow Beam	5280	\$39.65	5285	\$39.65	Over 46	18 1/2
Concentrating	5281	37.40	5286	37.40	35-45	18 1/2
Spread	5282	37.40	5287	37.40	18-34	18 1/2

SHOCK-ABSORBING SOCKETS supplied at 20 cents advance in price. To order, suffix number with SHB.

## Benjamin Emblem Sign Reflectors

Listed by Underwriters' Laboratories, Inc.



For lighting circular emblem signs of the type used around automobile service and gasoline filling stations and other similar small signs.

When installed as recommended, this reflector is neat and inconspicuous and does not interfere with the readability of the sign, day or night.

Conduit is led straight into side outlet of reflector hood. Hood, with reflector, is screwed to conduit, and drilled for attaching guy wires. Cast iron hood is electroplated; side outlet tapped for 1/2

inch standard, 3/4 inch when specified.

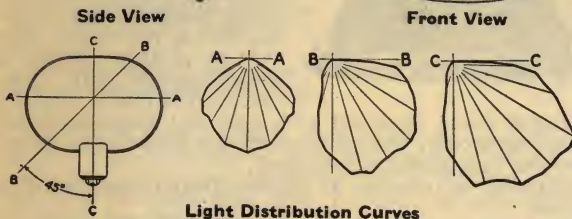
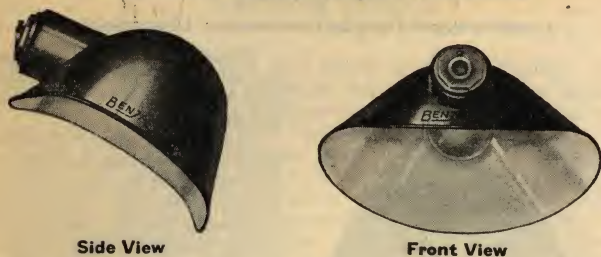
Has one-piece porcelain sockets, with easily accessible terminal screws. Symmetrical reflector is porcelain enameled steel, green outside and white inside.

Packed 10 in a standard package.

No.	Each	Size Lamp	Height	Diameter	Ship. Wt. per Std. Pkg.	\$1821-L	\$1822-L	\$1823-L
No. ....	Each	..... watts	..... inches	..... inches	..... lb.	\$3.00	3.00	3.20
						50-60	75, 100	150
						9 3/8	10 1/8	12 5/8
						8	8	10
						20	22 1/2	32 1/2



## Benjamin Master Sign Reflectors



Light Distribution Curves

Recommended for use on standard poster panels, standard city or suburban bulletins, 3-sheet poster panels, standard store bulletins and other types of signs; also standard highway bulletins, railroad metropolitan or highway bulletins.

Elliptical shaped reflector is porcelain enameled steel with side outlet. Regularly finished green outside, reflecting white inside; can be furnished white outside at no extra charge.

Has angle X-type weatherproof separable fitting with set screw. Tapped  $\frac{1}{2}$  inch, standard;  $\frac{3}{4}$  inch, if specified. Has one-piece porcelain, medium base rigid keyless socket with lamp grip to retard loosening of lamps under vibration.

Packed 9 in a standard package.

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Width In.	Wt., Lb. Std. Pkg.	Ship.
5570	\$4.15	100, 150	$13\frac{1}{2} \times 9\frac{1}{8}$	$8\frac{3}{4}$	$8\frac{7}{8}$	33	33
5571	4.85	150, 200	$13\frac{1}{2} \times 9\frac{1}{8}$	$9\frac{1}{4}$	$10\frac{1}{8}$	35	35

Prices do not include wires or lamps.

## Benjamin Pit and Tunnel Lighting Units

## For Multiple Circuits

Listed by Underwriters' Laboratories



Proper lighting of pit interiors and vehicles over the pits, lessens the danger of accidents to workers and increases their speed and effectiveness.

The trough-shaped porcelain enameled steel reflector assures maximum light output, while the refracting glass cover con-

centrates the major portion of the light on the underside of the object over the pit.

Suitable for built-in or surface installation in locations like repair shop service pits, railway and traction line repair pits, wash racks, viaducts, tunnels and similar locations. In some types of locations, such as viaducts, tunnels and subways, where lighting requirements are of a general nature, the pit light with a plain glass cover will be found more satisfactory than the refracting.

Fixture consists of a cover and an aluminum box which are held together by four bolts. Cover includes a cast iron frame, a heat-resisting glass cover, a double rubber gasket, which seals cover frame to box and glass to cover frame, and a brass wire guard.

Aluminum box includes a porcelain enameled steel trough-shaped reflector and a keyless socket. Body is tapped  $\frac{1}{2}$ -inch iron pipe size at both ends. When specified on order, body will be tapped either  $\frac{3}{4}$ , 1 or  $1\frac{1}{4}$ -inch iron pipe size, at no advance in list price.

Packed 1 in a standard package.

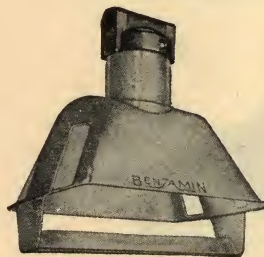
Size Lamp Watts	With Refracting Glass Cover		With Plain Glass Cover		Depth In.	Lgth. In.	Width In.
	No.	Each	No.	Each			
100, 500	5715-AL	\$22.45	5710-AL	\$22.45	$6\frac{1}{2}$	$12\frac{5}{8}$	$8\frac{3}{8}$
*200	5720-AL	25.30	5717-AL	25.30	$7\frac{1}{2}$	13	$8\frac{3}{8}$

\*With wire clamp for feed wires.

Prices do not include wires or lamps.

## Benjamin Stock-Bin-Lite Reflectors

Listed by Underwriters' Laboratories



No. T-1876

For the lighting of stock-room bins and shelves, tool crib bins and shelves, stock-room carton stacks, file rooms, library book stacks and warehouse aisles.

Special deep-trough shaped reflector is porcelain enameled steel, white inside and out. Has apertures in each end to assist in building up illumination at points farthest away. Interchangeable in any of the hoods shown. Can be turned in hoods to any desired position and locked in place by tightening two screws on sides of hoods. Width of reflector,  $7\frac{7}{8}$  inches. Reflector should be mounted level with the top of the highest bin of shelf and the spacing distance between reflectors should never exceed 8 feet. A V-shaped deflector bar,  $11\frac{1}{4}$  inches long, is suspended below reflector to direct a portion of the light upward above the cutoff.

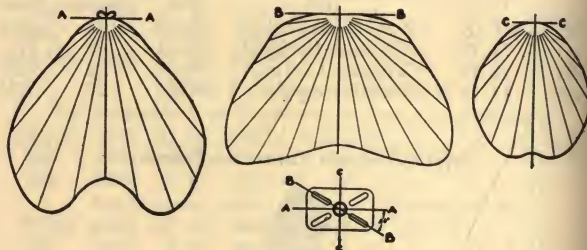
Cast iron hoods are available in pendent, angle, feed-through and outlet box. Pendent and angle hoods tapped  $\frac{1}{2}$  inch standard,  $\frac{3}{4}$  inch when specified (angle also 1 inch), without extra charge. Feed-through hood tapped  $\frac{1}{2}$  inch only. Ceiling hood fits 4-inch standard outlet boxes.

One-piece porcelain, rigid, keyless sockets are standard.

Complete unit consists of hood with reflector and socket.

Packed 10 in a standard package.

Pull Chain Sockets can be supplied, when specified, at 80 cents advance in list price. When ordering, add suffix PUL to number of fixture.



Typical Curves

## Pendent Hood Units

No.	Each	*Size Lamp Watts	Height Inches	Ship. Wt., Lb. Std. Pkg.
E-1875	\$4.40	60	$9\frac{3}{8}$	44
E-1876	4.50	75, 100	$10\frac{5}{8}$	45
E-1877	4.60	150	$11\frac{1}{2}$	46

## Angle Hood Units

No.	Each	*Size Lamp Watts	Height Inches	Ship. Wt., Lb. Std. Pkg.
L-1875	\$4.40	60	$9\frac{3}{4}$	45
L-1876	4.50	75, 100	11	46
L-1877	4.60	150	$11\frac{7}{8}$	47

## Feed-Through Hood Units

No.	Each	*Size Lamp Watts	Height Inches	Ship. Wt., Lb. Std. Pkg.
T-1875	\$4.55	60	$9\frac{3}{4}$	$45\frac{1}{2}$
T-1876	4.70	75, 100	11	$46\frac{1}{2}$
T-1877	4.80	150	$11\frac{7}{8}$	$47\frac{1}{2}$

## Ceiling Hood Units

No.	Each	*Size Lamp Watts	Height Inches	Ship. Wt., Lb. Std. Pkg.
C-1875	\$4.40	60	$8\frac{7}{8}$	47
C-1876	4.50	75, 100	$10\frac{1}{8}$	48
C-1877	4.60	150	11	49

\*Inside frosted lamps are recommended.

Prices do not include wires or lamps.



## Benjamin Socket-Reflectors

## Porcelain Enameled Steel

Sockets and Fittings Listed by Underwriters' Laboratories

Weatherproof, one-piece units, for indoor or outdoor use where interchangeability of reflectors and easy removal for cleaning are not considerations.

Complete unit includes reflector, socket and X-type fitting; an auxiliary aluminum oxide inner reflector which fits around lamp neck is supplied with all reflector sizes where it is of advantage.

The porcelain enameled steel reflector is green outside, reflecting white inside. The finish offers effective resistance to the deteriorating effects of fumes, moisture and grime and is easily cleaned.

Tapped  $\frac{1}{2}$  inch standard; when specified, tapped  $\frac{3}{4}$  inches, or supplied with  $\frac{1}{2}$  inch I.P. size insulating drop cord bushing, No. 1265. Strain relief cord grip at additional charge.

Elliptical angle reflector; medium base units tapped  $\frac{1}{2}$  inch standard,  $\frac{3}{4}$  inch, when specified; mogul units tapped  $\frac{3}{4}$  inch standard.

Symmetrical angle reflector tapped  $\frac{1}{2}$  inch standard,  $\frac{3}{4}$  inch, when specified.

Socket adapter straps, for changing lamp position, furnished at no extra charge.

**SELF-LOCKING SOCKETS:** prevent unauthorized lamp removal; furnished, when specified, on medium-base socket-reflectors. For rigid locking socket, add 50 cents to list price of fixture with regular rigid socket and suffix number of same with LOK. For shock-absorbing locking socket add 60 cents to list price of fixture with regular rigid socket and suffix number of same with ASL. Key No. 1399, for releasing lamps in both types, \$1.15.

Prices do not include wires or lamps.

## RLM Dome Reflectors



No. 5642

Cut-off at  $72\frac{1}{2}^\circ$ .



Typical Curve

Size Lamp Watts	With Keyless Rigid Socket		With Pull Chain Socket		With Keyless Shock- Absorbing Socket		Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt., Lb.
	No.	Each	No.	Each	No.	Each				
75, 100	5641	\$3.80	5641-PUL	\$4.75	5641-SHB	\$4.00	12	$7\frac{1}{2}$	10	$31\frac{3}{4}$
150	5642	4.25	5642-PUL	5.20	5642-SHB	4.45	14	$9\frac{3}{4}$	10	$39\frac{1}{2}$
200	5643	4.70	5643-PUL	5.65	5643-SHB	4.90	16	$10\frac{3}{4}$	10	48
300, 500	5644	6.10	.....	.....	5644-SHB	6.30	18	$12\frac{1}{4}$	5	39
750-1500	5645	8.30	.....	.....	5645-SHB	8.50	20	$14\frac{3}{8}$	5	49

## Shallow Dome Reflectors



No. 5423

Cut-off at  $77\frac{1}{2}^\circ$ .



Typical Curve

Size Lamp Watts	With Keyless Rigid Socket		With Pull Chain Socket		With Keyless Shock- Absorbing Socket		Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt., Lb.
	No.	Each	No.	Each	No.	Each				
50, 60	5437	\$3.70	5437-PUL	\$4.65	5437-SHB	\$3.90	12	$6\frac{1}{2}$	10	$28\frac{1}{2}$
75, 100	5421	3.80	5421-PUL	4.75	5421-SHB	4.00	12	$7\frac{1}{2}$	10	30
150	5423	4.25	5423-PUL	5.20	5423-SHB	4.45	14	$8\frac{3}{4}$	10	36
200	5425	4.70	5425-PUL	5.65	5425-SHB	4.90	16	$9\frac{3}{4}$	10	$43\frac{1}{2}$
300, 500	5509	6.10	.....	.....	5509-SHB	6.30	18	$11\frac{1}{4}$	5	$36\frac{1}{2}$

## Benjamin Socket-Reflectors

## Porcelain Enameled Steel

Sockets and Fittings Listed by Underwriters' Laboratories

## RLM Bowl Reflectors



No. 6169

Cut-off is  $60^\circ$ .



Typical Curve

Size Lamp Watts	With Keyless Rigid Socket		With Pull Chain Socket		With Keyless Shock- Absorbing Socket		Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt., Lb.
	No.	Each	No.	Each	No.	Each				
60	6166	\$3.35	6166-PUL	\$4.30	6166-SHB	\$3.55	7	$6\frac{1}{4}$	10	24
75, 100	6161	3.55	6161-PUL	4.50	6161-SHB	3.75	8	$8\frac{1}{2}$	10	27
200	6169	4.05	6169-PUL	5.00	6169-SHB	4.25	10	$10\frac{3}{4}$	10	$28\frac{1}{2}$
300, 500	6173	6.00	.....	.....	6173-SHB	6.20	12	$12\frac{3}{4}$	5	23
750-1500	6177	7.35	.....	.....	6177-SHB	7.55	16	$16\frac{3}{8}$	5	35

## Flat Cone Reflectors



No. 5402

Cut-off is  $85^\circ$ .



Typical Curve

50, 60	5431	\$3.80	5431-PUL	\$4.75	5431-SHB	\$4.00	14	$5\frac{3}{4}$	10	31
75, 100	5401	3.80	5401-PUL	4.75	5401-SHB	4.00	14	$6\frac{3}{4}$	10	32
150	5402	4.25	5402-PUL	5.20	5402-SHB	4.45	16	$7\frac{3}{4}$	10	$39\frac{1}{2}$
200	5403	4.70	5403-PUL	5.65	5403-SHB	4.90	18	$8\frac{3}{8}$	10	50

Prices do not include wires or lamps.

## Benjamin Angle Socket-Reflectors

## Porcelain Enameled Steel

Listed by Underwriters' Laboratories



No. 5525



No. 5542

## Elliptical Angle Reflectors

Cut-off is  $72\frac{1}{2}^\circ$ .

Size Lamp Watts	With Keyless Rigid Socket		With Pull Chain Socket		With Keyless Shock- Absorbing Socket		Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt., Lb.
	No.	Each	No.	Each	No.	Each				
75, 100	5522	\$4.05	5522-PUL	\$5.00	5522-SHB	\$4.25	$12\frac{3}{4}$	$12\frac{5}{16}$	10	36
150	5525	4.85	5525-PUL	5.80	5525-SHB	5.05	$12\frac{3}{4}$	$13\frac{3}{8}$	10	39
200	5526	5.50	5526-PUL	6.45	5526-SHB	5.70	$16\frac{1}{4}$	$15\frac{3}{8}$	10	49
300, 500	5537	10.00	.....	.....	5537-SHB	10.20	20	$19\frac{1}{8}$	5	37
750-1500	5538	11.15	.....	.....	5538-SHB	11.35	$21\frac{1}{4}$	$21\frac{1}{4}$	2	26

## RLM Symmetrical Angle Reflectors

75, 100	5541	\$3.40	5541-PUL	\$4.35	5541-SHB	\$3.60	8	$9\frac{5}{16}$	10	23
150	5542	3.95	5542-PUL	4.90	5542-SHB	4.15	10	$11\frac{1}{4}$	10	$29\frac{1}{2}$
200	5546	4.55	5546-PUL	5.50	5546-SHB	4.75	12	$13\frac{1}{8}$	10	...
300, 500	5543	5.70	.....	.....	5543-SHB	5.90	14	$17\frac{3}{8}$	5	29

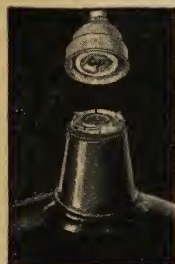
\*Takes 60-watt lamps, if No. 91 socket extension is used.

Prices do not include wires or lamps.



## Benjamin Turnlox Reflectors

Hoods and Lamp Holders Listed by  
Underwriters' Laboratories, Inc.



Bayonet Type  
Coupling

Construction permits reflector, together with lamp, to be taken down with one simple movement.

Unit consists of two separable elements; hood with wiring terminal base, and reflector to which is assembled lamp holding element. Contact is made at any point where reflector heel may be entered in hood. Polarization is by circular design of contacts.

One type of terminal base is standard in ceiling, angle, and pendant type hoods and accommodates reflectors with medium or mogul base lamp holders.

Hood is made of cast metal.

Pendant and angle type are tapped 1/2-inch standard, 3/4-inch if specified.

**Elliptical Angle Type**  
Porcelain Enameled Steel



Hood has a corrosion resisting finish.

Reflector is porcelain enameled steel, green outside, reflecting white inside. Cut-off at 72 1/2 degrees.

Angle hood provides three reflector positions, 120° apart. Use fixture with No. 3 hood where reflector must face directly toward the conduit support; No. 3R, where reflector must face directly away.

**Pendant Type Hood with Reflector and Keyless Rigid Lamp Holder**

No.	Each	Size Lamp Watts	Width In.	Depth In.	Height In.	Size Tap. In.	Std. Pkg.	Ship. Wt., Lb. Std. Pkg.
7522	\$5.20	*75-100	12 3/4	9 1/8	14 1/2	1 1/2	10	48
7525	6.00	150	12 3/4	9 1/8	15 3/8	1 1/2	10	50 1/2
7526	6.65	200	16 1/4	11 1/2	17 1/8	1 1/2	10	60 1/2
7537	11.15	300-500	20	14 3/4	20 7/8	3/4	5	45
7538	12.30	750-1500	21 7/8	14 7/8	23	3/4	5	29

**Ceiling Type Hood with Reflector and Keyless Rigid Lamp Holder**

Fit 3 1/4 or 4-inch standard octagonal or round outlet boxes of 1 1/2 inches or more depth; also plaster covers with mounting holes on 2 3/4-inch centers.

9522	\$5.20	*75-100	12 3/4	9 1/8	14 1/8	...	10	48
9525	6.00	150	12 3/4	9 1/8	15	...	10	50 1/2
9526	6.65	200	16 1/4	11 1/2	16 3/4	...	10	60 1/2
9537	11.15	300-500	20	14 3/4	20 1/2	...	5	45
9538	12.30	750-1500	21 7/8	14 7/8	22 3/8	...	2	30

**Angle Type Hood with Reflector and Lamp Holder**  
With No. 3 Hood Rigid Lamp Holder

3522	\$5.20	*75-100	12 3/4	9 1/8	15 1/8	1 1/2	10	48
3525	6.00	150	12 3/4	9 1/8	16	1 1/2	10	50 1/2
3526	6.65	200	16 1/4	11 1/2	17 3/4	1 1/2	10	54
3537	11.15	300-500	20	14 3/4	21 1/2	3/4	5	45
3538	12.30	750-1500	21 7/8	14 7/8	23 5/8	3/4	2	29

With No. 3R Hood Rigid Lamp Holder

3522R	\$5.20	*75-100	12 3/4	9 1/8	15 1/8	1 1/2	10	48
3525R	6.00	150	12 3/4	9 1/8	16	1 1/2	10	50 1/2
3526R	6.65	200	16 1/4	11 1/2	17 3/4	1 1/2	10	54
3537R	11.15	300-500	20	14 3/4	21 1/2	3/4	5	45
3538R	12.30	750-1500	21 7/8	14 7/8	23 5/8	3/4	2	29

\*Suitable for 60-watt lamps if No. 91 socket extension is used.

†Tapped 3/4 inch size, when specified, without extra charge.

Prices do not include wires or lamps.

## Benjamin Turnlox RLM Dome Reflectors

Porcelain Enameled Steel



Typical Curve

Reflector is seamless porcelain enameled steel, green outside and white inside, with bayonet-lock coupling and porcelain lamp holder. Angle of cutoff, 72 1/2°. Hood and bayonet plate, electro-plated.

**Pendant Type Hood with Reflector and Keyless Rigid Lamp Holder**

Cast metal hood; tapped 1/2 inch standard, 3/4 inch if specified.

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Wt., Lb. Pkg. Std. Pkg.
7641	\$4.95	75, 100	12	9 1/4	10 41
7642	5.40	150	14	10 7/8	10 48
7643	5.85	200	16	12	10 56
7644	7.25	300, 500	18	13 3/4	5 43
7645	9.45	750-1500	20	16 5/8	5 52

**Ceiling Type Hood with Reflector and Keyless Rigid Lamp Holder**

Cast metal hood; fits 3 1/4 or 4-inch standard round or octagonal outlet boxes of 1 1/2 inches or more in depth.

9641	\$4.95	75, 100	12	8 7/8	10 41
9642	5.40	150	14	10 1/2	10 48
9643	5.85	200	16	11 5/8	10 56
9644	7.25	300, 500	18	13 3/8	5 43
9645	9.45	750-1500	20	16 1/4	5 52

## Benjamin Turnlox Glassteel Diffusers



Ceiling and pendant type hoods are provided. Ceiling type has one hole slotted for easy attachment.

Reflectors are white porcelain enameled inside and out, with blue-black bead. Spring clamp globe holder. Hood and bayonet plate are finished to resist corrosion.

**Pendant Type Hood with Keyless Lamp Holder**

Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	With Opal Glass Globe	Wt. Lb. Std. Pkg.
*150, 200	18	13 7/8	4	7201	\$11.50 47
†300	20	15 3/8	4	7204	15.55 64
300, 500	20	15 3/8	4	7202	15.55 60
750, 1000	24 1/2	18 3/8	2	7203	22.45 51

**Ceiling Type Hood with Keyless Lamp Holder**

Cast metal; fits 3 1/4 or 4-inch standard round or octagonal outlet boxes of 1 1/2 inches or more in depth.

*150, 200	18	12 3/4	4	9201	\$11.50 47
†300	20	15	4	9204	15.55 66
300, 500	20	15	4	9202	15.55 60
750, 1000	24 1/2	18	2	9203	22.45 51

\*When using 150-watt lamp, socket extension No. 91 must be used to correctly position lamp in reflector.

†300-watt medium base lamps.

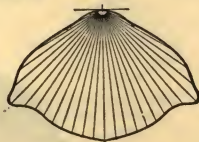
Prices do not include wire or lamps.



**Benjamin Turnlox Shallow Dome Reflectors**

Porcelain Enameled Steel

Hoods and Lamp Holders Listed by Underwriters' Laboratories



Characteristic Distribution Curve

Reflectors are porcelain enameled steel; green outside, white inside. Hood and bayonet plate are electro-plated to prevent corrosion.

**Pendent Hood and Reflector with Keyless Rigid Lamp Holder**

Pendent hoods are cast iron, tapped  $\frac{1}{2}$  inch standard;  $\frac{3}{4}$  inch if specified.

No.	Each	Size Lamp Watts	DIMEN., INCHES Diam.	Height	Std. Pkg.	Wt., Lb. Std. Pkg.
7437	\$4.85	50, 60	12	8 $\frac{1}{4}$	10	40
7421	4.95	75, 100	12	9 $\frac{1}{4}$	10	40 $\frac{1}{2}$
7423	5.40	150	14	10 $\frac{1}{4}$	10	45 $\frac{1}{2}$
7425	5.85	200	16	11 $\frac{1}{4}$	10	54
7509	7.25	300, 500	18	13	5	33

**Ceiling Type Hood and Reflector with Keyless Rigid Lamp Holder**

Ceiling type hoods are of cast iron and fit  $\frac{3}{4}$  or 4-inch octagonal or round outlet boxes of  $1\frac{1}{2}$  inches or more depth.

No.	Each	Size Lamp Watts	DIMEN., INCHES Diam.	Height	Std. Pkg.	Wt., Lb. Std. Pkg.
9437	\$4.85	50, 60	12	7 $\frac{7}{8}$	10	40
9421	4.95	75, 100	12	8 $\frac{7}{8}$	10	40 $\frac{1}{2}$
9423	5.40	150	14	9 $\frac{7}{8}$	10	45 $\frac{1}{2}$
9425	5.85	200	16	10 $\frac{7}{8}$	10	54
9509	7.25	300, 500	18	12 $\frac{5}{8}$	5	41

**Benjamin Turnlox Flat Cone Reflectors**

Porcelain Enameled Steel

Hoods and Lamp Holders Listed by Underwriters' Laboratories, Inc.



No. 7402



Typical Curve

Reflector is porcelain enameled steel; green outside, white inside.

Hood and bayonet plate are electro-plated to prevent corrosion.

**Pendent Type Hood with Reflector and Keyless Rigid Lamp Holder**

Hoods tapped,  $\frac{1}{2}$  inch standard;  $\frac{3}{4}$  inch, if specified.

No.	Each	Size Lamp Watts	Diameter Inches	Height Inches	Std. Pkg.	Shipping Wt., Lb. Std. Pkg.
7431	\$4.95	50-60	14	7 $\frac{1}{8}$	10	43 $\frac{1}{2}$
7411	4.95	75-100	14	8 $\frac{1}{2}$	10	44 $\frac{1}{2}$
7402	5.40	150	16	9 $\frac{1}{2}$	10	52
7403	5.85	200	18	10 $\frac{3}{8}$	10	62 $\frac{1}{2}$

**Ceiling Type Hood with Reflector and Keyless Rigid Lamp Holder**

Hoods fit  $\frac{3}{4}$  or 4-inch octagonal or round outlet boxes of  $1\frac{1}{2}$  inches or more depth; also plaster covers with mounting holes on  $2\frac{3}{4}$ -inch centers.

No.	Each	Size Lamp Watts	Diameter Inches	Height Inches	Std. Pkg.	Shipping Wt., Lb. Std. Pkg.
9431	\$4.95	50-60	14	7 $\frac{1}{8}$	10	46 $\frac{1}{2}$
9411	4.95	75-100	14	8 $\frac{1}{8}$	10	47 $\frac{1}{2}$
9402	5.40	150	16	9 $\frac{1}{8}$	10	55
9403	5.85	200	18	10	10	65 $\frac{1}{2}$

Prices do not include wires or lamps.

**Benjamin Turnlox RLM Symmetrical Angle Reflectors**

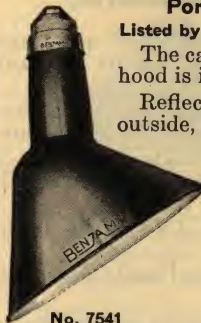
Porcelain Enameled Steel

Listed by Underwriters' Laboratories, Inc.

The cast metal pendent, ceiling and angle type hood is interchangeable and resists corrosion.

Reflector is porcelain enameled steel, green outside, reflecting white inside.

\*Angle hood provides three reflector positions, 120° apart. Use fixtures with No. 3 hoods where reflector must face directly towards the conduit support; No. 3R, where reflector must face directly away from the conduit support. No. 3 hood regularly supplied.



No. 7541

**Pendent Type Hood with Reflector and Lamp Holder**

Hood is tapped  $\frac{1}{2}$  inch standard;  $\frac{3}{4}$  inch, if specified.

Size Lamp Watts	With Keyless Rigid Lamp Holder		With Shock-Absorbing Lamp Holder		Diam. In.	Width In.	Ht. In.	Std. Pkg.	Shipp. Wt., Lb. Std. Pkg.
	No.	Each	No.	Each					
75, 100	7541	\$4.55	7541-SHB	\$4.75	8	7	11 $\frac{1}{16}$	10	34 $\frac{1}{2}$
150	7542	5.10	7542-SHB	5.30	10	8 $\frac{3}{4}$	13 $\frac{1}{2}$	10	41
200	7546	5.70	7546-SHB	5.90	12	10 $\frac{1}{4}$	15 $\frac{1}{16}$	10	43
300, 500	7543	6.85	7543-SHB	7.05	14	12 $\frac{1}{2}$	18 $\frac{3}{4}$	5	35
*750-1500	7544	9.90	7544-SHB	10.10	16	14 $\frac{1}{2}$	21 $\frac{1}{4}$	5	44

**Ceiling Type Hood with Reflector and Lamp Holder**

Hood,  $\frac{3}{4}$  or 4-inch standard octagonal or round outlet boxes of  $1\frac{1}{2}$  inches or more depth; also plaster covers with mounting holes on  $2\frac{3}{4}$ -inch centers.

Size Lamp Watts	No.	Each	No.	Each	Diam. In.	Width In.	Ht. In.	Std. Pkg.	Shipp. Wt., Lb. Std. Pkg.
75, 100	9541	4.55	9541-SHB	\$4.75	8	7	10 $\frac{1}{16}$	10	34 $\frac{1}{2}$
150	9542	5.10	9542-SHB	5.30	10	8 $\frac{3}{4}$	13	10	41
200	9546	5.70	9546-SHB	5.90	12	10 $\frac{3}{4}$	15 $\frac{3}{16}$	10	43
300, 500	9543	6.85	9543-SHB	7.05	14	12 $\frac{1}{2}$	18 $\frac{3}{4}$	5	36
*750-1500	9544	9.90	9544-SHB	10.10	16	14 $\frac{1}{2}$	20 $\frac{7}{8}$	5	44

**Angle Type Hood with Reflector and Lamp Holder**

Hood is tapped  $\frac{1}{2}$  inch standard;  $\frac{3}{4}$  inch, if specified.

Size Lamp Watts	No.	Each	No.	Each	Diam. In.	Width In.	Ht. In.	Std. Pkg.	Shipp. Wt., Lb. Std. Pkg.
75, 100	3541	\$4.55	3541-SHB	\$4.75	8	7	11 $\frac{1}{16}$	10	33
150	3542	5.10	3542-SHB	5.30	10	8 $\frac{3}{4}$	14	10	41 $\frac{1}{2}$
200	3546	5.70	3546-SHB	5.90	12	10 $\frac{3}{4}$	16 $\frac{3}{16}$	10	43
300, 500	3543	6.85	3543-SHB	7.05	14	12 $\frac{1}{2}$	19 $\frac{3}{8}$	5	35
*750-1500	3544	9.90	3544-SHB	10.10	16	14 $\frac{1}{2}$	21 $\frac{7}{8}$	5	41

**Benjamin Turnlox RLM Bowl Reflectors**

Porcelain Enameled Steel

The porcelain enameled steel reflector is green outside, reflecting white inside. Cut-off at 60°. An auxiliary aluminum oxide inner reflector fits around lamp neck.

Hoods and Lamp Holders Listed by Underwriters' Laboratories, Inc.



No. 7169



Typical Curve

**Pendent Type Hood with Reflector and Keyless Rigid Lamp Holder**

Hoods tapped,  $\frac{1}{2}$  inch standard;  $\frac{3}{4}$  inch, if specified.

No.	Each	Size Lamp Watts	Diameter Inches	Height Inches	No. in Std. Pkg.	Shipping Wt., Lb. Std. Pkg.
7156	\$4.50	60	7	8 $\frac{3}{4}$	10	34 $\frac{1}{2}$
7161	4.70	75, 100	8	10 $\frac{1}{4}$	10	38
7169	5.20	200	10	12 $\frac{1}{2}$	10	44
7173	7.15	300, 500	12	14 $\frac{5}{8}$	5	31
7177	8.50	750-1500	16	18 $\frac{1}{4}$	5	43

**Ceiling Type Hood with Reflector and Keyless Rigid Lamp Holder**

Hoods fit  $\frac{3}{4}$  or 4-inch octagonal or round outlet boxes of  $1\frac{1}{2}$  inches or more depth; also plaster covers with mounting holes on  $2\frac{3}{4}$ -inch centers.

No.	Each	Size Lamp Watts	Diameter Inches	Height Inches	No. in Std. Pkg.	Shipping Wt., Lb. Std. Pkg.
9156	\$4.50	60	7	8 $\frac{3}{4}$	10	34 $\frac{1}{2}$
9161	4.70	75, 100	8	9 $\frac{3}{8}$	10	38
9169	5.20	200	10	11 $\frac{1}{8}$	10	44
9173	7.15	300, 500	12	14	5	31
9177	8.50	750-1500	16	17 $\frac{1}{4}$	5	45

Prices do not include wires or lamps.



## Type RR Benjamin Threaded Hood Units

Sockets Listed by Underwriters' Laboratories, Inc.

Suitable for use around railroad yards, steel mills, and other industrial plants where conditions require the most rugged and sturdy equipment.

Allows easy removal of reflectors for cleaning and interchangeability among the various types and sizes of reflectors.

Pendent hood is tapped 1/2-inch standard; 3/4-inch if specified, at the same price. Ceiling hood fits 4-inch standard, octagonal, or round outlet boxes.

Steel hood is finished in green enamel. Cast hood is finished in green paint enamel.

Reflector is finished porcelain enameled steel; green outside, white inside.

Furnished with special shock-absorbing socket which cushions the filament against jars and shocks, at 20 cents additional. To order, suffix number with SHB.

Type RR Hoods with Sockets  
Pendent Cast Hoods

No.	Each	Base	Std. Pkg.	Wt., Lb. Std. Pkg.
No. 26050				
26050	\$2.65	Medium	10	27
26055	3.10	Mogul	5	16



## Ceiling Cast Hoods

No.	Each	Base	Std. Pkg.	Wt., Lb. Std. Pkg.
No. 26045				
26045	\$2.75	Medium	10	24
26049	3.20	Mogul	5	15



## Pendent Steel Hoods

No.	Each	Base	Std. Pkg.	Wt., Lb. Std. Pkg.
No. 26030				
26030	\$1.75	Medium	10	14
26035	2.30	Mogul	5	9



## Ceiling Steel Hoods

No.	Each	Base	Std. Pkg.	Wt., Lb. Std. Pkg.
No. 26025				
26025	\$1.75	Medium	10	12
26029	2.30	Mogul	5	8

Reflectors for Type RR Equipment  
Shallow Dome Reflectors

No. 26416

Best adapted to lighting of yards, warehouses, and platforms, or where it is desired that one unit light a large area.

Cat. No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt., Lb. Std. Pkg.
26412	\$2.50	50, 60	12	2 1/2	10	17
26414	2.95	100, 150	14	3 1/2	10	22
26416	3.40	200	16	4 1/2	10	25
26418	4.25	300, 500	18	5 7/8	5	22 1/2



No. 26108

## RLM Bowl Reflector

For general illumination where lighting of horizontal surfaces is of first importance and where a high intensity is required in a relatively small area.

Cat. No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt., Lb. Std. Pkg.
26108	\$2.25	100	8	4 3/4	10	13 1/2
26110	2.75	200	10	7	10	19
26112	4.15	300, 500	12	8 3/4	5	16

Prices do not include wire or lamps.

## Type RR Benjamin Threaded Hood Units

Sockets Listed by Underwriters' Laboratories, Inc.

## Reflectors for Type RR Equipment

## RLM Dome Reflectors



No. 26014

Reflectors may be removed without the use of tools and given a thorough washing. They are replaced just as easily.

Every threaded reflector will fit any threaded hood in the Benjamin Type RR Lines.

Outside of reflector is Benjamin green; inside is white porcelain enamel.

Cat. No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt., Lb. Std. Pkg.
26012	\$2.50	75, 100	12	4 3/8	10	20
26014	2.95	150	14	5 3/8	10	25
26016	3.40	200	16	6 3/4	10	33 1/2
26018	4.25	300, 500	18	8 7/8	5	28 1/2
26020	6.45	750, 1500	20	10 7/8	5	38

## Fluted Bowl Reflectors



No. 26114

The only type of porcelain enameled steel reflector having an intensive distribution. It is used therefore for high mounting, i.e., 16 feet and upward.

Cat. No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt., Lb. Std. Pkg.
26114	\$4.15	300, 500	14	8 5/8	5	21
26117	8.20	750, 1500	18	11 3/4	5	30

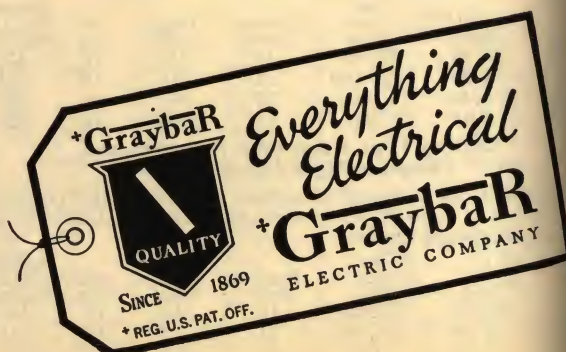
## RLM Symmetrical Angle Reflectors



No. 26232

For illuminating places where light must come from the side.

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt., Lb. Std. Pkg.
26232	\$3.25	200	12	10 3/4	10	44
26234	3.85	300-500	14	13 1/2	5	20
26236	6.90	750-1000	16	15 1/2	5	26





## Benjamin Bowl Shade Holder Reflectors

### RLM



No. 12075N



Characteristic Distribution Curve

For general illumination where the lighting of flat surfaces is of first importance and where a high intensity is required in a relatively small area.

### With Type N Neck for Standard 2 1/4-Inch Shade Holders

No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lb. Std. Pkg.
*12025N	\$1.10	25, 40	5	3 3/8	10	5
12060N	1.75	60	7	4 3/8	10	8
12075N	1.85	75, 100	8	5 3/8	10	13
†12200N	2.55	200	10	8 1/8	10	19 1/2

### With Type S Holder for Benco Sockets and Outlet Box Fittings

No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lb. Std. Pkg.
*12025S	\$1.45	25, 40	5	3 3/8	10	5
12060S	2.10	60	7	4 3/8	10	9
12075S	2.20	75, 100	8	5 3/8	10	14
†12200S	2.90	200	10	8 1/8	10	20 1/2

\*Not RLM standard. †Not RLM standard when used with 150-watt lamps.

## Benjamin Shallow Dome Shade Holder Reflectors



No. 11100



Characteristic Distribution Curve

For general illumination where the lighting requirement is of an extensive character.

### With Type N Neck for Standard 2 1/4-Inch Shade Holders

No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lb. Std. Pkg.
11060N	\$1.70	60	12	4	10	13 1/2
11075N	1.95	75, 100	12	4 3/8	10	14
11100N	2.20	150	14	6	10	22
11200N	2.90	200	16	7	10	31

### With Type S Holder for Benco Sockets and Outlet Box Fittings

No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lb. Std. Pkg.
11060S	\$2.05	60	12	4	10	14
11075S	2.30	75, 100	12	4 3/8	10	15
11100S	2.55	150	14	6	10	22
11200S	3.25	200	16	7	10	31 1/2

## Benjamin Symmetrical Angle Shade Holder Reflectors

### RLM



No. 15075N



Characteristic Distribution Curve

### With Type N Neck for Standard 2 1/4-Inch Shade Holders

No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lb. Std. Pkg.
15040N	\$1.30	25, 40	7	5 1/2	10	8
15060N	1.65	60	8	6 1/8	10	9 1/2
15075N	1.65	75, 100	8	6 7/8	10	11
15100N	2.25	150	10	9 1/8	10	19

### With Type S Holder for Benco Sockets and Outlet Box Fittings

No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lb. Std. Pkg.
15040S	\$1.65	25, 40	7	5 1/2	10	8
15060S	2.00	60	8	6 1/8	10	10
15075S	2.00	75, 100	8	6 7/8	10	11
15100S	2.60	150	10	9 1/8	10	18

## Benjamin Dome Shade Holder Reflectors

Reflector and Lamp Manufacturers' (RLM) Standard



No. 14100N



Type N Shade Holder



Type S Shade Holder

For general illumination when it is desired to avoid reflected glare from the surfaces lighted and to avoid direct glare by having the angle of light cut-off agree with all state lighting codes. Angle of cut-off 72 1/2°.

Type N shade holder reflector is fitted with a neck so shaped as to fit any standard 2 1/4 or 3 1/4-inch shade holder.

Type S shade holder reflector has a screw threaded holder to fit Benco Sockets and Type S Outlet Box Fittings.

Reflectors are green porcelain enamel outside and white inside.

### With Type N Neck for Standard Shade Holder

No.	Each	Size of Lamp Watts	Dimen., In. Diam.	Ht.	Std. Pkg.	Wt. Lb. Std. Pkg.
†14075N	\$2.20	75, 100	12	5	10	18 1/2
14100N	2.55	150	14	6 3/4	10	23
14200N	3.00	200	16	7 3/4	10	30 1/2
*14300N	4.15	300, 500	18	7 7/8	5	24

### With Type S Holder for Benco Sockets and Type S Outlet Box Fittings

No.	Each	Size of Lamp Watts	Dimen., In. Diam.	Ht.	Std. Pkg.	Wt. Lb. Std. Pkg.
†14075S	\$2.55	75, 100	12	5	10	19
14100S	2.90	150	14	6 3/4	10	24 1/2
14200S	3.35	200	16	7 3/4	10	31

\*With 3 1/4-inch fitter. †Not RLM standard when used with 60-watt lamps.

## Benjamin Snap-In Reflector Holders

### Attach to Any Type N Benjamin Reflector with Neck for 2 1/4-Inch Holders

Designed so that when used with Benjamin Reflectors and proper socket equipment, correct location of the lamp in the reflector is assured.

To attach, line up the rivet heads on holder with slots in reflector neck. Then push down with palm of hand, snapping holder into place. The Reflector with holder is then ready for attachment.

Standard package, 10.

Shipping weight per standard package, 2 pounds.

### \*No. 4386—Type A

For attachment to Ben-Ox sockets and fittings.

Made of copper; copper finish.

No. 4386.....each \$ .35

### No. 4384—Type B

For attachment to brass shell sockets with Uno thread.

Made of brass; natural brass finish.

No. 4384.....each \$ .35

### No. 4385—Type P

For attachment to standard porcelain or composition sockets.

Made of copper; bright metal finish.

No. 4385.....each \$ .50

### No. 4383—Type S

For attachment to Benco metal clad sockets and fittings, and other manufacturers' sockets with inside threads.

Made of copper; bright metal finish.

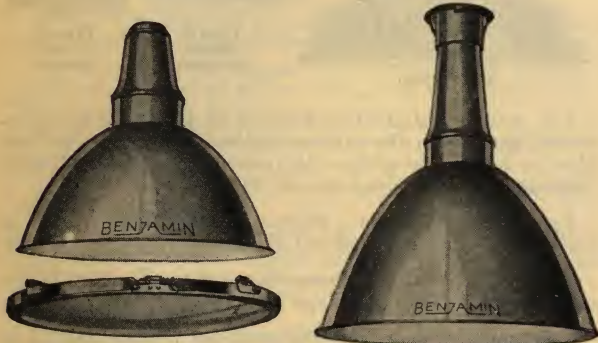
No. 4383.....each \$ .35

\*Type A holder method of attachment is slightly different from the procedure followed on other types.



## Benjamin Concentrating Type Alzak Aluminum Reflectors

For Lighting High Narrow Bays  
Listed by Underwriters' Laboratories



No. 4166 Socket-Reflector with  
No. N-6416 Dust-Tight Cover

No. 9168, Turnlox  
Ceiling Construction



Typical Curve

Recommended for lighting high, narrow rooms, requiring not more than three rows of units, as these reflectors concentrate light on the working plane directly below the units with the most favorable illumination on horizontal surfaces. Suitable for installation where the mounting height of the reflector is equal to or greater than the width of the area to be lighted.

Also satisfactory for use as medium-range open type floodlights.

The spacing distance between units should never exceed the mounting height.

**TURNLOX**; weatherproof bayonet mechanism permits removal of reflector and lamp from hood as a unit, for cleaning or storage. Supplied with Turnlox hoods and No. 2760 rigid, keyless, mogul base lamp holder. Pendent and angle hoods tapped  $\frac{1}{2}$  inch standard,  $\frac{3}{4}$  inch when specified. Ceiling hoods fit  $3\frac{1}{4}$  or 4-inch standard octagonal or round outlet boxes,  $1\frac{1}{2}$  inches or more deep.

**SOCKET-REFLECTOR**; standard Socket-Reflector, separable X-type fittings and No. 4657 keyless, rigid, mogul base sockets. Fitting tapped  $\frac{1}{2}$  inch standard,  $\frac{3}{4}$  inch when specified.

Reflectors are Alzak oxidized etched aluminum inside; natural Alzak outside. Caps on X-type fittings are cast aluminum. Turnlox hoods are finished in baked aluminum paint over electro-plating.

Packed 4 in a standard package.

### For 300-500-Watt Lamps

No.	Each	Type of Construction	Diam. In.	Ht. In.	Wt., Lb. Std. Pkg.	Ship. Lb. Pkg.
7166	\$14.95	Turnlox Pendent.....	16	15 $\frac{3}{4}$	28	
9166	14.95	Turnlox Ceiling.....	16	15 $\frac{3}{8}$	28	
3166	14.95	Turnlox Angle.....	16	16 $\frac{3}{8}$	27	
4166	13.80	Socket-Reflector.....	16	14	21	

### For 750-1500-Watt Lamps

No.	Each	Type of Construction	Diam. In.	Ht. In.	Wt., Lb. Std. Pkg.	Ship. Lb. Pkg.
7168	\$17.85	Turnlox Pendent.....	18	20 $\frac{7}{8}$	34	
9168	17.85	Turnlox Ceiling.....	18	20 $\frac{1}{2}$	34	
3168	17.85	Turnlox Angle.....	18	21 $\frac{1}{2}$	34	
4168	16.70	Socket-Reflector.....	18	19 $\frac{1}{8}$	28	

Prices do not include wires or lamps.

**SHOCK-ABSORBING HOLDERS AND SOCKETS**; supplied in place of rigid type holder and sockets at 10 cents advance in list price. To order, suffix number with SHB.

## Benjamin Spread Type Alzak Aluminum Reflectors

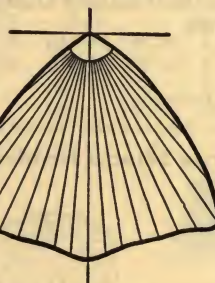
For General Lighting Installation

Sockets Listed by Underwriters' Laboratories



No. 4178, Socket-Reflector  
Construction

No. 7174, Turnlox  
Pendent Construction



Typical Curve

Suitable for general lighting installations where a relatively broad distribution of light and uniform illumination is desired.

Also used as an open type floodlight, where it is desired to cover a relatively large area at close range.

Spacing distance between units should never exceed one and one-quarter times the mounting height.

**TURNLOX**; weatherproof bayonet mechanism permits removal of reflector and lamp from hood as a unit, for cleaning or storage. Supplied with Turnlox hoods and No. 2760 rigid, keyless, mogul base lamp holder. Pendent and angle hoods tapped  $\frac{1}{2}$  inch standard,  $\frac{3}{4}$  inch when specified. Ceiling hoods fit  $3\frac{1}{4}$  or 4-inch standard octagonal or round outlet boxes,  $1\frac{1}{2}$  inches or more deep.

**SOCKET-REFLECTOR**; standard Socket-Reflector, separable X-type fittings and No. 4657 keyless, rigid, mogul base sockets. Fitting tapped  $\frac{1}{2}$  inch standard,  $\frac{3}{4}$  inch when specified.

Reflectors are Alzak oxidized etched aluminum inside, aluminum outside. Caps on X-type fittings are cast aluminum. Turnlox hoods are finished in baked aluminum paint applied over electro-plating.

Packed 4 in a standard package.

### For 300-500-Watt Lamps

No.	Each	Type of Construction	Diam. In.	Ht. In.	Wt., Lb. Std. Pkg.	Ship. Lb. Pkg.
7174	\$12.65	Turnlox Pendent.....	14	15 $\frac{3}{4}$	20	
9174	12.65	Turnlox Ceiling.....	14	15 $\frac{3}{8}$	22	
3174	12.65	Turnlox Angle.....	14	16 $\frac{3}{8}$	25	
4174	11.50	Socket-Reflector.....	14	14	17	

### For 750-1500-Watt Lamps

No.	Each	Type of Construction	Diam. In.	Ht. In.	Wt., Lb. Std. Pkg.	Ship. Lb. Pkg.
7176S	\$14.95	Turnlox Pendent.....	16	18 $\frac{5}{16}$	25 $\frac{1}{2}$	
9176S	14.95	Turnlox Ceiling.....	16	18 $\frac{3}{16}$	27 $\frac{1}{2}$	
3176S	14.95	Turnlox Angle.....	16	19 $\frac{1}{16}$	27 $\frac{1}{2}$	
4176S	13.80	Socket-Reflector.....	16	17 $\frac{1}{16}$	21	
7178	17.85	Turnlox Pendent.....	18	19 $\frac{3}{4}$	27	
9178	17.85	Turnlox Ceiling.....	18	19 $\frac{3}{8}$	29	
3178	17.85	Turnlox Angle.....	18	20 $\frac{3}{8}$	32	
4178	16.70	Socket-Reflector.....	18	18	24	

Prices do not include wires or lamps.

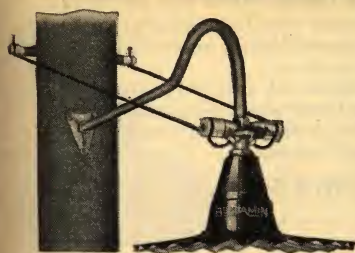
Standard package, 4.

**SHOCK-ABSORBING HOLDERS AND SOCKETS**; supplied in place of rigid type holder and sockets at 10 cents advance in list price. To order, suffix number with SHB.



## Benjamin Radial Wave Outdoor Reflectors

### Porcelain Enameled Steel



No. 1206

Packed 5 in a standard package.

Reflector is 18 inches in diameter, of porcelain enameled steel; green outside, reflecting white inside.

Supplied with porcelain rigid, keyless socket and separable X-type fittings, tapped  $\frac{1}{2}$  or  $\frac{3}{4}$  inch.

Fittings, goosenecks and brackets, electroplated.

### With Gooseneck Supports

Has socket fitting assembly, No. 2368 medium base and No. 4666 mogul base; No. 5037, 40x $\frac{3}{4}$ -inch gooseneck. Nos. 1204 and 1205 include No. 5031 wall fitting; Nos. 1206 and 1207 have No. N-5026-V wall fitting and No. 6203 cross arm. Tapped  $\frac{3}{4}$  inch.

Size Lamp Watts	Concealed Wiring			Open Wiring		
	No.	Each	Wt., Lb. Std. Pkg.	No.	Each	Wt., Lb. Std. Pkg.
150,200	1204	\$8.85	86	1206	\$10.10	87
300,500	1205	10.60	91	1207	11.85	92

### Without Gooseneck

Consists of radial wave reflector used on above fixtures in combination with socket-fitting assembly tapped  $\frac{1}{2}$  inch, No. 2366, medium base; No. 4657, mogul base. When specified, tapped  $\frac{3}{4}$  inch, as supplied on Nos. 1204 to 1207, without extra charge.

150,200	1214	\$5.75	44	....	....	..
300,500	1218	7.50	46	....	....	..

SHOCK-ABSORBING SOCKETS can be supplied when specified at 20 cents advance. To order, suffix number with SHB.

## Benjamin Unit Package Fixtures

Listed by Underwriters' Laboratories, Inc.

Unit consists of a durable porcelain enameled steel reflector, a detachable cast iron hood, No. 1706 medium base receptacle, a section of  $\frac{1}{2}$ -inch conduit with wall or outlet box fitting and two 24-inch lengths of No. 14 gage rubber covered, solid copper, single conductor wire. The conduit entrance in hood has set screw to prevent accidental loosening of assembly.

Reflector is green outside, white inside. Hood, conduit section, and mounting fitting is sprayed aluminum over electro-plating.

Prices do not include lamps.

### Shallow Dome Reflectors with Brackets



For lighting farmyards, barns, stables and driveways. Supplied with a 16-inch length of  $\frac{1}{2}$ -inch conduit and wall fitting. Two lag screws are furnished for attachment.

Complete units are individually packed in attractively labelled shipping containers. Standard package quantity is 5.

No.	Each	Type of Fitting	Style of Wiring	Reflector Diam. Inches
1912	\$4.20	Wall	Open	12
1914	4.55	Wall	Open	14
1916	4.90	Wall	Open	16

## No. 6030 Benjamin Shock Absorber Looped Top Suspension Fittings



Made of iron, with sprayed aluminum finish applied over electro-plating. Tapped,  $\frac{1}{2}$  inch.

Shipping weight per standard package, 11 pounds.

No. 6030.....each \$ .86

## Benjamin Aluminum Goosenecks

### No. 5066A, With Wall Fitting



Regularly furnished with wall fitting No. N5026, but may be furnished if specified, with pole fitting No. 5025 at 20 cents reduction in price.

No.	Each	Standard Length Inches	Size Pipe Inches	Std. Pkg.
5066A	\$1.70	30	$\frac{1}{2}$	10

### No. 5036A, Without Fitting

5036A	\$1.10	30	$\frac{1}{2}$	10
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## Benjamin Hinged For Dust Protection Glass Covers



Complete cover consists of a two-piece electroplated steel retaining band, circular asbestos gasket and a cover glass.

Attaches to all Benjamin reflector equipment having circular openings and beaded edges, where the lamp does not project below the reflector bead. Keeps reflectors at maximum efficiency, as it is necessary only to wipe the smooth outer surface of the glass cover for thorough cleaning.

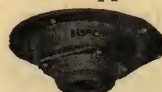
Heat and impact-resisting glass covers will withstand the effects of sudden temp. changes. Packed 5 in a std. pkg.

### Plain Clear Glass Covers

For Reflector Diameter Inches	Plain Clear Glass			Impact-Resisting Glass		
	No.	Each	Ship. Wt., Lb. Std. Pkg.	No.	Each	Ship. Wt., Lb. Std. Pkg.
8	N-6408	\$3.80	8	....	....	..
10	N-6410	4.05	15 $\frac{1}{2}$	....	....	..
12	N-6412	4.30	13 $\frac{1}{2}$	....	....	..
14	N-6414	5.30	18	6384	\$9.95	26
16	N-6416	6.45	22	6386	12.80	33
18	N-6418	7.05	28	6388	17.60	41
20	N-6420	8.90	31 $\frac{1}{2}$	6390	22.45	..
22	N-6422	11.30	52	....	....	..

## Benjamin Flexible Suspension Fittings

Furnished with medium or heavy shock absorber to accommodate various weights of fixtures. Medium springs are for fixtures weighing from 3 to 8 pounds, heavy for 8 to 16 pounds. Specify spring desired, otherwise medium weight will be supplied. Tapped,  $\frac{1}{2}$  inch.



No. 3366

### Outlet Box Cover Type

Has flexible joint, permitting fixture to hang plumb. Mounting screw holes are elongated.

Sprayed aluminum finish applied over electro-plating.

Shipping weight per standard package, 8 pounds.

No. 3366, with Steel Cover for 4-Inch Box.....each \$1.05

No. 3367, with Steel Cover for M Junction Vapolet Box.....each 1.05

### No. 3355 Canopy Type



Fitting is supported by a strap with slots to slip over the screws on the ears of standard 3 $\frac{3}{4}$  and 4-inch outlet boxes. May also be mounted on fixture stud by using stirrups.

Metal parts are electro-plated.

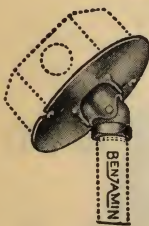
Shipping weight per standard package, 7 pounds.

No. 3355.....each \$1.50



Benjamin Universal Joint 45° Aligners  
Outlet Box Cover Type

Listed by Underwriters' Laboratories, Inc.



Consists of a steel pipe bushing, tapped 1/2 or 3/4 inch, which swings forward or back on two pivot studs joining it to a steel cup. In turn, this cup is hinged to the steel cover of the aligner to allow movement in a plane at right angles to the first, thus providing free movement through 45° in any direction. Sprayed aluminum finish over electro-plating.  
Packed 10 in a standard package; weight, 7 pounds.

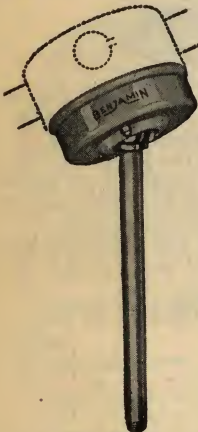
No.	Each	Description	Tap. In.
N-3380	\$ .70	*For 3/4 and 4-In. Rd. & Oct. Outlet Box.	1/2
N-3385	.90	For 4-Inch Square Outlet Box.....	1/2

\*Also fits plaster cover with ears spaced on 2 3/4-inch centers.  
†Supplied tapped 3/4-inch size, when specified, at same price.

Benjamin Porcelain Enameled Stem Suspensions

With 45° Canopy Type Ball Aligners  
Listed by Underwriters' Laboratories, Inc.

For use with standard 3/4 and 4-inch outlet boxes, allowing lighting units to hang plumb from boxes on ceilings having up to 45° slope. Finished in white porcelain enamel.



No. 8906

Has an adjustment feature to compensate for boxes slightly recessed or protruding beyond plaster line. Porcelain enameled steel canopy has a chromium plated die-cast aligner ball, which swivels between two steel plates inside the cover, and a steel mounting strap for attaching to the outlet box or stud. Canopy and aligner plate assembly are joined to the mounting strap by two threaded studs provided with lock and cap nuts. Aligners are provided with metal-to-metal contact for automatic grounding. Canopy cover has 1/2-inch diameter knock-out at the side. Porcelain enamel stems are of 1/2-inch iron pipe size, threaded at both ends. Aligners attach to 3/4 or 4-inch standard round or octagonal boxes using either box ears or a 3/8-inch fixture stud. They also fit 4-inch square boxes by using fixture stud only. For boxes 1 1/2 inches or more deep, a fixture extension is needed. Slotted attaching holes in mounting strap are spaced on 2 3/4 or 3 1/2-inch centers. Packed 5 in a standard package.

With 45° Aligner and Stem			
No.	Each		
8906			8912
Each	\$2.30		2.65
Length Stem.....	inches	12	18
Shipping Weight, Std. Pkg.....	pounds	11 1/2	13 1/2
With 45° Aligner Less Stem			
No.	Each		
			8916
Each			\$1.70
Shipping Weight, Std. Pkg.....	pounds		7 1/4

Benjamin Vaportight Adjustable Hangers

Listed by Underwriters' Laboratories



No. 3395

For alignment of vaportight and other lighting fixtures when outlet box is mounted at an angle. Range of adjustment, 315°. Two-piece ball type cast iron body; gasket sealed at adjustable ball joint. Adjustment controlled by steel bolt joining two sections of fitting while a locking nut prevents accidental loosening. Hexagonal neck at each end of fitting is tapped for conduit entrance. Maximum overall length, 5 5/8 inches. Green lacquer finish. Packed 5 in a standard package.

Shipping weight per standard package, 10 pounds.	
No. 3395, Tapped 1/2 Inch.....	each \$1.65
No. 3396, Tapped 3/4 Inch.....	each 1.65

Benjamin Weatherproof Cable Suspension Fittings

With Hook and Clamp Top—Insulated Wire Openings

Weatherproof fittings with heavily insulated wire openings. Clamp block is adjustable and accommodates cable from 3/16 to 1/2 inch in diameter. Fitting bodies are cast iron. All iron parts are finished in sprayed aluminum applied over electro-plating. Cross arm types supplied with porcelain knobs. Packed 10 in a standard package.

For 2-Wire Service



No. 6037M



No. 6039M

Designed for quick and easy hanging of reflectors from messenger cable, as lighting of outdoor recreational areas.

With Cross Arms		
Shipping weight per standard package, 22 pounds.		
No. 6036, Tapped 1/2-Inch Female.....	each	\$1.75
No. 6037M, Tapped 1/2-Inch Male.....	each	1.75
Without Cross Arms		
Shipping weight per standard package, 15 pounds.		
No. 6038, Tapped 1/2-Inch Female.....	each	\$1.10
No. 6039M, Tapped 1/2-Inch Male.....	each	1.10

Benjamin Weatherproof Pole and Wall Fittings



No. 5025



No. 5026



No. 5031

Pole and Wall Fittings

Has wire entrance slots for open wiring. Hot-dip galvanized. N5026 and N5026V have two porcelain insulating bushings for wire entrance.

Packed 10 in a standard package.		
No.	Each	Description
5025	\$ .60	For Pole.....
N5026	.60	For Wall.....
N5026V	.60	For Wall.....

Wall Fittings

Sprayed aluminum finish over electro-plating. Packed 10 in a standard package.		
5031	\$1.15	Insulated Wire Openings..... 3/4 18
5032	1.15	Insulated Wire Openings..... 1/2 19 1/2

No. 365P Benjamin Pear Shaped Half Shades



For use with desk lamps, bracket lamps, oil gauge lamps, etc. Takes 25 to 60-watt Mazda lamps. Shade can be attached to either standard porcelain sockets or standard brass shell sockets. The shade is of steel, finished in white baked enamel inside, green baked enamel outside. The holder is of steel, with steel attaching screws. Screws and holder are Parkerized. Standard package is 20. Shipping weight per standard package, 10 pounds. No. 365P.....each \$ .70



## Benjamin Reflector Locking Lamp Guards

Made of heavy gage steel wire with welded joints. Bright tin finish, after welding. Clamp is electroplated.

Arranged for, but does not include padlock. For No. 2570 padlock with two keys, add 65 cents to list.

### Shallow Type

For reflector having circular opening and beaded edge, where globe or lamp does not project below reflector bead.



Shallow Type

No.	Each	For Reflector Diameter Inches	Depth Inches	Standard Package	Shipping Weight Pounds Standard Package
1387	\$3.15	12	1	10	7
1389	3.45	14	1 3/4	10	12
1393	3.80	16	1 1/2	10	11 1/2
1391	4.15	17 3/8	2 3/4	10	14
1395	4.15	18	1 3/4	10	14
1397	4.60	20	2	10	16

### Deep Type

Accommodates fixtures in which lamp or enclosing globe projects below reflector bead.

1380	\$2.00	8	1 1/2	10	6
1383	2.30	10	2 3/4	10	6
1385	2.55	11 3/8	2	10	6 1/2
1386	2.80	12	3 3/4	10	8
1388	3.25	14	5	10	10
1392	3.45	16	4 3/4	10	12 1/2
1394	4.15	18	6 1/4	10	17
1396	4.60	20	4	10	18
*1324	5.75	24 1/2	4	2	6 1/2

\*Has a single clamping screw in place of locking lever; not arranged for padlock.

## No. 1263R Benjamin Strain Relief Watertight Cord Grips



Serves as a strain relief cord grip and as a watertight cord bushing for outdoor installations.

Attaches to any reflector fitting tapped 1/2-inch and accommodates any cord from 3/8 to 1/2-inch inclusive.

Consists of steel bushing, brass nut, washer and a rubber stuffing gland. Packed 10 in a standard package. Weight per standard package, 2 pounds.

No. 1263R.....each \$1.30

## No. 1265 Benjamin Insulating Bushings



A composition bushing for drop cord suspension of fixtures tapped 1/2-inch; 1 1/2-inch center hole.

Packed 200 in a standard package.

Weight per standard package, 4 pounds. No. 1265.....each \$.10

## No. 1261 Benjamin Strain Relief Cord Grips



A simple type of fitting which serves both as a strain relief and a cord bushing.

Easily attached to any socket tapped 1/2-inch, and accommodates any cord from 3/8 to 1 1/2-inch diameter, inclusive.

Consists of malleable iron bushing with 1/2-inch iron pipe thread, to which two steel straps, forming the cord grip, are attached by machine screws.

When properly installed, this fitting will relieve the wiring terminals of all strain, transferring it to the body of the socket.

Packed 50 in a standard package.

Weight per standard package, 5 pounds.

No. 1261.....each \$.25

## No. 5429 Hubbell Half Reflectors With Adjustable Holder



Adjustable holder can be securely screwed to the threads on socket shell, and turned as much as one full turn to adjust.

Made of steel; green and white finish.

Size lamp, 25, 40 and 60 watts.

Package weight, 9 pounds.

No. 5429.....per 100 \$70.00

## No. 5564 Hubbell Parabola Reflectors With Adjustable Holder at Side

Size, 6 1/2 Inches



Adjustable holder can be securely screwed to the threads on socket shell, and turned as much as one full turn to adjust.

Made of steel; green and frosted finish.

Size lamp, 25, 40 and 60 watts.

Carton, 1. Standard package, 30. Package weight, 19 pounds.

No. 5564.....per 100 \$156.00

## No. 5432 Hubbell Flat Reflectors For Threading Direct to Brass Shell Sockets



Made of tin; white finish.

Size lamp, 25, 40 and 60 watts. Size, 10 inches.

Carton, 10. Std. pkg., 50.

Package weight, 20 pounds.

No. 5432.....per 100 \$72.00

## Hubbell Cone Reflectors For Threading Direct to Brass Shell Sockets



Made of tin; green, white finish.

Carton, 10. Standard package, 50.

No.	Per 100	Size In.	Size Lamp Watts	Pkg. Wt. Lb.
5440	\$70.00	8	15-25-40	22
5441	88.00	10	25-40-60	29
5442	106.00	12	40-60-100	41

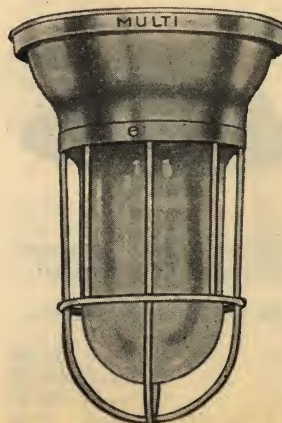
No. 5440P

If the above reflectors are desired for weatherproof sockets, place the letter P after the number and add \$12.00 per 100 to the price.

For brass reflectors in polished nickel or in statuary bronze finish, add 50 per cent to the price. Other special finishes are available; prices upon application.

White interior furnished without extra charge. Aluminum or steel reflectors cannot be furnished in a plated finish.

## Multi Shower Room Vaporproof Fixtures



Consists of a vaporproof receptacle with a welded wire guard supported from a heavy spun metal canopy finished overall in a baked synthetic white enamel.

Standard package, 5.

No.	Each	Overall Diameter Inches	Overall Height Inches	Lamp Size Watts
3070	\$5.40	7 1/2	10	40-60
3071	7.50	8 1/2	11 1/2	100-150



**Multi Reflectors**

Finish: porcelain enameled white inside; green outside.

**Flat Cone**

With Threaded Nipple for 1/2-Inch Pipe



No. 6625

No.	Each	Diameter Inches	Height Inches	Standard Package
6625	\$1.00	10	2 1/4	10
6626	1.25	12	2 3/4	10
6627	1.65	14	3 1/8	10

**Shallow Bowl**

With Low Neck for 2 1/4-Inch Shade Holder



No. 5612

No.	Each	Diameter Inches	Fitter Size, In.	Standard Package
5610	\$ .85	10	2 1/4	10
5612	1.00	12	2 1/4	10
5614	1.30	14	2 1/4	10
5616	1.60	16	2 1/4	10

**Deep Cone**

With Type A Neck for 2 1/4-Inch Holder Shade



No. 6630

No.	Each	Diameter Inches	Height Inches	Standard Package
6630	\$1.20	7	4 1/2	10
6631	1.35	8	5	10
6632	1.60	10	5 1/2	10

**Multi Reflectors****Small Size**for Sewing Machine and Refrigerator  
With Holder for Threaded Brass Shell Socket

Lamp size, 15 to 25 watts.



No. 6638

No.	Each	Diam. Inches	Height Inches	Finish	Std. Pkg.
6638	\$1.05	3 1/2	3 1/8	Porcelain Enameled	10
6639	.75	3 1/2	3 1/8	Aluminum Paint	10

**Special Postoffice Reflectors**

With Shade Holder for Brass Shell Socket



No. 8250

No.	Each	Type	Diam. In.	Lamp Size Watts	Std. Pkg.
4250B	\$1.40	Deep Bowl	7	60	10
4251	1.50	Deep Bowl	8	60	10
8249	1.40	Angle	7	60	10
8250	1.50	Angle	8	60	10

**Multi Gymnasium Fixtures**

Complete With Mounting Ring

Listed by Underwriters' Laboratories, Inc.



No. 3089



No. 3078R

For ceiling mounting so as to be nearly flush. Relamped from below. Entire fixture can be removed for servicing.

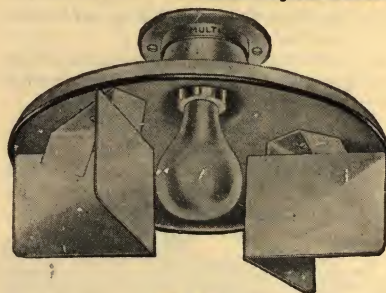
Lamp size, 300 to 500 watts. Reflector diameter, 18 inches.

No. 3078, Without Guard.....	each	\$11.80
No. 3088, With Wire Guard.....	each	14.30
No. 3089, With Cast Guard.....	each	21.30
No. 3078R, Steel Mounting Angle Collar Only.....	each	6.50

**Multi Ile-Lite**

For Bins and Book Stacks

With Keyless Socket



No. 6722

Finish: white Porcelain enamel inside and outside with black bead.

Pendant type is tapped for 1/2-inch pipe. Box cover type is for a 4-inch box.

Diameter Inches	Pendant Type		Box Cover Type		Lamp Size Watts	Std. Pkg.
	No.	Each	No.	Each		
12	6712	\$3.50	6722	\$3.50	100	10
14	6713	3.60	6723	3.60	150	10
16	6714	3.70	6724	3.70	200	10

Also available with bracket type hood and with pull chain sockets. For pull chain socket, add \$.80 to prices. Lamp is not included in price.

**Multi Exit Sign Fixtures**

No. 3062

overall, 15x9x4 inches.

Heavy gage steel box.

Frame and hinged door made of either cast iron or cast bronze.

White, 6-inch letters on red background is standard. Prices on other color combinations on application.

Dimensions: steel box only, 15x9x4 inches; flush mounting over trim, 16x10 inches; surface mounting

Mounting	Cast Iron Frame and Door		Cast Bronze Frame and Door		No.	Each	No.	Each	No.	Each
	Without Guard	With Cast Guard	Without Guard	With Cast Guard						
Flush	3065A	\$11.50	3066	\$12.50	3061	\$16.00	3062	\$17.50		
Surface	3067A	11.25	3068	12.25	3063	15.75	3064	17.25		

**Multi Dust and Moisture-Proof Fixtures**

Listed by Underwriters' Laboratories, Inc.

Designed to afford safety against fire in locations where a combustible dust, suspended in the air or accumulated on the fixtures, may become ignited and explode.

**Construction.** Threaded metal shell carries a porcelain socket, mounted on a rubber gasket, and an enclosing globe. Pendant type is tapped for 1/2-inch pipe. Box cover type is mounted on a steel plate adapter for attaching directly to a 4-inch outlet box. Lamp vertical with receptacle at top.

No. 3124



No. 3132

**Finish.** Metal parts are rust-proofed.  
**4-Inch Box Cover Type**

No.	Each	Overall Height Inches	Lamp Size Watts	Std. Pkg.	Approx. Wt. Lb.
3124	\$1.85	7 3/4	40-60	10	18
3125	2.40	8 3/4	75-150	10	28

**No. 3123 Rubber Gasket**

For use between box and fixture.

No.	Each	Pendant Type	Std.	Approx.
3131	\$2.10	9 1/2	10	20
3132	2.65	11	10	30



## Wheeler 1300 Heavy Duty Railroad Line Lighting Equipment

Recommended for use in machine shops, steel mills, railroad shops, and wherever heavy duty lighting equipment is required.

Fixture consists of a canopy, socket, and porcelain enameled steel reflector. Canopy is supplied with an aluminum screw ring which engages the  $\frac{3}{4}$ -inch screw threaded neck of reflector.

Reflector is porcelain enameled green outside, white inside. Reflector fits all 1300, R, and F canopies.

Wheeler two-piece socket furnished standard. Other sockets as follows:

Bottom Pull Chain Socket, Medium Base Only..each **\$1.35**

Extra for Wheeler Shock-Absorbing Socket, Medium and Mogul Base.....each **.10**

### Canopies

The following canopies are available for use with 1300 reflectors. **When ordering**, specify catalog number of canopy desired and catalog number of reflector.

#### Stamped Canopy R

For  $\frac{1}{2}$ -inch pipe. Overall height  $4\frac{1}{16}$ -inches.



No.	Each	Socket Att'd.	Std. Pkg.	Pkg. Wt.
1318	<b>\$1.85</b>	Medium	10	12
1319	<b>2.20</b>	Mogul	5	8

#### Stamped Canopy F

For 4-inch outlet boxes. Overall height,  $3\frac{1}{2}$ -inches.



No.	Each	Socket Att'd.	Std. Pkg.	Pkg. Wt.
215	<b>\$1.85</b>	Medium	10	15
216	<b>2.20</b>	Mogul	5	10

#### 1300 Cast Industrial Canopy

For  $\frac{1}{2}$ -inch pipe. Overall height  $3\frac{3}{4}$ -inches.



No.	Each	Socket Att'd.	Std. Pkg.	Pkg. Wt.
1325	<b>\$2.65</b>	Medium	10	30
1330	<b>3.10</b>	Mogul	5	15

### 1300 RLM Standard Dome Reflectors



No.	Each	Diam. In.	Watts	Std. Pkg.	Shipping Wt., Lb.
1390	<b>\$2.55</b>	12	100	10	20
1391	<b>2.95</b>	14	150	10	25
1392	<b>3.45</b>	16	200	10	30
1393	<b>4.25</b>	18	300-500	5	25
1394	<b>6.45</b>	20	750-1500	5	40

### 1300 Shallow Dome Reflectors



No.	Each	Diam. In.	Watts	Std. Pkg.	Shipping Wt., Lb.
1357	<b>\$2.55</b>	12	100	10	20
1354	<b>2.95</b>	14	150	10	22
1358	<b>3.45</b>	16	200	10	30
1373	<b>4.25</b>	18	300-500	5	20

## Wheeler RLM One-Piece Solid Neck Reflectors



Standard



Deep Bowl



30° Angle



Shallow

A line of solid neck one-piece reflectors, which have been expertly designed and carefully manufactured to provide maximum lighting efficiency. These units are attractive in appearance, rugged in construction, and will give long, trouble-free service.

Recommended for both indoor and outdoor use in locations where quick removal or interchangeability of reflectors is not important or necessary.

The neck construction provides a rugged 1-piece reflector unit, in which the Wheeler Standard 2-Piece Socket is attached to a brass yoke with a deep hex shoulder. This shoulder fits a hex hole in top of reflector neck, and is securely clamped by an aluminum locknut.

Reflectors are porcelain enameled green outside, white inside. Yokes are tapped  $\frac{1}{2}$ -inch pipe size standard;  $\frac{3}{4}$ -inch pipe size when specified, at no extra charge.

Bottom pull chain medium base sockets can be furnished at \$1.25 extra; shock absorbing sockets at 10 cents extra.

### Standard

No.	Each	DIMENSIONS, IN. Diam. Height	Lamp Watts	Socket Base	Std. Pkg.	Ship. Wt., Lb.
HS-75	<b>\$3.80</b>	12 8 $\frac{1}{4}$	75	Medium	10	35
HS-100	<b>3.80</b>	12 8 $\frac{1}{4}$	100	Medium	10	36
HES-150	<b>4.25</b>	14 9 $\frac{1}{2}$	150	Medium	10	40
HES-200	<b>4.70</b>	16 10 $\frac{1}{2}$	200	Medium	10	45
HES-500	<b>6.10</b>	18 11 $\frac{7}{8}$	300-500	Mogul	5	30

### Deep Bowl

PS-100	<b>\$3.55</b>	8 8 $\frac{5}{8}$	100	Medium	10	25
PES-150	<b>4.05</b>	10 11	150	Medium	10	32
PES-200	<b>4.05</b>	10 11	200	Medium	10	32
PES-500	<b>6.00</b>	12 12 $\frac{1}{2}$	300-500	Mogul	5	22

### 30° Angle

NS-100	<b>\$3.40</b>	8 10	100	Medium	10	29
NES-150	<b>3.95</b>	10 11 $\frac{7}{8}$	150	Medium	10	26
NES-200	<b>4.55</b>	12 13 $\frac{5}{8}$	200	Medium	10	35
NES-500	<b>5.70</b>	14 15 $\frac{3}{8}$	300-500	Mogul	5	25

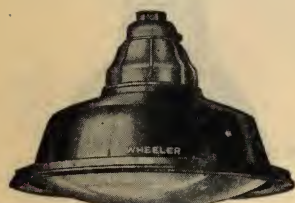
### Shallow

DS-100	<b>\$3.80</b>	12 7 $\frac{1}{4}$	75-100	Medium	10	32
DES-150	<b>4.25</b>	14 8 $\frac{3}{4}$	150	Medium	10	35
DES-200	<b>4.70</b>	16 9 $\frac{3}{4}$	200	Medium	10	40



## Wheeler Class II-G Vapolux Fixtures

**Dust-Tight and Vaporproof**  
For Hazardous Locations  
Approved by Underwriters' Laboratories



Standard



30° Angle

Used in locations where combustible dust atmospheres exist. Typical locations are flour mills, feed mills, grain elevators, starch mills, sugar, cocoa and coal pulverizing plants, and establishments or industries involving similar hazardous processes or conditions.

Consists of a two-piece cast aluminum canopy, socket, aluminum baffle plate, acid-resisting porcelain enameled steel reflector, and a convex shaped heat-resisting cover glass.

Reflector body, with sealed-in cover glass assembly, can be removed as a unit over the lamp by unscrewing from canopy body. Reflectors are porcelain enameled green outside, white inside. Canopies are finished natural aluminum.

Canopies are tapped  $\frac{1}{2}$ -inch standard;  $\frac{3}{4}$ -inch when specified, at no increase in price.

Standard							
For Pendant Suspension Only							
No.	Each	DIMENSIONS, IN.		Lamp Watts	Socket Base	Std. Pkg.	Ship. Wt., Lb.
		Diam.	Height				
2637	\$27.25	14	11	100-150	Medium	2	25
2638	31.75	17 $\frac{1}{4}$	12 $\frac{1}{2}$	200	Medium	2	35
2639	40.50	19 $\frac{1}{2}$	15	300-500	Mogul	1	22

With Combination Cast Outlet Box and Canopy							
2637-OB	\$29.65	14	11 $\frac{1}{2}$	100-150	Medium	2	32
2638-OB	34.15	17 $\frac{1}{4}$	13	200	Medium	2	42
2639-OB	42.90	19 $\frac{1}{2}$	15 $\frac{1}{2}$	300-500	Mogul	1	29

## Wheeler RLM Type C Shade Holder Reflectors



Standard Dome

For Snap-Tite Holders or  
Standard  $2\frac{1}{4}$ -Inch Shade Holder

Reflector is porcelain enameled green outside, white inside.

For Pendant Suspension Only							
No.	Each	DIMENSIONS, IN.		Lamp Watts	Socket Base	Std. Pkg.	Ship. Wt., Lb.
		Diam.	Height				
HC-100	\$2.20	12	5 $\frac{1}{2}$	100	Medium	10	22
HEC-150	2.55	14	6 $\frac{3}{8}$	150	Medium	10	24
HEC-200	3.00	16	7 $\frac{3}{4}$	200	Medium	10	34

## Wheeler Snap-Tite Reflector Holders



Type Q



Type J

For Reflector with Type C Neck  
for  $2\frac{1}{4}$ -Inch Holders

For attaching to reflectors with Type C neck for  $2\frac{1}{4}$ -inch standard shade holders.

**Type J.** For attaching to standard brass shell sockets having Uno thread.

**Type Q.** For attaching to composition or standard porcelain sockets having a shade holder groove.

Type No.	Each	Material	Std. Pkg.	Ship. Wt., Lb.
J 25	\$.35	Brass	10	1
Q 27	.50	Copper	10	1

## Wheeler Isolux Sign Reflectors

Two-Piece Medium Base



Top Outlet Canopy

Designed for lighting signboards and other vertical surfaces.

Made with a separable cast iron canopy, having a hot dipped galvanized finish.

Reflector may be assembled to canopy in either normal or reversed positions.

Two styles: side outlet canopy, tapped for  $\frac{1}{2}$ -inch or  $\frac{3}{4}$ -inch pipe; top outlet canopy, tapped  $\frac{1}{2}$ -inch only.

Unless otherwise specified, reflector will be furnished porcelain enameled green outside, white inside. Also available in white porcelain enamel outside at no increase in price. Other colors available, prices on request.

With Side Outlet Canopy							
DIMENSIONS, IN.							
No.	Each	Height	Mouth Opening	Lamp Watts	Socket Base	Std. Pkg.	Ship. Wt., Lb.
2451-SO	\$4.70	12 $\frac{1}{8}$	11 $\frac{1}{2}$ x8 $\frac{3}{8}$	100	Medium	8	40
2452-SO	4.85	13	11 $\frac{1}{2}$ x8 $\frac{3}{8}$	150	Medium	8	45
2453-SO	4.85	13 $\frac{3}{4}$	11 $\frac{1}{2}$ x8 $\frac{3}{8}$	200	Medium	8	45

With Top Outlet Canopy

No.	Each	Height	Mouth Opening	Lamp Watts	Socket Base	Std. Pkg.	Ship. Wt., Lb.
2451-TO	\$4.70	12 $\frac{3}{8}$	11 $\frac{1}{2}$ x8 $\frac{3}{8}$	100	Medium	8	40
2452-TO	4.85	13 $\frac{1}{4}$	11 $\frac{1}{2}$ x8 $\frac{3}{8}$	150	Medium	8	45
2453-TO	4.85	14	11 $\frac{1}{2}$ x8 $\frac{3}{8}$	200	Medium	8	45

## Two-Piece Mogul Base

Tapped for 1-Inch Pipe

With Side Outlet Canopy

With Side Outlet Canopy							
DIMENSIONS, IN.							
No.	Each	Height	Mouth Opening	Lamp Watts	Socket Base	Std. Pkg.	Ship. Wt., Lb.
2454-SO	\$10.00	19	13 $\frac{3}{4}$ x11 $\frac{1}{8}$	300-500	Mogul	4	30
2458-SO	11.15	20 $\frac{3}{8}$	14 $\frac{5}{8}$ x12 $\frac{3}{8}$	750-1500	Mogul	4	30

With Top Outlet Canopy

No.	Each	Height	Mouth Opening	Lamp Watts	Socket Base	Std. Pkg.	Ship. Wt., Lb.
2454-TO	\$10.00	18 $\frac{3}{8}$	13 $\frac{3}{4}$ x11 $\frac{1}{8}$	300-500	Mogul	4	30
2458-TO	11.15	20	14 $\frac{5}{8}$ x12 $\frac{3}{8}$	750-1000	Mogul	4	30

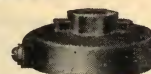
## One-Piece Medium and Mogul Base

For Pendant Suspension Only

For Pendant Suspension Only							
DIMENSIONS, IN.							
No.	Each	Height	Mouth Opening	Lamp Watts	Socket Base	Std. Pkg.	Ship. Wt., Lb.
2373-N	\$4.70	12 $\frac{1}{8}$	11 $\frac{1}{2}$ x8 $\frac{3}{8}$	100	Medium	8	30
2374-N	4.85	13 $\frac{3}{4}$	11 $\frac{1}{2}$ x8 $\frac{3}{8}$	150	Medium	8	35
2375-N	4.85	14 $\frac{1}{2}$	11 $\frac{1}{2}$ x8 $\frac{3}{8}$	200	Medium	8	35
2377-N	10.00	18	13 $\frac{3}{4}$ x11 $\frac{1}{8}$	300-500	Mogul	4	25

Tapped  $\frac{1}{2}$ -Inch Standard,  $\frac{3}{4}$ -Inch When Specified.

## Wheeler Arcolux Two-Piece 30° Angle Sign Reflectors



Top Outlet Canopy

For intensive lighting of small circular and oval signs.

Two styles: side outlet canopy, tapped for  $\frac{1}{2}$  or  $\frac{3}{4}$ -inch pipe; top outlet canopy, tapped for  $\frac{1}{2}$ -inch pipe only.

Reflector may be assembled to canopy in either normal or reversed position.

Supplied with a two-piece removable ring type socket. Reflector is porcelain enameled green outside, white inside. Canopy is finished in baked green enamel.

It is recommended that this reflector be mounted out from the sign a distance approximately equal to half the height of the sign.

With Side Outlet Canopy							
DIMENSIONS, IN.							
No.	Each	Diam.	Height	Lamp Watts	Socket Base	Std. Pkg.	Ship. Wt., Lb.
2491-SO	\$3.00	8 $\frac{1}{8}$	9 $\frac{1}{4}$	75-100	Medium	10	40
2493-SO	3.20	10 $\frac{1}{4}$	11 $\frac{1}{2}$	150-200	Medium	10	40

With Top Outlet Canopy

No.	Each	Diam.	Height	Lamp Watts	Socket Base	Std. Pkg.	Ship. Wt., Lb.
2491-TO	\$3.00	8 $\frac{1}{8}$	9 $\frac{1}{4}$	75-100	Medium	10	40
2493-TO	3.20	10 $\frac{1}{4}$	11 $\frac{3}{4}$	150-200	Medium	10	40



## Wheeler Vaportight Pendent and Ceiling Fixtures

Approved by Underwriters' Laboratories

Wheeler vaportight fixtures are sturdily constructed units, made to resist the deteriorating effects of vaporous and adverse atmospheric conditions.

Fixtures consist of a cast iron canopy with either pendent top or ceiling top, a socket, vaporproof glass globe, and an acid-resisting porcelain enameled steel reflector.

The reflector is securely fastened to the canopy. Reflectors are interchangeable throughout the medium base and mogul base range. A gasket between the globe and canopy and one between the mounting top provide a tight unit.

**Wiring.** By removing the mounting top from the cast canopy, the socket is fully exposed so that wiring to socket terminals is easily done.

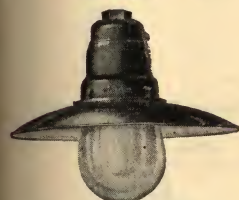
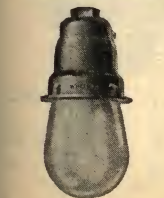
**Canopies and Canopy Tops.** Canopies are durable iron castings. They are supplied with pendent tops for standard 1/2-inch conduit, or with ceiling tops drilled with two holes

to fit any standard 4-inch outlet box. The conduit system is effectively sealed by a stuffing gland, which prevents dirt, moisture or gases from entering system through the fixtures.

**Finish.** The cast iron canopy is finished in baked green enamel. The exterior of the reflector is finished in green porcelain enamel. The reflecting surfaces are white porcelain enamel.

**Glass Globes.** Supplied in clear and opal glass in a squat or pear-shaped design. Pear-shaped globes are used with medium base sockets and have a maximum thread diameter of 4 1/4 inches. Squat globes are used with mogul base sockets, and have a maximum thread diameter of 5 5/8 inches. Globes screw directly into the canopy.

**Wire Guards.** Guards are available for all vaportight fixtures, pendent or ceiling, with or without reflectors.

Pendent Mounting  
Standard DomePendent Mounting  
Deep BowlPendent Mounting  
30° AnglePendent Mounting  
Shallow DomePendent Mounting  
Without Reflector

## Pendent Type

## Standard Dome

No.	Clear Globe Each	No.	Opal Globe Each	DIMENSIONS, IN. Diam. Height	Lamp Watts	Socket Base	Shipping	
							Std. Pkg.	Wt., Lb.
2100	\$7.75	2100-OG	\$10.45	12 1/8 11 1/4	75-100	Medium	10	80
2101	8.30	2101-OG	11.00	13 3/4 11 1/4	150	Medium	10	88
2102	8.85	2102-OG	11.55	16 11 1/4	200	Medium	10	91
2103	12.25	2103-OG	14.90	18 13 1/2	300-500	Mogul	5	65

## Deep Bowl

2105	\$7.90	2105-OG	\$10.60	9 1/4 11 1/4	150	Medium	10	71
2106	8.30	2106-OG	11.00	10 1/4 11 1/4	200	Medium	10	77
2107	11.65	2107-OG	14.30	12 1/8 13 1/2	300-500	Mogul	5	60

## 30° Angle

2110	\$7.75	2110-OG	\$10.45	10 1/4 12	75-100	Medium	10	73
2111	8.30	2111-OG	11.00	12 1/8 14	150-200	Medium	10	78
2112	12.25	2112-OG	14.90	15 3/8 16 1/2	300-500	Mogul	5	63

## Shallow Dome

2115	\$8.30	2115-OG	\$11.00	13 3/4 11 1/4	75-100	Medium	10	76
2116	8.75	2116-OG	11.45	16 11 1/4	150	Medium	10	81
2117	9.35	2117-OG	12.05	18 11 1/4	200	Medium	10	118

## Without Reflector

2120	\$5.50	2120-OG	\$8.20	5 5/8 10 1/4	60-100	Medium	10	60
2121	5.50	2121-OG	8.20	5 5/8 11 1/4	150-200	Medium	10	65
2122	8.50	2122-OG	11.15	8 3/8 13 1/2	300-500	Mogul	5	50

## Ceiling Type

## Standard Dome

2130	\$7.95	2130-OG	\$10.65	12 1/8 11 1/4	75-100	Medium	10	81
2131	8.50	2131-OG	11.20	13 3/4 11 1/4	150	Medium	10	89
2132	9.05	2132-OG	11.75	16 11 1/4	200	Medium	10	92
2133	12.45	2133-OG	15.10	18 13 1/2	300-500	Mogul	5	66

## Deep Bowl

2135	\$8.10	2135-OG	\$10.80	9 1/4 11 1/4	150	Medium	10	72
2136	8.50	2136-OG	11.20	10 1/4 11 1/4	200	Medium	10	78
2137	11.85	2137-OG	14.50	12 1/8 13 1/2	300-500	Mogul	5	61

## 30° Angle

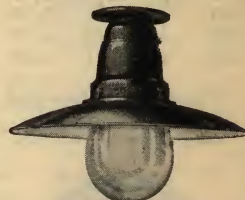
2140	\$7.95	2140-OG	\$10.65	10 1/4 12	75-100	Medium	10	74
2141	8.50	2141-OG	11.20	12 1/8 14	150-200	Medium	10	79
2142	12.45	2142-OG	15.10	15 3/8 16 1/2	300-500	Mogul	5	64

## Shallow Dome

2145	\$8.50	2145-OG	\$11.20	13 3/4 11 1/4	75-100	Medium	10	77
2146	8.95	2146-OG	11.65	16 11 1/4	150	Medium	10	82
2147	9.55	2147-OG	12.25	18 11 1/4	200	Medium	10	119

## Without Reflector

2150	\$5.70	2150-OG	\$8.40	5 5/8 10 1/4	60-100	Medium	10	60
2151	5.70	2151-OG	8.40	5 5/8 11 1/4	150-200	Medium	10	65
2152	8.70	2152-OG	11.35	8 3/8 13 1/2	300-500	Mogul	5	50

Ceiling Mounting  
Standard DomeCeiling Mounting  
Deep BowlCeiling Mounting  
30° AngleCeiling Mounting  
Shallow DomeCeiling Mounting  
Without Reflector



## Wheeler Durex Industrial Canopy and Reflector Combinations

N.E.C. Standard



RLM Standard



Shallow Dome



RLM Deep Bowl



30° Angle

Fixture consists of a canopy, socket, and a porcelain enameled steel reflector.

Recommended for industrial plant lighting, railroad lighting, garage lighting, and wherever rugged, serviceable lighting fixtures are required.

Durex canopies are made in four types and fill the needs of the most difficult and unusual lighting requirements. This line represents one of the most complete developments in modern lighting equipment.

**RLM Standard.** For general industrial lighting.

**Shallow Dome.** For platforms, sheds, warehouses, and yards.

**RLM Deep Bowl.** Recommended for work benches or

elsewhere when concentrated light is desired.

**30° Angle.** For side lighting.

There are two types of Durex canopies for pipe installation, one for outlet box installation and one for drop cord construction. Canopy supplied with an aluminum screw ring which provides a cushion grip on the porcelain enameled threaded neck of the reflector. No set-screw is required to keep reflector in place. No washers, lock nuts, or yokes are necessary. Canopy is short, allowing socket to be exposed for easy wiring when reflector is removed.

Durex reflectors are interchangeable in the various types of Durex canopies.

Porcelain enameled green outside, white inside.

## RLM Standard Dome Reflectors

## Medium Socket Base

Lamp Watts	Std. Pkg.	Reflector Only					Reflector and Durex Cast Pendent Canopy			Reflector and Durex Cast Outlet Box Canopy			Reflector and Durex Side Outlet Canopy			Cast Pendent Canopy with Cord Grip						
		No.	Each	DIMEN., Diam.	In. Ht.	Ship. Wt. Lb.	No.	Each	Diam. In.	Ship. Wt. Lb.	No.	Each	Diam. In.	Ship. Wt. Lb.	No.	Each	Diam. In.	Ship. Wt. Lb.				
75	10	1043	\$2.55	12	6	32	1215	\$4.40	12	44	1235	\$4.40	12	47	1297-S	\$4.40	12	48	1215-CG	\$4.50	12	44
100	10	1042	2.55	12	6 1/2	33	1212	4.40	12	46	1232	4.40	12	48	1292-S	4.40	12	49	1212-CG	4.50	12	46
150	10	1044	2.95	14	7 1/2	41	1214	4.80	14	53	1234	4.80	14	56	1293-S	4.80	14	57	1214-CG	4.90	14	53
200	10	1046	3.45	16	8 1/4	54	1216	5.30	16	68	1236	5.30	16	70	1294-S	5.30	16	72	1216-CG	5.40	16	68
Mogul Socket Base																						
300-500	5	1048	4.25	18	10	39	1218	6.45	18	48	1238	\$6.45	18	49	1295-S	\$6.45	18	50	.....	.....	.....	.....
750-1500	5	1049	6.45	20	13	37	1219	8.65	20	46	1239	8.65	20	47	1296-S	8.65	20	48	.....	.....	.....	.....

## Shallow Dome Reflectors

## Medium Socket Base

Medium Socket Base																	
75-100	10	1053	\$2.55	12 5½	25	1225	\$4.40	12 37	1245	\$4.40	12 39	1196-S	\$4.40	12 39	1225-CG	\$4.50	12 37
150	10	1054	2.95	14 6⅞	30	1224	4.80	14 42	1244	4.80	14 44	1187-S	4.80	14 44	1224-CG	4.90	14 42
200	10	1056	3.45	16 7½	35	1226	5.30	16 47	1246	5.30	16 49	1188-S	5.30	16 49	1226-CG	5.40	16 47
Mogul Socket Base																	
300-500	5	1058	\$4.25	18 9¼	20	1228	\$6.45	18 29	1248	\$6.45	18 31	1189-S	\$6.45	18 31	.....	.....	.....

## RLM Deep Bowl Reflectors

## Medium Socket Base

Medium Socket Base																						
75	10	1059	\$2.20	8	6 <sup>3</sup> / <sub>8</sub>	20	1135	\$4.05	8	31	1141	\$4.05	8	33	1100-S	\$4.05	8	33	1135-CG	\$4.15	8	31
100	10	1060	2.20	8	6 <sup>1</sup> / <sub>2</sub>	20	1136	4.05	8	31	1142	4.05	8	33	1101-S	4.05	8	33	1136-CG	4.15	8	31
150	10	1061	2.80	10	8 <sup>1</sup> / <sub>2</sub>	24	1137	4.65	10	35	1143	4.65	10	37	1102-S	4.65	10	37	1137-CG	4.75	10	35
200	10	1062	2.80	10	9 <sup>1</sup> / <sub>2</sub>	25	1138	4.65	10	36	1144	4.65	10	38	1103-S	4.65	10	38	1138-CG	4.75	10	36
RLM 30° Angle Reflectors																						

## RLM 30° Angle Reflectors

## Medium Socket Base

Lamp Watts	Std. Pkg.	No.	Each	DIMEN., In. Diam. Ht.	No.	Each	Diam. Wt. In. Lb.	No.	Each	Diam. Wt. In. Lb.	No.	Each	Diam. Wt. In. Lb.	No.	Each	Diam. Wt. In. Lb.
75	10	1070A	\$2.15	8 8 1/4	20	1170A	\$4.00	8 32	1190A	\$4.00	8 32	.....	.....	.....	.....	.....
100	10	1070	2.15	8 8 1/4	20	1170	4.00	8 32	1190	4.00	8 32	.....	.....	.....	.....	.....
150	10	1079	2.70	10 10 1/2	26	1179	4.55	10 38	1199	4.55	10 38	.....	.....	.....	.....	.....
200	10	1071	3.20	12 11 1/2	35	1171	5.05	12 47	1191	5.05	12 49	.....	.....	.....	.....	.....

\*Durex Cast Pendent Canopy  
Tapped for 1/2-Inch Pipe



No. ....	1022	1023
Each. ....	\$1.85	2.20
Socket Att'd. ....	Medium	Mogul
Ht. Overall. .... in.	1 3/4	1 3/4
No. in Std. Pkg. ....	10	5
Ship. Wt. .... lb.	14	9

Durex Cast Outlet Box Canopy  
For 4-Inch Outlet Boxes



No. ....	1026	1027
Each. ....	\$1.85	2.20
Socket Att'd. ....	Medium	Mogul
Ht. Overall. .... in.	1 1/2	1 1/2
No. in Std. Pkg. ....	10	5
Ship. Wt. .... lb.	17	11

Durex Side Outlet Canopy  
Tapped for 1/2-Inch Pipe



No. ....	1066	1067
Each. ....	\$1.85	2.20
Socket Att'd. ....	Medium	Mogul
Ht. Overall. .... in.	2 1/4	2 1/4
No. in Std. Pkg. ....	10	5
Ship. Wt. .... lb.	17	11

Durex Cast Pendent Canopy  
With Cord Grip



No. ....	1022CG	1023CG
Each. ....	\$1.95	2.30
Socket Att'd. ....	Medium	Mogul
Ht. Overall. .... in.	2 1/4	2 1/4
No. in Std. Pkg. ....	10	5
Ship. Wt. .... lb.	14	9

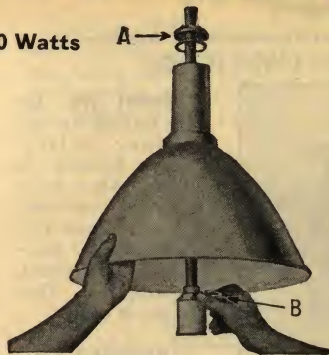
\*Can be supplied tapped for 3/4-inch pipe when specified.



## Revere High, Medium, and Low Bay Lighting Units

No. 6602  
Aluminum Reflector

For 300 to 1500 Watts

No. 5625  
Steel Porcelain Enamel  
with Alzak Aluminum  
Reflector

## Installation

After the socket is threaded tightly on the conduit and wired, unscrew locknut A and remove key-collar B. Then slip the reflector up over the socket and conduit. Replace key-collar and lower reflector into place. Thread on locknut to a snug fit.

Designed for crane bays, auditoriums, stadiums, hangers, gymnasiums, and other large areas with high ceilings.

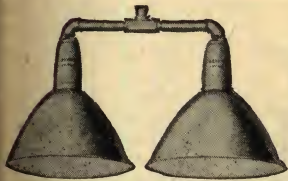
## Features

Alzak aluminum or porcelain enamel reflector.

Three beam spreads. Furnished with plain glass or Herculite glass and hinged covers.

Quick, easy installation and an easy adaptation to any lowering device.

Reflector removal without disturbance of wiring. Two-piece separable socket that is easy to wire with no slack to dispose of. Safe reflector mounting which prevents the reflector from falling even when the locknut is removed. Weatherproof construction. Conduit suspension of  $\frac{1}{2}$  or  $\frac{3}{4}$  inches, and hexagonal caps which permit use of wrench to obtain secure mounting.



Twin-Lite Combination

## Steel Porcelain Enamel with Alzak Aluminum Reflectors

## With 750-1000-Watt Incandescent Lamp

No.	Each	Cover Glass	Height In.	Diam. In.	Class Use	Reflector	Wt. Lb.
5621	\$25.00	None	17 $\frac{7}{8}$	18	High Bay	Alzak	15
5622	31.00	Plain	20 $\frac{1}{2}$	18	High Bay	Alzak	22
5623	40.00	Herculite	19 $\frac{1}{2}$	18	High Bay	Alzak	25
5624	25.00	None	17 $\frac{7}{8}$	18	Med. Bay	Alzak	15
5625	31.00	Plain	20 $\frac{1}{2}$	18	Med. Bay	Alzak	22
5626	40.00	Herculite	19 $\frac{1}{2}$	18	Med. Bay	Alzak	25
5646	8.70	None	19 $\frac{1}{2}$	18	Low Bay	Porcelain	15
5627	14.50	Plain	20 $\frac{1}{2}$	18	Low Bay	Porcelain	22
5628	23.70	Herculite	19 $\frac{1}{2}$	18	Low Bay	Porcelain	25

## With 400-Watt Mercury Lamp

No.	Each	Cover Glass	Height In.	Diam. In.	Class Use	Reflector	Wt. Lb.
5629	\$25.00	None	17	18	Med. Bay	Alzak	15
5630	31.00	Plain	20 $\frac{1}{2}$	18	Med. Bay	Alzak	27
5631	40.00	Herculite	19 $\frac{1}{2}$	18	Med. Bay	Alzak	30
5647	8.70	None	18 $\frac{1}{2}$	18	Low Bay	Porcelain	15
5632	14.50	Plain	19 $\frac{1}{2}$	18	Low Bay	Porcelain	22
5633	23.70	Herculite	18 $\frac{1}{2}$	18	Low Bay	Porcelain	25

## Alzak Aluminum Reflectors

## With 750-1000-Watt Incandescent Lamp

No.	Each	Cover Glass	Diam. In.	Class Use	Wt. Lb.
6601	\$14.50	None	18	Low Bay	10
6602	22.80	Plain	18	Low Bay	18
6603	29.50	Herculite	18	Low Bay	18
6604	14.50	None	18	Medium Bay	10
6605	22.80	Plain	18	Medium Bay	18
6606	29.50	Herculite	18	Medium Bay	18
6607	16.00	None	18	High Bay	10
6608	24.30	Plain	18	High Bay	18
6609	31.00	Herculite	18	High Bay	18

## With 400-Watt Mercury Lamp

No.	Each	Cover Glass	Diam. In.	Class Use	Wt. Lb.
6610	14.50	None	18	Medium Bay	10
6611	22.80	Plain	18	Medium Bay	18
6612	29.50	Herculite	18	Medium Bay	18
6613	16.00	None	18	High Bay	10
6614	24.30	Plain	18	High Bay	18
6615	31.00	Herculite	18	High Bay	18

## With 300-500-Watt Incandescent Lamp

No.	Each	Cover Glass	Diam. In.	Class Use	Wt. Lb.
6616	10.40	None	14	Low Bay	18
6617	16.80	Plain	14	Low Bay	10
6618	20.40	Herculite	14	Low Bay	18
6619	10.40	None	14	Medium Bay	10
6620	16.80	Plain	14	Medium Bay	18
6621	20.40	Herculite	14	Medium Bay	10
6622	12.50	None	14	High Bay	18
6623	18.90	Plain	14	High Bay	18
6624	22.50	Herculite	14	High Bay	18

## With 300-500-Watt Incandescent Lamp

No.	Each	Cover Glass	Height In.	Diam. In.	Class Use	Reflector	Wt. Lb.
5634	\$21.00	None	14 $\frac{3}{4}$	14	Med. Bay	Alzak	14
5635	24.60	Plain	16 $\frac{3}{4}$	14	Med. Bay	Alzak	26
5636	31.00	Herculite	15 $\frac{1}{4}$	14	Med. Bay	Alzak	27
5637	6.50	None	14 $\frac{3}{4}$	14	Low Bay	Porcelain	9
5638	10.10	Plain	16 $\frac{3}{4}$	14	Low Bay	Porcelain	21
5639	16.50	Herculite	15 $\frac{1}{4}$	14	Low Bay	Porcelain	22

## With 750-1000 and 400-Watt Mercury Twin-Lite Lamps

No.	Each	Cover Glass	Height In.	Diam. In.	Class Use	Reflector	Wt. Lb.
5640	\$54.90	None	...	...	Med. Bay	Alzak	39
5641	66.90	Plain	...	...	Med. Bay	Alzak	53
5642	84.90	Herculite	...	...	Med. Bay	Alzak	59
5643	22.30	None	...	...	Low Bay	Porcelain	39
5644	33.90	Plain	...	...	Low Bay	Porcelain	53
5645	52.30	Herculite	...	...	Low Bay	Porcelain	59

## With 250-Watt Mercury Lamp

No.	Each	Cover Glass	Diam. In.	Class Use	Wt. Lb.
6625	\$16.80	Plain	14	Medium Bay	18
6626	20.40	Herculite	14	Medium Bay	18
6627	18.90	Plain	14	High Bay	18
6628	22.50	Herculite	14	High Bay	18

## With 750-1000 and 400-Watt Mercury Twin-Lite Lamps

No.	Each	Cover Glass	Diam. In.	Class Use	Wt. Lb.
6651	33.90	None	18	Low Bay	20
6652	50.50	Plain	18	Low Bay	38
6653	63.90	Herculite	18	Low Bay	38
6654	33.90	None	18	Medium Bay	38
6655	50.50	Plain	18	Medium Bay	40
6656	63.90	Herculite	18	Medium Bay	40
6657	36.90	None	18	High Bay	20
6658	53.50	Plain	18	High Bay	38
6659	66.90	Herculite	18	High Bay	38

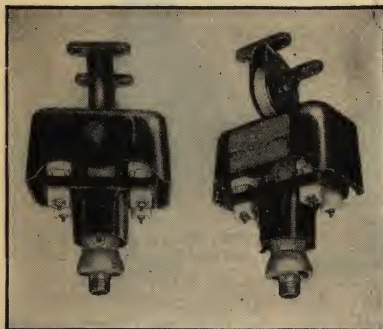
## With 300-500 and 250-Watt Mercury Twin-Lite Lamps

No.	Each	Cover Glass	Diam. In.	Class Use	Wt. Lb.
6660	38.50	Plain	14	Low Bay	38
6661	45.70	Herculite	14	Low Bay	38
6662	38.50	Plain	14	Medium Bay	36
6663	45.70	Herculite	14	Medium Bay	36
6664	42.70	Plain	14	High Bay	36
6665	49.90	Herculite	14	High Bay	36



## Thompson Disconnecting and Lowering Hangers

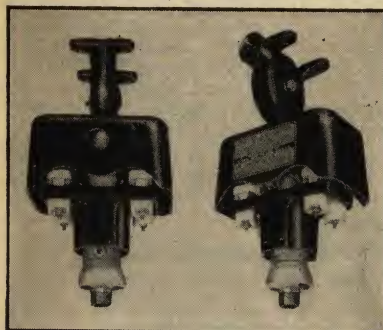
For Indoor Installation—Underwriters' Approved  
3-Way (3 Circuit) 4-Wire (4 Pole)



**Model No. L-321**, having an open face pulley sheave housing is suitable for a wide range of installation conditions. For combination mercury-incandescent fixtures, etc., this hanger is ideal.

Furnished with Type M  $\frac{3}{4}$ -inch male adapter.

Model No. L-321, Black Japan.....each \$18.00  
Model No. L-321, Cadmium Plated or Galv.....each 20.00

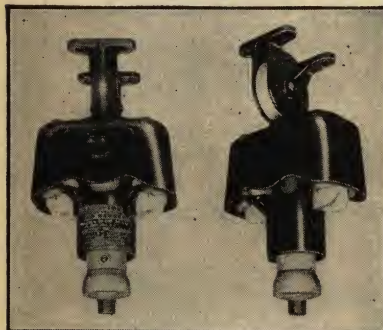


**Model No. L-325** has the enclosed type of pulley sheave housing. The pulley sheave housing is tapped for  $\frac{3}{4}$ -inch conduit for enclosing the operating chain from the hanger to the conduit-type corner pulley (L-607). The chain delivery is confined to horizontal only. Especially suitable

for auditorium use with fixtures of 1, 2, or 3 circuits, such as colored lights, rheostat circuits, etc.

Furnished with Type M  $\frac{3}{4}$ -inch male adapter.

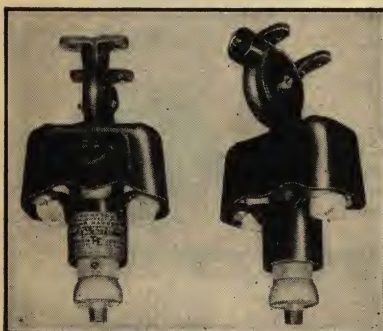
Model No. L-325, Black Japan.....each \$19.50  
Model No. L-325, Cadmium Plated or Galv.....each 21.50  
Single Circuit (2 Pole)



**Model No. L-141** will be found suitable for most inside installations. Open face of sheave housing permits operating chain to enter at any vertical angle up to 15 degrees above horizontal.

Furnished with  $\frac{1}{2}$ -inch male standard adapter.

Model No. L-141, Black Japan.....each \$14.00  
Model No. L-141, Cadmium Plated or Galv.....each 16.00



**Model No. L-145** is suitable only for installations where the operating chain may be run horizontally in  $\frac{3}{4}$ -inch conduit over to a conduit-type (L-607) corner pulley at wall or column. Enclosed pulley and chain is suggested for extremely dusty locations or where it is desired to eliminate

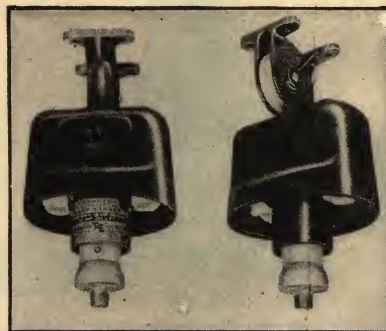
all chain sag between pulleys.

Furnished with  $\frac{1}{2}$ -inch male standard adapter.

Model No. L-145, Black Japan.....each \$15.50  
Model No. L-145, Cadmium Plated or Galv.....each 17.50

## Thompson Disconnecting and Lowering Hangers

For Outdoor Installation—Single Circuit (2-Pole)  
Underwriters' Approved

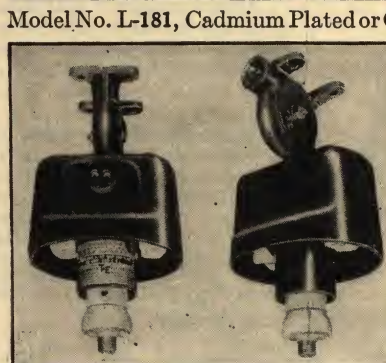


**Model No. L-181** has an open face pulley sheave housing. This permits operating chain to travel at almost any required slope over to pole or wall, clearing brackets, knee braces, etc.

With  $\frac{1}{2}$ -inch male standard adapter.

Model No. L-181, Black

Japan ea. \$15.50  
Cadmium Plated or Galvanized ea. 17.50



**Model No. L-185** provides maximum weather protection. Sheave housing is tapped for  $\frac{3}{4}$ -inch conduit for enclosing operating chain from hanger to corner pulley (L-607). Wherever possible, conduit enclosure of the vertical portion of operating chain is also suggested. Do not bend conduit.

With  $\frac{1}{2}$ -inch male standard adapter.

Model No. L-185, Black Japan.....each \$17.00  
Model No. L-185, Cadmium Plated or Galvanized.....each 19.00

## Thompson Shock Absorbers



These shock absorbers may be used either with Thompson Hangers or separately. Designed primarily to protect lighting fixtures from shock and vibration, they are also adaptable to many other uses.

Simple and rugged in construction, easy to install and without a bolt, screw or nut to work loose, they afford maximum protection with long trouble-free life.

There are two sizes and three types, and a range of springs to cover suspended weights from  $1\frac{1}{2}$  to 65 pounds.

Finish: junior size, cadmium plated; heavy duty size, hot dip galvanized. Bottom fixture connection on all models is  $\frac{1}{2}$ -inch male pipe thread.

Junior Size					Heavy Duty Size				
TOP CONNECTION				Total Weight Pounds of Fixture	TOP CONNECTION				Total Weight Pound of Fixture
$\frac{1}{2}$ -Inch Female	$\frac{3}{4}$ -Inch Male	No.	No.		$\frac{1}{2}$ -Inch Female	$\frac{3}{4}$ -Inch Male	No.	No.	
10L	20L	\$1.90	1 $\frac{1}{2}$ - 5		50L	60L	\$2.90	5-12	
10M	20M	1.90	3 - 8		50M	60M	2.90	9-25	
10H	20H	1.90	5 - 12		50H	60H	3.00	15-40	
.....	.....	.....	.....	.....	50HH	60HH	3.20	30-65	

### Heavy Duty Loop Suspension

The Series 70 Shock Absorbers, having the stem split part way from the top, is designed for free swing suspension and serves both as a shock absorber and adapter.

No.....	70L	70M	70H	70HH
Each.....	\$3.30	3.30	3.40	3.50
Total Weight of Fixture.....pounds	5-12	9-25	15-40	30-65



## Thompson Disconnecting and Lowering Hangers

Unit Packages—For Outdoor Use  
Underwriters' Approved

Since the mounting heights and methods of mounting of outside lights is more uniform, standardization of some of the equipment is possible.

Outdoor lights may be divided into two classification groups; viz., (1) those which hang in a vertical position from a threaded stem connection, such as R.L.M.'s, elliptical angle reflectors, and street lighting type of light; and (2) those which provide for vertical adjustment of the beam and hang from a "U" shaped bail or yoke, such as many of the most popular floodlights. It is therefore possible to make available Unit Packages suitable for these two groups. These two groups with their modifications are listed below.

### For Reflectors with Threaded Stem Connection

These Unit Packages contain—Thompson Hanger (galvanized), corner pulley, flare end, U-bolts and filler blocks, bracket end, slip fit elbow, lock box No. 691, anti-slap chain spring No. 906, and 33 feet of No. 33 galvanized steel chain. For 50-foot length of chain add \$1.40 to prices.

#### Vertical Run of Chain Not Enclosed

No. UPBL-177-1 $\frac{1}{4}$ , For Mounting on 1 $\frac{1}{4}$ -Inch Pipe Bracket.....each	\$32.00
No. UPBL-177-1 $\frac{1}{2}$ , For Mounting on 1 $\frac{1}{2}$ -Inch Pipe Bracket.....each	32.50

#### Vertical Run of Chain Conduit Enclosed

Contents of the following Unit Packages is the same as above except special link No. 911 substituted for anti-slap spring on chain end,  $\frac{3}{4}$ -inch conduit connected lock box No. 692 substituted for open type No. 691, and flare end No. 700 omitted.

No. UPBL-177-1 $\frac{1}{4}$ , For Mounting on 1 $\frac{1}{4}$ -Inch Pipe Bracket.....each	\$35.00
No. UPBL-177-1 $\frac{1}{2}$ , For Mounting on 1 $\frac{1}{2}$ -Inch Pipe Bracket.....each	35.50

### For Floodlights with Bail or Yoke

These Unit Packages contain—Thompson Hanger (galvanized) equipped with conductor cable clamp, special floodlight-adaptor Type R and the other accessories listed above for corresponding numbers.

#### Vertical Run of Chain Not Enclosed

No. UPBL-1177-1 $\frac{1}{4}$ , For Mounting on 1 $\frac{1}{4}$ -Inch Pipe Bracket.....each	\$36.00
No. UPBL-1177-1 $\frac{1}{2}$ , For Mounting on 1 $\frac{1}{2}$ -Inch Pipe Bracket.....each	36.50

#### Vertical Run of Chain Conduit Enclosed

Contents of these Unit Packages same as above except special link No. 911 substituted for anti-slap spring on chain end,  $\frac{3}{4}$ -inch conduit connected lock box No. 692 instead of open type No. 691, and flare end No. 700 omitted.

No. UPBL-1177-1 $\frac{1}{4}$ , For Mounting on 1 $\frac{1}{4}$ -Inch Pipe Bracket.....each	\$39.00
No. UPBL-1177-1 $\frac{1}{2}$ , For Mounting on 1 $\frac{1}{2}$ -Inch Pipe Bracket.....each	39.50

NOTICE Floodlights when lowered must balance so that stem of Hanger lower member is vertical. If floodlight is not supported at a point over its center of gravity (see illustration above) use Channel Balance Arm.

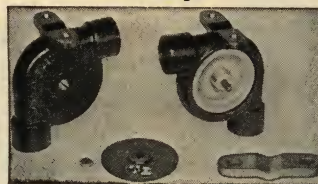
### No. 761 Channel Balance Arm 5-Inch Adjustment

No. 761.....each	\$3.30
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## Accessories for Thompson Disconnecting and Lowering Hangers

For every "Thompson Hanger" installation corner pulleys, and sometimes intermediate pulleys are required. Also operating chain, chain-end-link, and lock box (or grip cleat) for securing operating end of chain will be required. Select the accessories to suit the "Hanger" model used.

### Pulleys



No. L-607



No. L-611

No. L-612



No. L-615

No. L-616

No. ....	L-607	L-611	L-612	L-615	L-616
Black Japan.....each	\$3.30	\$1.70	\$1.80	\$2.20	\$2.60
Cad. or Galv.....each	3.80	1.90	2.00	2.50	2.90

### Steel Arc Lamp Chain

The operating chain required for every installation of Thompson Hangers should be carefully selected from the following table. Select chain according to the total weight of fixture plus connections.

For each operating chain, order one No. 900 and one No. 910 connecting link.

NOTICE: Chain is sold only in multiples of 50 feet.

No.	Hot Galv. per 100 Feet	Weight of Fixtures & Connections Pounds	Rated Tensile Strength Pounds	Connecting Link, 1 per Hanger No.	Wt., Lb. per 100 Feet
35	\$6.00	Under 25	550	910	8
33	7.30	Under 50	725	911	10
31	7.50	Under 70	915	912	13

### Grip Cleat and Lock Boxes



No. 690  
Grip Cleat



No. 691  
Lock Box



No. 692 Lock Box

For securing the free end of the operating chain, choose from the following:

**No. 690 Grip Cleat.** This grip cleat affords an easy and inexpensive method of securing the end of the operating chain where locking is not necessary.

No. 690.....each \$2.25

**No. 691 Lock Box.** Where the vertical portion of the operating chain is not conduit enclosed, the No. 691 lock box provides a method for padlocking the end of the operating chain.

No. 691, Padlock not included.....each \$1.20

**No. 692 Lock Box.** Where the vertical portion of the operating chain is enclosed in  $\frac{3}{4}$ -inch conduit, the No. 692 lock box should be used. It is threaded at the top to receive  $\frac{3}{4}$ -inch conduit. Requires padlock.

No. 692, Padlock not Included.....each \$5.00



## Type MUA Crouse-Hinds Floodlights

## Schedule F

Designed for lighting gasoline service stations, tennis courts, playgrounds, swimming pools, parking spaces, football fields, baseball and softball fields.

The MUA line of light duty floodlights consists of three different types of reflectors, each of which can be furnished in several combinations. All of the reflectors are interchangeable on either of the two heads, and each reflector has different lighting characteristics.

## Model I Head



With Cross Arm Mounting

Medium beam reflector is designed for a beam spread of approximately 90°. It is very effective for medium range projection.

Narrow beam reflector has a beam spread of 30°. It is very effective for spotting small areas.

Can be furnished with hinged door and heat-resisting lens to keep the reflector clean and protect the lamp. Standard lens is clear; a stippled lens will be furnished if desired.

## With Medium Beam Etched Alzak 18-Inch Reflector

Description	Without Hinged Door		With Hinged Door	
	No.	Each	No.	Each
1½-Inch Slip Fitter.....	42394A	\$31.00	44138	\$46.00
Cross Arm.....	42395A	29.00	44136	44.00
Pole Bracket.....	42396A	30.00	44140	45.00
Pendent Mounting.....	42401A	27.00	44150	42.00

## With Narrow Beam Polished Alzak 18-Inch Reflector

1½-Inch Slip Fitter.....	42397A	\$38.00	44137	\$53.00
Cross Arm.....	42398A	36.00	44135	51.00
Pole Bracket.....	42399A	37.00	44139	52.00
Pendent Mounting.....	42402A	34.00	44151	49.00

## Head and Support Complete Without Alzak Reflector

No.		Each
42177	1½-Inch Slip Fitter Mounting.....	\$11.00
42176	Cross Arm.....	9.00
42178	Bracket Mounting.....	10.00
42380	Pendent Mounting.....	7.00

## Reflector and Hinged Door Complete Without Head and Support

No.		Each
44152	Medium Beam Reflector, Clear Lens.....	\$35.00
44153	Narrow Beam Reflector, Clear Lens.....	42.00

## Elliptalux Porcelain Enameled Reflectors\*

## Model I Head



With Slip Fitter Mounting

Wide beam auxiliary reflector is sheet aluminum with etched Alzak finish. Superimposes on the general distribution a wide beam of high intensity for lighting distant areas.

Narrow beam auxiliary reflector is sheet aluminum with polished Alzak finish. Supplies a narrow beam of high intensity having a spread of 40° horizontally by 27° vertically.

## Without Auxiliary Reflector

No.	Description	Each
42174	1½-Inch Slip Fitter.....	\$19.00
42173	Cross Arm.....	17.00
42175	Pole Bracket.....	18.00
42381	Pendent Mounting.....	15.00

## With Wide Beam Etched Alzak Auxiliary Reflector

42188	1½-Inch Slip Fitter.....	\$22.00
42187	Cross Arm.....	20.00
42189	Pole Bracket.....	21.00
42384	Pendent Mounting.....	18.00

## With Narrow Beam Polished Alzak Auxiliary Reflector

42180	1½-Inch Slip Fitter.....	\$25.00
42179	Cross Arm.....	23.00
42181	Pole Bracket.....	24.00
42382	Pendent Mounting.....	21.00

Prices Do Not Include Incandescent Lamps

Slip fitter, cross arm base, pole bracket, and pendent mountings can be supplied.

Furnished with 750, 1000, or 1500-watt, PS-52 bulb lamp. Floodlights will be furnished arranged for standard 500-watt lamp, if specified. Porcelain mogul screw base receptacle.

Finish: porcelain enameled reflectors, white inside and blue outside; aluminum reflectors, non-tarnishing Alzak; and support head, aluminum.

## Alumalux Aluminum Reflectors

## Model II Head



With Cross Arm Mounting

The adjustable head and support arm is recommended for athletic field installations. Can be tipped completely over for convenience when relamping and cleaning and when it is swung back against the adjustable relamping stop, it is in its exact original position.

Mounting provides both horizontal and vertical degree scales for accurate setting of the floodlight during installation. Special cross arm bracket for steel tower mounting, using two bolts, can be furnished without additional charge if specified.

Furnished wired complete with two single conductors of rubber-covered service wire, 4-feet long, or 4 feet of 2-conductor cable. Either open style or with enclosing lens. Hinged door and lens recommended for keeping the reflecting surface free from dirt and dust, and preventing lamp breakages. Standard lens is clear; a stippled lens will be furnished if desired.

## With Medium Beam Etched Alzak 18-Inch Reflector

Description	Without Hinged Door		With Hinged Door	
	No.	Each	No.	Each
1½-Inch Slip Fitter.....	43911	\$31.00	43953	\$46.00
Cross Arm.....	43909	29.00	43951	44.00
Pole Bracket.....	43917	30.00	43959	45.00

## With Narrow Beam Polished Alzak 18-Inch Reflector

1½-Inch Slip Fitter.....	43912	\$38.00	43954	\$53.00
Cross Arm.....	43910	36.00	43952	51.00
Pole Bracket.....	43918	37.00	43960	52.00

## Head and Support Complete Without Alzak Reflector

No.		Each
43507	1½-Inch Slip Fitter Mounting.....	\$11.00
43506	Cross Arm.....	9.00
43510	Bracket Mounting.....	10.00

## Reflector and Hinged Door Complete Without Head and Support

No.		Each
44152	Medium Beam Reflector, Clear Lens.....	\$35.00
44153	Narrow Beam Reflector, Clear Lens.....	42.00

## Multalux Porcelain Enameled Reflectors\*

## Model I Head



With Slip Fitter Mounting

Designed for lighting service stations. Interchangeable.

Wide beam auxiliary reflector is sheet aluminum with etched Alzak finish. Superimposes on the general distribution a wide beam of high intensity for lighting buildings and pumps.

Narrow beam auxiliary reflector is sheet aluminum with polished Alzak finish.

## Without Auxiliary Reflector

No.	Description	Each
42206	1½-Inch Slip Fitter.....	\$30.00
42207	Cross Arm.....	28.00
42208	Pole Bracket.....	29.00
42387	Pendent Mounting.....	26.00

## With Wide Beam Etched Alzak Auxiliary Reflector

42209	1½-Inch Slip Fitter.....	\$33.00
42210	Cross Arm.....	31.00
42211	Pole Bracket.....	32.00
42388	Pendent Mounting.....	29.00

## With Narrow Beam Polished Alzak Auxiliary Reflector

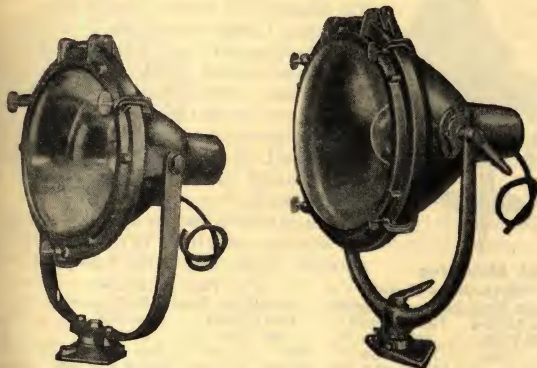
42212	1½-Inch Slip Fitter.....	\$36.00
42213	Cross Arm.....	34.00
42214	Pole Bracket.....	35.00
42389	Pendent Mounting.....	32.00

\*Also furnished with Model II head.



## Crouse-Hinds Floodlight Projectors Medium and Long Range *Schedule F*

Types ADE-12, ADE-14, and ADE-16



Type ADE-12  
With Standard Mounting

Type ADE-14 and ADE-16,  
with Standard Mounting

A clear, plain lens is furnished unless otherwise specified. A clear, diffusing lens and two types of spread lens, 50° and 100°, can be furnished if specified, at no extra charge. Heavy duty housing are made of cast aluminum.

### Type ADE-12 With Standard Mounting

No.	Each	Description	LAMP	
			Watts	Bulb
42428A	\$43.00	With Wide Beam Polished Alzak Reflector	200	PS-30
42429A	43.00	With Narrow Beam Polished Alzak Reflector	250	G-30

### Type ADE-14

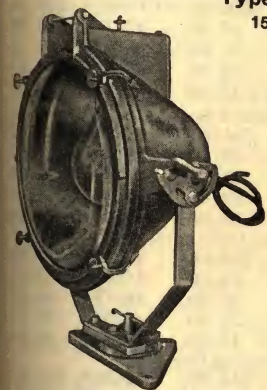
42740	\$68.00	With Wide Beam Polished Alzak Reflector	500	PS-40
42739	68.00	With Narrow Beam Polished Alzak Reflector	500	PS-40
42921A	68.00	With Narrow Beam Polished Alzak Reflector	500	G-40

### Type ADE-16

42741	\$85.00	With Wide Beam Polished Alzak Reflector	300 to 1000	PS-52
42932	85.00	With Narrow Beam Polished Alzak Reflector	300 to 1000	PS-52
42743	85.00	With Narrow Beam Polished Alzak Reflector	500 or 1000	G-40

Available with Slip Fitter at same price.

### Type LCE-1120 1500 Watts



Used for the illumination of large areas.

The unit can be arranged with plain, spread or diffusing lens.

The 750, 1000, or 1500-watt, PS-52 bulb lamp; or the 1000 or 1500-watt, G-bulb lamp, may be used as required.

When used with the G-bulb lamp, the housing is tipped over so that the lamp operates in a base-down position.

Finish: case, natural aluminum; base and trunnion, galvanized.

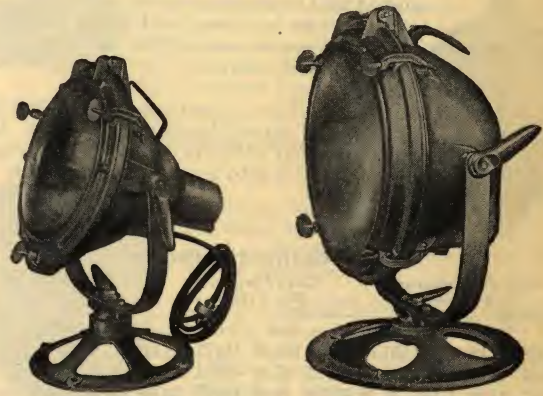
Shipping weight, 115 pounds.

No.	Each	Description	LAMP	
			Watts	Bulb
42745	\$140.00	With Wide Beam Polished Alzak 20-Inch Reflector	750 to 1500	PS-52
42746	140.00	With Narrow Beam Polished Alzak 20-Inch Reflector	1000 or 1500	G
42953	140.00	With Narrow Beam Polished Alzak 20-Inch Reflector	750 to 1500	PS-52

## Crouse-Hinds Portable Floodlight Projectors

Types ADR-12 and ADR-14

12-Inch, 200 to 250-Watt—14 Inch, 500-Watt



Type ADR-12

Type ADR-14

For portable use with either a narrow beam spotlight or a wide, evenly distributed, beam of light.

Housing: cast aluminum alloy, dust-tight, non-ventilated, and weatherproof.

Wiring connections: 10 feet of heavy-duty rubber-covered cable is furnished with a standard parallel blade plug.

Furnished with polished Alzak reflector.

Lamps are not included.

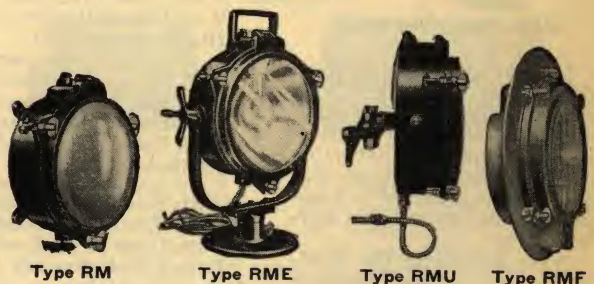
No.	Each	Type	*Lens	LAMP	
				Watts	Bulb
42950C	\$50.00	ADR-12	Diffusing	200 or 250	PS or G
42023C	50.00	ADR-12	Plain	200 or 250	PS or G
44176C	71.00	ADR-14	Diffusing	500	G-40
42783C	71.00	ADR-14	Plain	500	G-40

\*Diffusing lens provides wide beam, and plain lens provides narrow spotlight beam.

## Crouse-Hinds Floodlights

Types RM, RMU, RME, and RMF

Short and Medium Range



Type RM

Type RME

Type RMU

Type RMF

Furnished with narrow beam Alzak reflector. Lamps are not included.

No.	Each	Type	Description	LAMP	
				Watts	Bulb
40407A	\$28.00	RM-10	Surface	60 or 150	A
40408A	33.00	RM-12	Surface	150 or 200	PS
40409A	40.00	RMU-10	With Bracket	60 or 100	A
40410A	45.00	RMU-12	With Bracket	150 or 200	PS
40411A	45.00	RME-10	Trunnion	60 or 100	A
40412A	50.00	RME-12	Trunnion	150 or 200	PS
42930	40.00	RMF-12	Flush	150 or 200	PS



## Type GCP-14 Crouse-Hinds Lantern Floodlights

### Schedule F



An ornamental lantern type floodlight designed for the illumination of buildings, gasoline service stations, and other locations where the appearance of the lighting unit is a factor of importance.

The daytime appearance is that of an ornamental street lantern. At night, the large, efficient reflector on the inside transforms the unit into a powerful floodlight.

### With Floodlight Reflector

Cast Aluminum Slip Fitter		Cast Feralloy Slip Fitter		Form	Reflector
No.	Each	No.	Each		
4-Inch		4-Inch			
No.	Each	No.	Each	No.	Each
41322	\$91.00	41323	\$91.00	41970	\$85.00
41324	91.00	41325	91.00	41972	85.00
41402	91.00	41401	91.00	41974	76.00
				41975	76.00

### Without Reflector

#### With Mogul Multiple Receptacle

41337	\$62.00	41338	\$62.00	41976	\$56.00	41977	\$56.00	..	Without
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#### With Series Film Cutout Receptacle

41320	\$65.00	41321	\$65.00	41978	\$59.00	41979	\$59.00	..	Without
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\*For lighting above horizontal.

†For lighting below horizontal.

Units with floodlighting reflector are furnished with a medium screw base auxiliary lamp receptacle.

Lamps are not included.

## Crouse-Hinds Floodlights

### Schedule F

#### Types MDB-8 and MDB-10

8-Inch, 100 Watts

10-Inch, 200 Watts



Lightweight, weatherproof; for lighting residential yards, driveways.

Round flange base can be bolted to flat horizontal or vertical surface. Holes are spaced to fit holes in a 4-inch outlet box. Steel stake provided for temporary mounting on ground. Suspension mounting furnished without additional charge. Aluminum finish.

Furnished with polished Alzak reflector, units become spotlights.

Incandescent lamps not included.

Shipping weight: Type MDB-8, 7½ pounds; Type MDB-10, 9 pounds.

### Std. Mounting

*With Wide Beam Etched Aluminum Reflector		Type MDB-8		Type MDB-10		With Narrow Beam Polished Alzak Reflector		Type MDB-8		Type MDB-10		Color of Lens
No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	
42403	\$8.00	42405	\$12.50	42409	\$9.50	42411	\$14.50					Clear
42434	12.80	42438	19.00	42442	14.30	42446	21.00					Red
42435	12.80	42439	19.00	42443	14.30	42447	21.00					Amber
42436	12.80	42440	19.00	42444	14.30	42448	21.00					Green
42437	12.80	42441	19.00	42445	14.30	42449	21.00					Blue

\*Furnished in etched Alzak finish, Type MDB-8, add \$1.50; Type MDB-10, \$2.00.

Without lens or clamping ring, Type MDB-8, deduct \$2.00; Type MDB-10, deduct \$4.00.

### Accessories and Parts

Description	For Type MDB-8		For Type MDB-10	
	No.	Each	No.	Each
Plain Lens.....	HL5375	\$1.70	HL6813	\$3.50
Spread Lens.....	HL5376	1.70	HL6815	3.50
Diffusing Lens.....	HL5377	1.70	HL6814	3.50
Plain Red Lens.....	HL5754	6.50	KL507	10.00
Plain Amber Lens.....	HL5753	6.50	KL508	10.00
Plain Green Lens.....	HL5755	6.50	KL509	10.00
Plain Blue Lens.....	KL511	6.50	KL510	10.00
Lamp Receptacle.....	HL4203	.60	HL4203	.60

## Crouse-Hinds Floodlights

### Schedule F

#### Type MDB-14, 14-Inch, 500 Watts and Type MDB-16, 16-Inch, 1000 Watts

#### Type MDB-14, Floodlight Complete, without Cover Glass



With Standard Base

Lightweight, weather-proof floodlights. Furnished with heat-resisting clear lenses.

Cast aluminum socket housing and support. Reflectors are for narrow, medium and wide beam; attached to housing by four screws and key-hole slots.

When installing the floodlights, housing and mounting can be installed and wired complete before reflector is attached. Aluminum finish.

Incandescent lamps are not included in numbers and prices.

\*Does not include head and support base.

†Less Mounting.

‡Includes Cover Glass and Clamp Ring.

§Includes Cover Glass and Hinged Door.

### Description

Description	With Wide Beam Etched Alzak Refl. 115° Spread		With Medium Beam Etched Alzak Refl. 70° Spread		With Narrow Beam Polished Alzak Refl. 20° Spread	
	No.	Each	No.	Each	No.	Each
With Standard Mounting.....	44141	\$20.00	44142	\$20.00	44143	\$25.00
With Slip-Fitter Mounting.....	44144	21.00	44145	21.00	44146	26.00
With Cross Arm Mounting.....	44159	19.00	44160	19.00	44161	24.00
With U-Bolt Bracket Mounting...	44189	20.00	44190	20.00	44191	25.00
*†Reflector Only.....	KL527	10.50	KL243	10.50	KL244	15.50

#### Type MDB-14, Floodlight Complete with Lens and Clamping Ring

With Standard Mounting.....	42491A	\$26.00	42461A	\$26.00	42462A	\$31.00
With Slip-Fitter Mounting.....	42487A	27.00	42495A	27.00	42721A	32.00
With Cross Arm Mounting.....	42488A	25.00	42496A	25.00	42722A	30.00
With U-Bolt Bracket Mounting...	43543	26.00	43544	26.00	43545	31.00
*††Reflector Complete.....	42489A	16.50	42497A	16.50	42723A	21.50

#### Type MDB-14, Floodlight Complete with Hinged Door and Lens

With Standard Mounting.....	43567	\$34.00	43568	\$34.00	43569	\$39.00
With Slip-Fitter Mounting.....	43570	35.00	43571	35.00	43572	40.00
With Cross Arm Mounting.....	43564	33.00	43565	33.00	43566	38.00
With U-Bolt Bracket Mounting...	43579	34.00	43580	34.00	43581	39.00
*†§Reflector Complete.....	43840	24.50	43841	24.50	43842	29.50

#### Type MDB-16, Floodlight Complete, without Cover Glass

With Standard Mounting.....	44162	\$23.00	44163	\$23.00	44164	\$29.00
With Slip-Fitter Mounting.....	44165	24.00	44166	24.00	44167	30.00
With Cross Arm Mounting.....	44168	22.00	44169	22.00	44170	28.00
With U-Bolt Bracket Mounting...	44192	23.00	44193	23.00	44194	29.00
*†Reflector Only.....	KL528	13.50	KL247	13.50	KL248	19.50

#### Type MDB-16, Floodlight Complete with Lens and Clamping Ring

With Standard Mounting.....	42490A	\$34.00	42465A	\$34.00	42466A	\$40.00
With Slip-Fitter Mounting.....	42484A	35.00	42492A	35.00	42498A	41.00
With Cross Arm Mounting.....	42485A	33.00	42493A	33.00	42499A	39.00
With U-Bolt Bracket Mounting...	43615	34.00	43616	34.00	43617	40.00
*††Reflector Complete.....	42486A	24.50	42494A	24.50	42500A	30.50

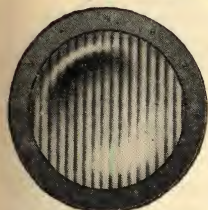
#### Type MDB-16, Floodlight Complete with Hinged Door and Lens

With Standard Mounting.....	43675	\$41.00	43676	\$41.00	43677	\$47.00
With Slip-Fitter Mounting.....	43678	42.00	43679	42.00	43680	48.00
With Cross Arm Mounting.....	43672	40.00	43673	40.00	43674	46.00
With U-Bolt Bracket Mounting...	43687	41.00	43688	41.00	43689	47.00
*†§Reflector Complete.....	43843	31.50	43844	31.50	43845	37.50



## Type SPS Crouse-Hinds Swimming Pool Floodlights

*Schedule F*  
For Dry Niche Mounting



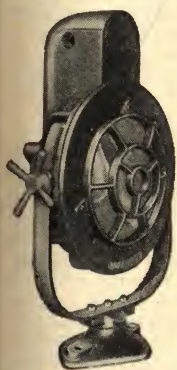
For pools which have a passage around the outside wall, or for installation in a manhole. In the latter case, the design is such that a very small manhole can be used. It is not necessary for the service man to enter the manhole, as the unit is easily unhooked and lifted to the surface for relamping.

A 3-conductor cable is furnished with the unit. The third wire is grounded to the floodlight. Housing: bronze is standard for swimming pools; cast aluminum can be used in fresh water.

Door frame: cast bronze, or cast aluminum, natural finish. Lens: Convex, Pyrex, heat-resisting, horizontal spread lens, 16 $\frac{1}{16}$  inches in diameter (No. HL6810).

Lamps: 500 or 1000-watt, G40 bulb, 115-volt floodlight service lamp; not included in prices.

	Bronze		Aluminum	
	No.	Each	No.	Each
Type SPS Complete:				
With Porthole Ring.....	44124	\$150.00	44132	\$80.00
With Relamping Bracket.....			44131	30.00
Porthole Ring with Door...	44123	120.00	44130	50.00
Ring Only with Screws.....	KL3587	50.00	KL3589	20.00
Door Only with Gasket.....	KL3588	70.00	KL3590	30.00



## Type RCDE-8 Crouse-Hinds Explosion-Proof Floodlights

*Schedule R*



With Trunnion Mounting

Pit Light

Designed to meet the requirements of an explosion-proof floodlight.

Recommended for use around oil refineries, chemical plants and for lighting spray booths from the outside.

The Pit Light is recommended for lighting automobile greasing pits and lifts and for general use in hazardous locations.

### With Trunnion Mounting

With Narrow Beam Polished Alzak Reflector		With Wide Beam Etched Alzak Reflector		Housing	Door
No.	Each	No.	Each		
41719A	\$75.00	41720A	\$71.75	Feraloy	Aluminum
41721A	85.00	41722A	81.75	Feraloy	Brass
41723A	75.00	41724A	71.75	Aluminum	Aluminum
41725A	102.00	41726A	98.75	Brass	Brass
<b>With Suspension Mounting</b>					
41989A	\$72.00	41990A	\$68.75	Aluminum	Aluminum
41991A	72.00	41992A	68.75	Feraloy	Aluminum
41993A	99.00	41994A	95.75	Brass	Brass

### Portable Unit

41727A	\$76.00	41728A	\$72.75	Aluminum	Aluminum
<b>Pit Light—Without Brackets</b>					
41704A	\$62.50	41702A	\$59.50	Feraloy	Aluminum
41705A	72.00	41706A	69.00	Feraloy	Brass
41707A	62.50	41708A	59.50	Aluminum	Aluminum
41709A	88.00	41710A	85.00	Brass	Brass

### Pit Light—With Three Z Brackets

41711A	\$63.50	41712A	\$60.50	Feraloy	Aluminum
41713A	74.00	41714A	71.00	Feraloy	Brass
41715A	63.50	41716A	60.50	Aluminum	Aluminum
41717A	89.00	41718A	86.00	Brass	Brass

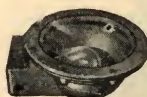
Prices do not include lamps.

## Type RCD-8 Crouse-Hinds Lighting Units

*Schedule R*

Designed for mounting in concrete. Provides perfect lighting for pits, underpasses, tunnels and washracks.

### Form F for Floor Mounting



Watertight, door overlaps case; projects above concrete about  $\frac{3}{16}$  inch. Door has rough pebbled surface. Has flat glass lens; heavy enough to allow it to be stepped on or driven over, impact resisting. Available only in plain type. Leaded in.

No. 41427A.....each \$20.00

### Form W for Wall Mounting



Similar to Form F, except that it is provided with a hinged and flush door, so that it can be set absolutely flush with a concrete wall.

Can also be mounted on a ceiling or wall by using brackets.

Refracting lenses can be set to refract light up or down.

Black enamel finish.

Form W, with Hinged Door and Grid	With Plain Lens		With Refracting Lens	
	No.	Each	No.	Each
With Grid.....	41409	\$20.00	41410	\$20.00
Without Grid.....	41332	19.00	41334	19.00

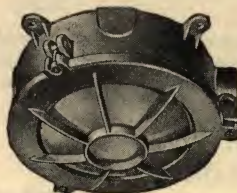
Prices do not include incandescent lamps.

## No. 43729 Type RMC-8 Watertight Marine Lighting Units

*Schedule F*

For Deck or Hold Lighting  
100 Watts

Meets requirements of U.S. Maritime Commission. Lightweight, allows easy handling and reduces considerably total weight of any vessel requiring several hundred fixtures.



Housing: cast aluminum alloy, dust-tight and weatherproof. Can be drilled and tapped at factory, at additional cost of \$.10 for each tapped lug.

Mounting: four lugs are provided for surface mounting.

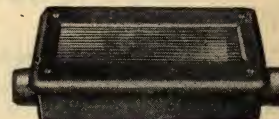
No. 43729, Type RMC-8.....each \$16.00

## Type FS Crouse-Hinds Lighting Units

*Schedule F*



6-Watt



25-Watt

Small lighting units made to mount flush in concrete, stone, or plastered walls; to light steps, walks, floors and gardens. Also used in hospitals, mounted low in the wall for lighting the floor without disturbing patients.

Cover is equipped with refracting glass, which is normally set to refract light downward. Two styles are shown; a 25-watt and 6-watt unit, with two hub combinations each, through feed and bottom hubs.

### \*With Aluminum Cover

Size Inches	6 Watts				25 Watts			
	Through		Dead End		Through		Dead End	
	No.	Each	No.	Each	No.	Each	No.	Each
1/2	42877	\$3.60	42879	\$3.50	42912	\$7.20	42904	\$7.00
3/4	42916	3.80	42908	3.60	42913	7.40	42905	7.30
1	42917	4.05	42909	3.70				

\*For brass chrome plated covers add \$3.00 to prices for 25-watt type and \$1.50 for 6-watt type.



## Crouse-Hinds Special Floodlight Bases and Brackets

*Schedule F*

For Crouse-Hinds Floodlights



When any one of these special bases or brackets is ordered with a projector, the number and price of the particular base or bracket should be added to number and price of the projector.

### Bases

For Types ADE-14 and ADE-16

*No. HL3720, Pedestal.....	each	\$10.00
No. HL2693, Railroad.....	each	3.00
No. HL2714, U-Bolt.....	each	3.75
No. HL5608, Wheel.....	each	7.50

For Type ADA-12

No. HL3526, Bolt.....	each	\$2.50
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For Type LCE-1120

No. HL3247, Slip Fitter, 4-Inch.....	each	\$6.00
No. HL3681, Slip Fitter, 2½-Inch.....	each	6.00
No. HL9462, Wheel.....	each	11.00

Ornamental Pole Bases

No. 45669, Threaded.....	each	.....
No. 45889, Slip Fitter.....	each	.....

### Brackets

For Two Type LCE-1120

No. HL3123, Ornamental.....	each	\$32.00
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For Two Types ADE-14 or ADE-16

No. HL3685, Ornamental.....	each	\$32.00
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For Type LCE-1120

No. HL2630, Pole.....	each	\$9.00
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For Types ADE-14 and ADE-16

No. HL2632, Pole.....	each	\$7.50
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\*For projector in place of regular base, add \$2.00.

## Crouse-Hinds Lenses



Plain Lens



Spread Lens

Most Crouse-Hinds floodlights are supplied as standard equipment with plain, convex, Pyrex, heat-resisting lenses. Unless another lens is specified on the order, plain lens will be furnished. The plain lens does not alter the beam spread of the floodlight in any way.

### Light Control Lenses

It is often desirable to increase the natural spread of a floodlight beam either in all directions or in one direction only. To meet this condition, the Crouse-Hinds Company can supply two different types of lenses as described below. There is no additional charge for these lenses, if specified on the order.

### Diffusing Lenses

The convex, heat-resisting, diffusing lens spreads the natural beam both horizontally and vertically, giving a larger light spot. This lens is used where the natural spread from the floodlight is not sufficient to cover the area desired.

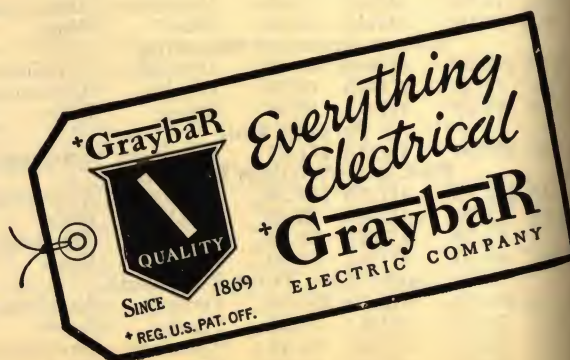
### Spread Lenses

The convex, heat-resisting, spread lens spreads the light at right angles to the direction of the ribs, leaving the spread in the other direction the same. The resulting beam is elliptical in shape. When the ribs are vertical, the beam is spread horizontally and when they are horizontal, the beam is spread vertically. The lens can be set at the factory for either spread, and the order should specify which is desired. This type of lens is very useful when lighting rectangular areas. The nominal beam spread produced with the standard spread lens is 45° to 50°. The actual beam spread depends on the characteristics of the floodlight with which the lens is used.

### Color Screens

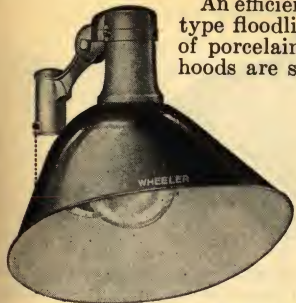
Floodlights using 500-watt or larger lamps can be furnished with red, amber, green, or blue color screens. These screens are placed inside the floodlight, behind the clear lens. 12-inch projectors can be furnished with colored, heat-resisting lenses in place of the clear glass lenses, for an addition of \$3.00.

Color screens can be obtained for lenses having a diameter of 12, 14, or 16½ inches.





## Wheeler Meteor Floodlights



An efficient and dependable style of open type floodlight. Reflector is constructed of porcelain enameled steel. Supporting hoods are separable from reflector necks, permitting any of the various bracket assemblies to be put in place without the necessity of handling the complete fixture. All cast parts are made of aluminum with the exception of the base of the pipe clamp assembly which is cast iron.

**Auxiliary Interior.** An auxiliary interior is available for attaching to the inside of the reflector. Made of aluminum with a special diffused ALZAK aluminum reflecting surface. Designed to build up the illumination in the area farthest from the unit.

**Finish.** Porcelain enameled light blue outside, white inside. Hoods retain their natural cast aluminum finish.

## With Pole Top Assembly

Slips 1½-Inch Iron Pipe

No.	Each	Reflector Mouth, In.	Overall Height, In.	Lamp Watts
2546	\$21.60	21½x15¼	19	300-500
2547	22.80	21½x15¼	21½	750-1500

## With Cross Arm and Pipe Clamp Assembly

Clamps Around ¾ to 1½-Inch Iron Pipe

No.	Each	Reflector Mouth, In.	Overall Height, In.	Lamp Watts
2548	\$20.40	21½x15¼	19	300-500
2549	21.60	21½x15¼	21½	750-1500

## With Cross Arm Assembly

Fits Cross Arms

No.	Each	Reflector Mouth, In.	Overall Height, In.	Lamp Watts
2550	\$19.20	21½x15¼	19	300-500
2551	20.40	21½x15¼	21½	750-1500

## With Pendent Hood

Tapped ¾-Inch Standard

No.	Each	Reflector Mouth, In.	Overall Height, In.	Lamp Watts
2552	\$16.80	21½x15¼	19¾	300-500
2553	18.00	21½x15¼	22¼	750-1500

\*Tapped 1-inch when specified.

When specified, can be furnished with a diffused ALZAK aluminum inner reflector at an increase of \$3.60 in price.

## Benjamin Ellipto-Lite Play-Area Floodlights



No. 5977

A wide angle, open type reflecting reflector for floodlighting recreational areas, playgrounds, parking lots, etc. Weatherproof.

Four types of hood; pendent for attaching directly to threaded pipe; with cross arm bracket for fastening to flat surfaces; with cross arm and pipe clamp for attaching to 1 to 2-inch pipe; or slip fitter to slip over 1½ or 2-inch pipe.

Fittings not aluminum, are electro-plated.

## With Pendent Hoods

Hood tapped ¾ inches standard; 1 inch, if specified.

Size Lamp Watts	With Inner Reflector	Less Inner Reflector	Diam. In.	Ht. In.	Ship. Wt. Lb.
300,500	5770 \$17.00	5772 \$14.00	20	19	19
750-1500	5970 18.00	5973 15.00	21½	22¾	24

## With Cross Arm Brackets

Size Lamp Watts	No.	Each	No.	Each	Diam. In.	Ht. In.	Ship. Wt. Lb.
300,500	5771	\$19.00	5773	\$16.00	20	18¾	24
750-1500	5971	20.00	5974	17.00	21½	21¾	26

## With Cross Arms and Pipe Clamps

Size Lamp Watts	No.	Each	No.	Each	Diam. In.	Ht. In.	Ship. Wt. Lb.
300,500	5777	\$20.00	5779	\$17.00	20	18¾	21
750,1500	5977	21.00	5978	18.00	21½	21¾	25

## With Slip-Fitter Brackets

Size Lamp Watts	No.	Each	No.	Each	Diam. In.	Ht. In.	Ship. Wt. Lb.
300,500	5774	\$21.00	5775	\$18.00	20	18¾	21
300,500	*5774A	21.00	*5775A	18.00	20	18¾	21
750,1500	5975	22.00	5976	19.00	21½	21¾	28
750-1500	*5975A	22.00	*5976A	19.00	21½	21¾	28

## With Saffox Lowering Attachment

Size Lamp Watts	No.	Each	No.	Each	Diam. In.	Ht. In.	Ship. Wt. Lb.
750-1500	25975	\$41.00	25976	\$38.00	21½	....	41
750-1500	*25975A	41.00	*25976A	38.00	21½	....	41

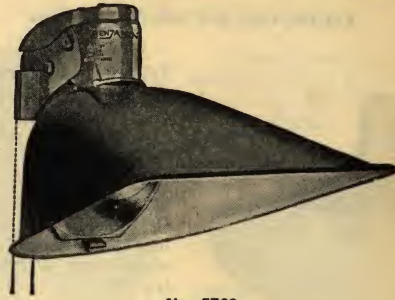
## For Bi-Post Lamps

Floodlight can be supplied with holder for 1000-watt, medium Bi-post, hard-glass lamp. To order, prefix number with BP and add \$2.00 list (with Saffox add \$2.50). A length of No. 12AF nickel fixture wire is included (except Saffox).

\*Slips on 2-inch iron pipe mast.

## Benjamin Duo-Service Floodlights

For 750, 1000 and 1500-Watt Lamps



No. 5763

Used for lighting gasoline service stations, super-service stations, roadside inns, etc.

Porcelain enameled steel reflector, regularly supplied green outside, special diffusing surface white inside. When specified, choice of red or white outside, without extra charge.

Has No. 2772 one-piece, mogul base receptacle, with improved finger type lamp grip.

All fittings not aluminum are electro-plated to resist corrosion.

CLOSED WIRING, SLIP FITTER mounting bracket has wires completely enclosed and protected from receptacle through to pole. Bracket slips over the end of a 1½ inch iron pipe mast; also available for 2 inch pipe. Horizontal and vertical adjustments have degree marking graduations.

OPEN WIRING, CROSS ARM mounting bracket has separable hood with weatherproof wire entrance bushing which can be replaced with standard BX connector. Fits standard 4¼ inch arms and any flat surface. Horizontal and vertical adjustments have degree marking graduations.

## With Concentrating Beam Inner Projector

Has efficient, highly polished aluminum reflecting surface producing a narrow, concentrated, high intensity floodlight beam.

No.	Description	Ship. Wt., Lb. Each	Each	Inner Projector Each
5763	Fits 1½-Inch Iron Pipe Mast.	35	\$36.00	\$6.00
*27563	Fits 1½-Inch Iron Pipe Mast.	50	50.00	6.00
5763-A	Fits 2-Inch Iron Pipe Mast. . .	35	36.00	6.00
*27563-A	Fits 2-Inch Iron Pipe Mast. . .	50	50.00	6.00
5933	With Cross Arm Bracket. . . .	35	34.00	6.00

## With Medium-Spread Beam Inner Reflector

Reflecting surface is oxidized aluminum, providing a sufficient amount of spread to widen the floodlight beam considerably.

No.	Description	Ship. Wt., Lb. Each	Each	Inner Projector Each
5764	Fits 1½-Inch Iron Pipe Mast. . .	35	\$33.00	\$3.00
*27564	Fits 1½-Inch Iron Pipe Mast. . .	50	47.00	3.00
5764-A	Fits 2-Inch Iron Pipe Mast. . . .	35	33.00	3.00
*27564-A	Fits 2-Inch Iron Pipe Mast. . . .	50	47.00	3.00
5934	With Cross Arm Bracket. . . .	35	31.00	3.00

## With Wide-Spread Beam Inner Reflector

Has oxidized aluminum reflecting surface, but is considerably larger than the medium-spread reflector above, and thereby intercepts more light producing much broader floodlighting coverage.

No.	Description	Ship. Wt., Lb. Each	Each	Inner Projector Each
5766	Fits 1½-Inch Iron Pipe Mast. . .	35	\$34.50	\$4.50
*27566	Fits 1½-Inch Iron Pipe Mast. . .	50	48.50	4.50
5766-A	Fits 2-Inch Iron Pipe Mast. . . .	35	34.50	4.50
*27566-A	Fits 2-Inch Iron Pipe Mast. . . .	50	48.50	4.50
5936	With Cross Arm Bracket. . . .	35	32.50	4.50

## For Bi-Post Lamps

Floodlight can be supplied with holder for 1000-watt, medium Bi-post, hard-glass lamp. To order, prefix number with BP and add \$2.00; for Saffox add \$2.50 list.

\*Furnished with Saffox attachment.



## Benjamin Play-Area Floodlights

With Inner Auxiliary Reflectors

For 750, 1000, and 1500-Watt Lamps



No. 5751

An open type, wide angle, diffusing floodlight designed for lighting railroad yards, docks, loading platforms, construction projects and outdoor sport areas. Provides uniform, strong illumination on the ground area to the front and sides of the unit. Includes an Alzak aluminum auxiliary reflector.

Available in 3 types of mounting brackets: Open-wiring cross arm bracket for, attaching to wood cross arms and other flat surfaces; cross arm with pipe clamp for clamping around 1 to 2-inch iron pipe; closed-wiring slip fitter bracket for fitting over end of 1½-inch iron pipe mast; also available to fit over 2-inch pipe. Reflector is 28½ inches long, and 17½ inches wide.

Porcelain enameled reflector, green outside, white inside. Bracket arm, reflector neck, pipe clamp, etc., are cast iron; finished to resist corrosion.

## Open-Wiring—Cross Arm Bracket Type

No. 5751 with Cross Arm Bracket.....each	\$29.00
No. 5754 with Cross Arm Bracket and Pipe Clamp.....each	30.00

## Closed-Wiring—With Slip Fitter Bracket

No. 5752, for 1½-Inch Pipe.....each	\$31.00
No. 5752A, for 2-Inch Pipe.....each	31.00

## Benjamin Column-Lite Fixtures



No. 5681

One-piece, seamless, porcelain enameled steel reflector. Regularly supplied green or red outside, special diffusing white inside to reduce glare from specular reflection. When specified, on special order, fixtures can be supplied in white, blue, yellow, gray, or cream; prices on request.

Shock-absorbing socket to protect lamp filament against shocks and vibration. A shock-absorbing spring, permanently attached to

socket supporting strap, floats the one-piece porcelain, listed by Underwriters, standard socket which has easy-to-wire, side terminal screws.

Slip fitter bracket of cast iron is first electro-plated and then finished in sprayed aluminum. Slip fitter fits over end of unthreaded 2-inch iron pipe mast and is locked in place by 2 large, rugged set-screws.

Supplied without shielding ring.

Lamp Watts	No.	Each	Outside Reflector Finish	Diam. In.	Ht. In.	Ship. Wt. Lb.
*150, 200	5680G	\$15.00	Green	18	19½	21
*150, 200	5680R	15.00	Red	18	19½	21
300, 500	5681G	15.00	Green	20	21⅞	25
300, 500	5681R	15.00	Red	20	21⅞	25

\*For 150-watt lamps, use socket extension No. 91 to correctly position lamp in reflector. Sockets for replacement, No. 44, medium, No. 244, mogul.

## Benjamin Variety-Lites



For use about the home and business establishment. Indoors, it is ideal for lighting furnace rooms, laundries, stairways, store-rooms and attics. Outdoors, for porches, garage approaches, gardens and play-areas.

The porcelain enameled steel reflector is not affected by heat or dampness and is easily cleaned. Reflecting white inside, gray outside, with black bead. Has snap-in type, etched aluminum inner reflector.

Cast iron reflector cap and steel bracket; finished in blue lacquer over galvanizing. Steel bracket band is electro-plated.

Unit can be quickly attached to any flat surface by first installing the two No. 10 round headed wood screws furnished and then slipping the key hole slots of the bracket over them.

Supplied wired, with 6 feet of rubber service cord and rubber plug.

Packed 1 in a standard package.

No.....	1934	1936
Each.....	\$4.65	5.00
Size Lamp.....watts	100	200, *300
Diameter Reflector.....inches	8	10
Shipping Weight.....pounds	4¾	6½

\*Medium base lamp.

Prices do not include lamps.

## Benjamin Service-Lites

A handy, telescoping and portable work light that can be easily moved from place to place and quickly adjusted to any desired height from 9 to 72 inches above the floor. At any point in this adjustment, the reflector can be tilted up or down through a wide angle to direct the light where it is needed.

The lower section of the telescoping shaft is iron pipe, upper section steel tubing. Ornament, cord hook, shafts and clamps are electro-plated.

Cast iron base with 18-inch diameter, and four ½-inch diameter holes equally spaced in rim for screws or casters. Galvanized; finished red.

Fixtures are wired with 25 feet of rubber covered service cable. Two-wire cables have soft rubber plug; three-wire cables, less plug, have wires skinned and tinned.

Interiors sealed against dust and moisture by heat-resisting cover glasses and gaskets. Wire guard, welded to the cover band, protects glass. Guard and band heavily tinned. Clear cover glass in 75-100 watts; stippled in 150-200 watts.

Porcelain enameled reflector, white inside and green outside. Symmetrical

shape gives wide, even light.

Aluminum reflector has efficient, polished reflecting surface. Beam spread, 25° minimum to 60° maximum.

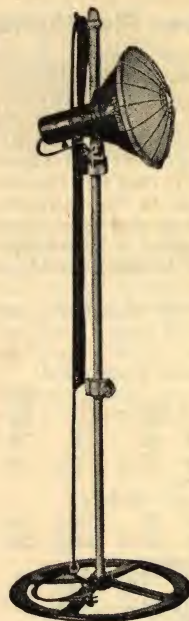
## Porcelain Floodlights Complete with Stand

Size Lamp Watts	2-Wire Cable		*3-Wire Cable		Diam. In.	Ship. Wt. Lb.
	No.	Each	No.	Each		
75-100	5785	\$16.00	5788	\$16.75	8½	30
150-200	5786	20.75	5789	21.50	10⅞	35

## Aluminum Floodlights Complete with Stand

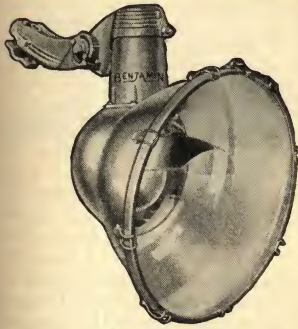
150-200	5787	\$20.75	.....	.....	10⅞	34
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\*Listed as Vaportight by Underwriters' Laboratories.



No. 5786



**Benjamin Alzo-Lite Long-Range Floodlights****For 750-1500-Watt Lamps****No. N6192**

A narrow-beam, open-type unit primarily designed for football field floodlighting from behind the stands when located 55 to 150 feet back from the sideline.

Reflector has bi-focal, compound, three-element projector of Alzak aluminum. Section behind the lamp is polished, while section in front is etched. Outside is baked aluminum enamel over Alzak.

Etched Alzak aluminum deflector, positioned above and in front of lamp filament to direct a portion of the light downward.

Skeleton type receptacle, with mogul base.

Diameter, 18 $\frac{1}{4}$  inches; height, 23 $\frac{3}{8}$  inches; and width, 12 $\frac{1}{2}$  inches.

Cross arm units supplied with a 26-inch length of No. 14 two-conductor AFS rubber covered cable; slip-fitter units have two 31-inch lengths of No. 14 solid AF wire.

Fittings, not aluminum are electro-plated.

**With Cross Arm Brackets**

Fits 4 $\frac{1}{4}$ -inch standard arms and all flat surfaces.

Description	Less Glass Cover			With Glass Cover		
	No.	Each	Wt., Lb.	No.	Each	Wt., Lb.
Less Deflector	N5996	\$36.00	18	N6196	\$51.00	30
With Deflector	N5991	38.00	18 $\frac{1}{2}$	N6191	53.00	32 $\frac{1}{2}$

**With Cross Arm Brackets and Pipe Clamps**

Pipe Clamp fits around 1 to 2-inch iron pipe.

Less Deflector	N5997	\$37.00	18 $\frac{3}{4}$	N6197	\$52.00	30 $\frac{3}{4}$
With Deflector	N5992	39.00	19 $\frac{1}{2}$	N6192	54.00	33

**With Slip-Fitter Brackets**

Fits on 1 $\frac{1}{2}$  Inch Iron Pipe

Less Deflector	N5998	\$38.00	18 $\frac{1}{2}$	N6198	\$53.00	24
With Deflector	N5993	40.00	16 $\frac{1}{2}$	N6193	55.00	31

Fits on 2-Inch Iron Pipe

Less Deflector	N5998A	\$38.00	19	N6198A	\$53.00	24
With Deflector	N5993A	40.00	16 $\frac{1}{2}$	N6193A	55.00	31 $\frac{1}{2}$

Floodlights can be supplied with shoulder for 750 and 1000-watt, medium Bi-post, hard-glass lamps. To order, prefix number with BP and add \$2.00 list.

**Benjamin Floodlighting Projectors****Model RD14**

Meets major requirements of modern floodlighting practice. Weatherproof projector; one-piece all aluminum housing; heat resisting cover glass.

May be rotated and turned on supporting staff. Reflecting surface is silvered glass protected by a coating of copper. Supplied with horizontal and vertical stops.

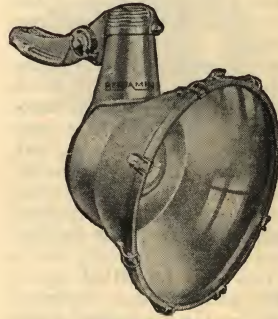
Special visors and louver rings are available at an advance in price.

**Model RD11**

11-Inch Diameter Reflector for 200-Watt General Service Lamps, and 250-Watt Floodlighting Lamps

Shipping weight, 21 pounds.

No. 5825, Plain Glass Cover.....each	\$38.00
No. 5826, Stippled Glass Cover.....each	38.00
No. 5827, Ribbed Glass Cover.....each	38.00

**Benjamin Alzo-Lite Medium-Spread Floodlights****For 750-1500-Watt Lamps****No. N6146**

A medium-spread reflector approximating a 90° beam designed for floodlighting baseball, softball, and football fields, etc.

Reflector has bi-focal, compound, three-element projector of etched Alzak aluminum. Exterior is baked enamel over Alzak.

Waterproof cover hinged to top of reflector and attached by spring clamps around the rim. Disc is clear, heat-resisting glass, specially gasketed and cemented and secured in cover frame by an internal expanding band.

Skeleton type receptacle, with mogul screw base.

Separable hood construction makes possible removal of reflector for cleaning or easier installation. Neck has water-tight joint at reflector with concealed attaching screws.

Diameter, 18 $\frac{1}{4}$  inches; height, 23 $\frac{1}{4}$  inches; width, 12 $\frac{1}{2}$  inches.

Cross arm bracket units supplied with 26-inch length of No. 14 two-conductor AFS rubber covered cable; slip-fitter units have two 31-inch lengths of No. 14 solid AF single conductor wire.

Fittings, not aluminum are electro-plated.

**With Cross Arm Brackets**

No.	Less Glass Cover			With Glass Cover		
	No.	Each	Wt., Lb.	No.	Each	Wt., Lb.
N6156		\$29.00	18 $\frac{1}{2}$	N6146	\$44.00	30 $\frac{1}{2}$

**With Cross Arm Brackets and Pipe Clamps**

Fits around 1 to 2-inch iron pipe.

N6157	\$30.00	19 $\frac{1}{4}$	N6147	\$45.00	31 $\frac{1}{4}$
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**With Slip-Fitter Brackets**

Fits on 1 $\frac{1}{2}$ -Inch Iron Pipe

N6158	\$31.00	19	N6148	\$46.00	31
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Fits on 2-Inch Iron Pipe

N6158A	\$31.00	19 $\frac{1}{2}$	N6148A	\$46.00	31 $\frac{1}{2}$
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**For Bi-Post Lamps**

Floodlights can be supplied with holders for 750 and 1000-watt, medium Bi-post, hard-glass lamps. To order, prefix number with BP and add \$2.00 list.

**Model RD14**

14-Inch Diameter Universal Service Reflector That Can Be Used with Either 500-Watt Floodlighting Lamps or 300-500-Watt General Service Lamps

Shipping weight, 38 pounds.

No. 5850, Plain Glass Cover.....each	\$60.00
No. 5851, Stippled Glass Cover.....each	60.00
No. 5852, Ribbed Glass Cover.....each	60.00

**Model RD18**

18-Inch Diameter Universal Service Reflector That Can Be Used with Either 1000-Watt Floodlighting Lamps or 750 or 1000-Watt General Service Lamps

Shipping weight, 60 pounds.

No. 5875, Plain Glass Cover.....each	\$85.00
No. 5876, Stippled Glass Cover.....each	85.00
No. 5877, Ribbed Glass Cover.....each	85.00

**Model RD20**

20-Inch Diameter Universal Service Reflector That Can Be Used with Either 1400-Watt Floodlighting Lamps or 1500-Watt General Service Lamps

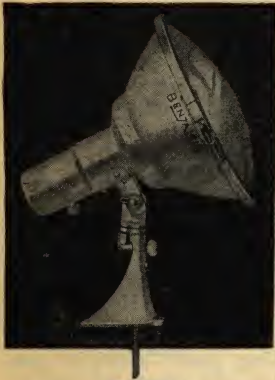
Shipping weight, 80 pounds.

No. 5892, Plain Glass Cover.....each	\$140.00
No. 5893, Stippled Glass Cover.....each	140.00
No. 5894, Ribbed Glass Cover.....each	140.00



## Benjamin Utility Floodlights

150-200 Watts



No. 6011

For general purpose and decorative floodlighting jobs.

The interior surface of the sheet aluminum housing forms a highly efficient reflector. Concentrating units have durable, highly polished Alzak aluminum reflecting surfaces while spread type units have reflecting surfaces of etched, aluminum oxide. Diameter, 10 $\frac{1}{2}$  inches. Beam focusing mechanism is controlled by a single thumb screw on the barrel of the housing.

Units can be tilted up or down or turned in a circle.

Reflecting surfaces are sealed against dust and moisture by the heat-resisting cover

glass which seats against an impregnated asbestos gasket, held in place by a removable aluminum channel band.

Three styles of mounting provided by the two types of brackets. Pedestal base is cast iron and includes a removable steel spike for turf mounting. Also has slotted screw holes for surface attachment. Pipe bracket is cast iron, tapped  $\frac{1}{2}$  inch, with a weatherproof wire entrance bushing in the removable wiring plate.

Pedestal base and spike has a 5-foot, 7 inches rubber covered cord and plug cap; pipe bracket types have 15-inch pigtail for lead-in to bracket.

#### With Concentrating Type Polished Alzak Aluminum Reflectors

Style Bracket	Plain Clear Cover		Stippled Clear Cover		Shipping Weight Pounds
	No.	Each	No.	Each	
Base and Spike...	*6007	\$14.50	6011	\$14.50	9 $\frac{1}{2}$
Pipe Bracket....	*6014	14.50	6016	14.50	9

#### With Spread Type Etched Aluminum Oxide Reflectors

Base and Spike..	6010	\$12.50	6012	\$12.50	10
Pipe Bracket.....	6015	12.50	6017	12.50	9 $\frac{1}{2}$

#### Covers and Receptacles

No. 6090 Plain Clear Cover.....	each	\$3.50
No. 5802-CL Stippled Clear Cover.....	each	3.50
No. 6092 Ribbed Clear Cover.....	each	3.50
No. 1462 Receptacle Only.....	each	.30

\*Due to striae caused by filament images in all polished reflectors, these plain cover glass units are not recommended.

RIBBED COVERS, available for all units at regular prices. To order, prefix number of plain cover unit with R.

WITHOUT COVER, available at a \$4.00 reduction in price of complete unit. To order use the following numbers: for concentrating units, with base and spike, No. 6005—with pipe bracket, No. 6018; for spread units, with base and spike, No. 6006—with pipe bracket, No. 6020.

#### Beam Lumens and Range of Beam Spreads

The lumen figures below are based on the use of general service lamps with clear bulbs. With lamps having inside frosted bulbs, beam spreads in all cases will be increased considerably.

#### 150-Watt, 2610-Lumen General Service Lamps

Type of Cover	Concentrating Polished Reflectors				Spread Etched Reflectors			
	MINIMUM SPREAD		MAXIMUM SPREAD		MINIMUM SPREAD		MAXIMUM SPREAD	
	Beam	Lumens	Beam	Lumens	Beam	Lumens	Beam	Lumen
Plain....					78°	1420	100°	1654
Stippled..	48°	994	112°	1654	84°	1414	102°	1535
Ribbed..	52°x74°	11330	56°x76°	11359				

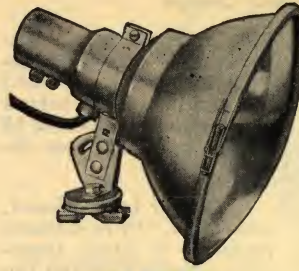
#### 200-Watt, 3640-Lumen General Service Lamps

Plain....					78°	1981	100°	2308
Stippled..	48°	1385	112°	2309	84°	1971	102°	2140
Ribbed..	52°x74°	11855	56°x76°	11895				

‡Approximate lumens.

## Benjamin Utility Floodlights

300-500 Watts



No. S6023B

Weatherproof, durable, attractive appearing units of high lighting efficiency.

The interior of the sheet aluminum housing forms a highly efficient reflector. Concentrating type reflectors have highly polished Alzak aluminum reflecting surfaces while spread type reflectors have reflecting surfaces of etched Alzak aluminum. Diameter, 14 $\frac{1}{8}$  inches.

Projectors are of durable, weatherproof and dust-tight construction. Housings are of sheet aluminum, with both exterior and reflecting surfaces of durable Alzak aluminum. Wire entrance into the housing is weatherproof. Glass cover held in place by an aluminum channel band.

Colored lighting effects are obtainable through the use of glass color plates. These plates do not supplant the standard cover glass as they are set behind the regular cover.

Floodlights are wired and include 3-foot leads of No. 14 AFS rubber sheathed portable cord with tinned ends. Skeleton type receptacle, with mogul screw base.

Type B swivel and stand, is for attachment to any flat surface. Type D pipe clamp, attaches to 1 to 2-inch size iron pipe or  $\frac{1}{4}$  to 2 $\frac{3}{8}$ -inch tubing. Type E wall bracket is for wall attachment. Type H slip fitter is for mounting over the end of a 1 $\frac{1}{2}$ -inch iron pipe. Type K pipe bracket is to thread units to  $\frac{1}{2}$ -inch pipe standards, but can be furnished to fit  $\frac{3}{4}$ -inch standards, when specified. Type M cross arm is for attachment to standard  $\frac{1}{4}$ -inch cross arms.

#### With Concentrating Type Polished Alzak Aluminum Reflectors

*With Plain Glass Cover	Type B, Swivel and Stand		Type D, Pipe Clamp		Type E, Wall Bracket		Shipping Weight Pounds
	No.	Each	No.	Each	No.	Each	
P6023B	\$31.00		S6023B	\$31.00	R6023B	\$31.00	16
P6023D	\$31.00		S6023D	\$31.00	R6023D	\$31.00	17
P6023E	\$32.00		S6023E	\$32.00	R6023E	\$32.00	20
P6023H	\$32.00		S6023H	\$32.00	R6023H	\$32.00	18 $\frac{1}{2}$
P6023K	\$32.00		S6023K	\$32.00	R6023K	\$32.00	18
P6023M	\$30.00		S6023M	\$30.00	R6023M	\$30.00	15 $\frac{1}{2}$

#### With Spread Type Etched Alzak Aluminum Reflectors

*With Plain Glass Cover	Type B, Swivel and Stand		Type D, Pipe Clamp		Type E, Wall Bracket		Shipping Weight Pounds
	No.	Each	No.	Each	No.	Each	
P6022B	\$26.00		S6022B	\$26.00	R6022B	\$26.00	16
P6022D	\$26.00		S6022D	\$26.00	R6022D	\$26.00	17
P6022E	\$27.00		S6022E	\$27.00	R6022E	\$27.00	20
P6022H	\$27.00		S6022H	\$27.00	R6022H	\$27.00	18 $\frac{1}{2}$
P6022K	\$27.00		S6022K	\$27.00	R6022K	\$27.00	18
P6022M	\$25.00		S6022M	\$25.00	R6022M	\$25.00	15 $\frac{1}{2}$

#### Parts

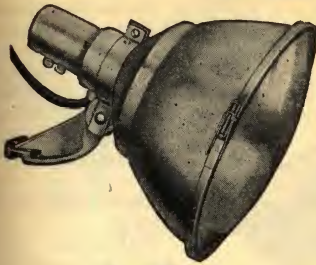
No. 6055 Red Glass Color Plate.....	each	\$9.00
No. 6056 Green Glass Color Plate.....	each	9.00
No. 6057 Amber Glass Color Plate.....	each	9.00
No. 6058 Blue Glass Color Plate.....	each	9.00
No. 6080 Visor.....	each	4.00
No. 6093 Plain Glass Cover.....	each	6.00
No. 6094 Stippled Glass Cover.....	each	6.00
No. 6095 Ribbed Glass Cover.....	each	6.00
No. 2780 Mogul Receptacle.....	each	1.05

\*Due to striae caused by filament images in polished reflectors, these units are not recommended.

WITHOUT COVER, available at a \$6.00 reduction in price of complete unit. For units without cover, use No. 6025 to indicate the concentrating type and No. 6024, the spread type unit. This number is to be suffixed in each instance with one of the six letters used above to indicate the bracket style desired.



## Benjamin Weatherproof Utility Floodlights 750-1000 Watts



No. P6032M

Weatherproof, durable, attractive appearing units of high lighting efficiency.

The interior of the sheet aluminum housing forms a highly efficient reflector. Concentrating type reflectors have highly polished Alzak aluminum reflecting surfaces while spread type reflectors have reflecting surfaces of etched Alzak aluminum. Diameter, 16½ inches.

Projectors are of durable, weatherproof and dust-tight construction. Housings are of sheet aluminum, with both exterior and reflecting surfaces of durable Alzak aluminum. Wire entrance into the housing is weatherproof. Glass cover held in place by an aluminum channel band.

Colored lighting effects are obtainable through the use of glass color plates. These plates do not supplant the standard cover glass as they are set behind the regular cover.

Floodlights are wired and include 3-foot leads of No. 14 AFS rubber sheathed portable cord with tinned ends. Skeleton type receptacle, with mogul screw base.

Type B swivel and stand, is for attachment to any flat surface. Type D pipe clamp, attaches to 1 to 2-inch size iron pipe or 1¼ to 2½-inch tubing. Type E wall bracket is for wall attachment. Type H slip fitter is for mounting over the end of a 1½-inch iron pipe. Type K pipe bracket is to thread units to ½-inch pipe standards, but can be furnished to fit ¾-inch standards, when specified. Type M cross arm is for attachment to standard 4¼-inch cross arms.

### With Concentrating Type Polished Alzak Aluminum Reflectors

*With Plain Glass Cover		Type B, Swivel and Stand With Stippled Glass Cover		With Ribbed Glass Cover		Shipping Weight Pounds
No.	Each	No.	Each	No.	Each	
P6033B	\$40.00	S6033B	\$40.00	R6033B	\$40.00	20
P6033D	\$40.00	S6033D	\$40.00	R6033D	\$40.00	22
P6033E	\$41.00	S6033E	\$41.00	R6033E	\$41.00	23
P6033H	\$41.00	S6033H	\$41.00	R6033H	\$41.00	22
P6033K	\$41.00	S6033K	\$41.00	R6033K	\$41.00	21
P6033M	\$39.00	S6033M	\$39.00	R6033M	\$39.00	19

### With Spread Type Etched Alzak Aluminum Reflectors

Type B, Swivel and Stand		Type D, Pipe Clamp		Type E, Wall Bracket		Shipping Weight Pounds
No.	Each	No.	Each	No.	Each	
P6032B	\$34.00	S6032B	\$34.00	R6032B	\$34.00	20
P6032D	\$34.00	S6032D	\$34.00	R6032D	\$34.00	22
P6032E	\$35.00	S6032E	\$35.00	R6032E	\$35.00	23
P6032H	\$35.00	S6032H	\$35.00	R6032H	\$35.00	22
P6032K	\$35.00	S6032K	\$35.00	R6032K	\$35.00	21
P6032M	\$33.00	S6032M	\$33.00	R6032M	\$33.00	19

### Parts

No. 6060	Red Glass Color Plate.....	each	\$13.00
No. 6061	Green Glass Color Plate.....	each	13.00
No. 6062	Amber Glass Color Plate.....	each	13.00
No. 6063	Blue Glass Color Plate.....	each	13.00
No. 6081	Visor.....	each	4.00
No. 5856	Plain Glass Cover.....	each	8.50
No. 5857	Stippled Glass Cover.....	each	8.50
No. 5858	Ribbed Glass Cover.....	each	8.50
No. 2780	Mogul Receptacle.....	each	1.05

\*Due to striae caused by filament images in polished reflectors, these units are not recommended.

WITHOUT COVER, available at a \$11 reduction in price of complete unit. For units without cover, use No. 6035 to indicate the concentrating type and No. 6034, the spread type unit. This number is to be suffixed in each instance with one of the six letters used above to indicate the bracket style desired.

## Revere Adjustable Triangular Floodlights



No. 3086

Ideal for service station lighting. Casts a definite 90° beam pattern to provide efficient property-line cutoff lighting.

Light area is controlled by a head and telescopic arm, which provide vertical adjustment of 37° and a total horizontal range of 360°.

Head conceals all wiring. Clips hold wire secure and take all strain off socket terminals.

Reflector is made of Alzak aluminum. All castings are made of aluminum. Screws and fittings are made of either aluminum alloy, brass, or cadmium plated steel.

Lamp.....watts	750-1000	300-500	400
Type Lamp.....	Bi-Post	Gen. Serv.	H-1 Mercury
Slips 1½-Inch Pipe:			
No.....	3086	3087	3088
Each.....	\$25.00	\$24.00	\$24.00
Approx. Ship. Wt....lb.	17	17	17
Slips 2-Inch Pipe:			
No.....	3086A	3087A	3088A
Each.....	25.00	24.00	24.00
Approx. Ship. Wt....lb.	17½	17½	17½
Clamp Mounting:			
No.....	3086B	3087B	3088B
Each.....	27.00	26.00	26.00
Approx. Ship. Wt....lb.	20½	20½	20½
Wall Mounting:			
No.....	3086C	3087C	3088C
Each.....	26.60	25.60	25.60
Approx. Ship. Wt....lb.	19½	19½	19½
Cross Arm Mounting:			
No.....	3086D	3087D	3088D
Each.....	26.50	25.50	25.60
Approx. Ship. Wt....lb.	19	19	19

## Revere Show-Master Spotlights

For 150 and 300-Watt Lamps



No. 3175

For a multitude of merchandizing applications where efficient illumination of the product is desired.

No. 3175 is for floor or wall mounting and is furnished with a neatly designed base for mounting to horizontal or vertical surfaces. Cord and plug are furnished but not wired.

No. 3176 is for ceiling and wall mounting and is furnished with a standard outlet box cover.

Both types accommodate 150-watt par 38, 150-watt R-40, or 300-watt R-40 lamps.

Housing is made of spun aluminum with natural aluminum finish.

Concentric louvers are furnished to control the direct rays of the lamps used.

Diameter, 5 inches. Height, 11 inches.

No.	Description	Each
3175	With Cord and Plug.....	\$13.15
3176	With Outlet Box Cover.....	12.60
4696	Red Filter, With Holding Clips.....	1.00
4697	Blue Filter, With Holding Clips.....	1.00
4698	Amber Filter, With Holding Clips.....	1.00
4699	Green Filter, With Holding Clips.....	1.00

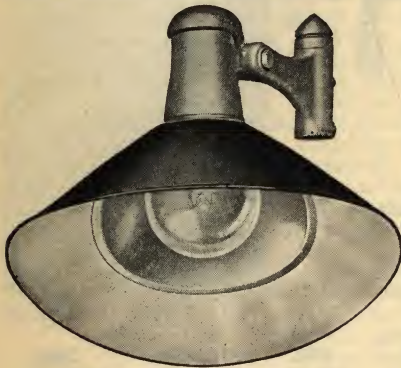


## Revere Eliptor Floodlights

## Porcelain

300 to 1500 Watts

Easy to adjust, as all adjustments are made from one position on one side of the housing. Inner reflector is plated



semi specular finish, giving maximum projection and control.

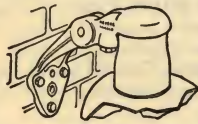
Any of the 500-watt floodlights can be used with the 400-watt type base-burning mercury lamp. Care must be exercised in setting the floodlight, keeping lamp within 10° of vertical.

Porcelain enamel steel reflector, white inside and

red, green or blue outside finish. Other colors available.



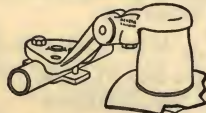
Cross Arm Mounting for Wood or Angle Iron



Wall Mounting



Clamps Around 1 1/2 to 2-Inch Vertical Pipe



Clamps Around 1 1/2 to 2-Inch Horizontal Pipe



Wall Type, Clamped Back to Back for Installation On Pole



Hole Spacing on Cross Arm or Wall Mounting

Mounting	Size Lamp Watts	Without Inner Reflector		With Inner Reflector		Wt. Lb.
		No.	Each	No.	Each	
1 1/2-Inch Pipe	300-500	3800	\$18.00	3820	\$21.00	20
Slip Fitter...	750-1000-1500	3801	19.00	3821	22.00	20
	750-1000 Bi-Post	3800-B	20.00	3820-B	23.00	20
2-Inch Pipe	300-500	3802	18.00	3822	21.00	20
Slip Fitter...	750-1000-1500	3803	19.00	3823	22.00	20
	750-1000 Bi-Post	3802-B	20.00	3822-B	23.00	20
Pipe Clamp	300-500	3804	17.00	3824	20.00	22
Bracket....	750-1000-1500	3805	18.00	3825	21.00	22
	750-1000 Bi-Post	3804-B	19.00	3824-B	22.00	22
Cross Arm and	300-500	3806	16.00	3826	19.00	22
Wall Bracket	750-1000-1500	3807	17.00	3827	20.00	22
	750-1000 Bi-Post	3806-B	18.00	3826-B	21.00	22
*Pendent Mtg. for 3/4-Inch	300-500	3808	14.00	3828	17.00	22
Pipe.....	750-1000-1500	3809	15.00	3829	18.00	22
	750-1000 Bi-Post	3808-B	16.00	3828-B	19.00	22

## Aluminum

## Without Inner Reflector

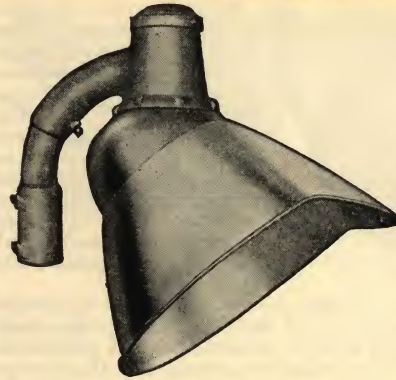
Mounting	Watt		Watt		Watt Bi-Post	
	No.	Each	No.	Each	No.	Each
Cross Arm and						
Wall Bracket...	3851	\$18.00	3861	\$19.00	3871	\$20.00
1 1/2-Inch Slip... Fitter	3852	20.00	3862	19.00	3872	22.00
2-Inch Slip Fitter.	3853	20.00	3863	21.00	3873	22.00
Pipe Clamp						
Bracket.....	3854	19.00	3864	20.00	3874	21.00
*Pendent Mtg. for 3/4-Inch						
Pipe....	3859	16.00	3869	17.00	3879	18.00

\*Can be furnished for 1/2 or 1-inch pipe, when specified, at no extra cost.

One set (2) bolts and nuts (No. 3819) is available at \$.40 per set to mount two cross arm brackets back to back on 1 1/2 or 2-inch pipe.

## Revere Open-Type Floodlights

300-1000 Watts



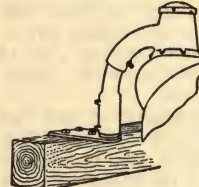
Reflector is made of Alzak aluminum.

All cast parts are made of aluminum. Screws and fittings are aluminum alloy, brass, or cadmium plated steel.

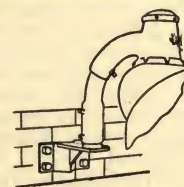
Head conceals all wiring.

Telescopic arm provides a positive vertical adjustment controlled by one set screw, for a range of 37°. Horizontal adjustment of 360° is controlled

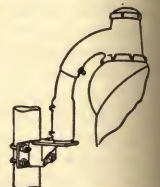
by two set screws. Lens diameter, 18 1/2 inches.



Cross Arm Mounting



Wall or Wood Pole Mounting



Clamp Mounting for 2, 2 1/2 or 3-Inch Pipe

## With Round Reflector

Lamp.....watts	750-1000	300-500	400
	Bi-Post	Gen. Serv.	H-1 Mercury
Type Lamp.....			
Slips 1 1/2-Inch Pipe:			
No.....	3080	3081	3082
Each.....	\$22.00	\$21.00	\$21.00
Approx. Wt.pounds	13	13	13
Slips 2-Inch Pipe:			
No.....	3080A	3081A	3082A
Each.....	22.00	21.00	21.00
Approx. Wt.pounds	13 1/2	13 1/2	13 1/2
Clamp Mounting:			
No.....	3080B	3081B	3082B
Each.....	24.00	23.00	23.00
Approx. Wt.pounds	17	17	17
Wall Mounting:			
No.....	3080C	3081C	3082C
Each.....	23.60	22.60	22.60
Approx. Wt.pounds	15 1/2	15 1/2	15 1/2
Cross Arm Mounting:			
No.....	3080D	3081D	3082D
Each.....	23.50	22.50	22.50
Approx. Wt.pounds	15	15	15

## With Formed Reflector

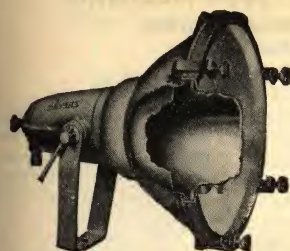
Lamp.....watts	750-1000	300-500	400
	Bi-Post	Gen. Serv.	H-1 Mercury
Type Lamp.....			
Slips 1 1/2-Inch Pipe:			
No.....	3083	3084	3085
Each.....	\$22.00	\$21.00	\$21.00
Approx. Wt.pounds	13	13	13
Slips 2-Inch Pipe:			
No.....	3083A	3084A	3085A
Each.....	22.00	21.00	21.00
Approx. Wt.pounds	13 1/2	13 1/2	13 1/2
Clamp Mounting:			
No.....	3083B	3084B	3085B
Each.....	24.00	23.00	23.00
Approx. Wt.pounds	17	17	17
Wall Mounting:			
No.....	3083C	3084C	3085C
Each.....	23.60	22.60	22.60
Approx. Wt.pounds	15 1/2	15 1/2	15 1/2
Cross Arm Mounting:			
No.....	3083D	3084D	3085D
Each.....	23.50	22.50	22.50
Approx. Wt.pounds	15	15	15

Visors for use with the above units for redirection of light or for blocking out light in any given direction are (No. 3078) are available at \$.40 additional.

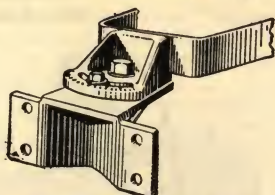


### Revere Enclosed Type Floodlights

150-200, 300-500, and 750-1000 Watts  
Dust-Tight—Weatherproof



No. 7100



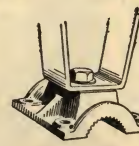
Bracket for Wall or Wood Pole Mounting



Slip Fitter



Clamp



Flat Base



Standard Base

Made of spun sheet aluminum with cast aluminum neck and socket mounting. A separate removable aluminum casting is used for the mounting of the socket and focusing mechanism.

Hermetically sealed by an impregnated asbestos gasket attached to the ring.

Focusing mechanism is furnished as standard on narrow beam type only. If desired, mechanism can be furnished for fixed focus.

Plain lens is used where it is not desired to change the characteristic of the beam. A stippled lens is used where a wider spread of light is desired and the ribbed lens is used when an oval pattern is desired.

#### 150-200 Watts

With 12-Inch Heat-Resisting Lens  
Clamp Cover Glass

Mounting	No Lens		Plain		Stippled		Ribbed		Plain		Stippled		Ribbed	
	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each
Yoke Only.....	7110W	\$18.00	7110WP	\$23.00	7110WS	\$23.00	7110WR	\$23.00	7120NP	\$27.50	7120NS	\$27.50	7120NR	\$27.50
Cross Arm.....	7111W	19.00	7111WP	24.00	7111WS	24.00	7111WR	24.00	7121NP	28.50	7121NS	28.50	7121NR	28.50
1½" Slip Fitter.....	7112W	19.80	7112WP	24.80	7112WS	24.80	7112WR	24.80	7122NP	29.30	7122NS	29.30	7122NR	29.30
2" Slip Fitter.....	7113W	19.80	7113WP	24.80	7113WS	24.80	7113WR	24.80	7123NP	29.30	7123NS	29.30	7123NR	29.30
Clamp 1"-2" Pipe.....	7114W	19.80	7114WP	24.80	7114WS	24.80	7114WR	24.80	7124NP	29.30	7124NS	29.30	7124NR	29.30
Standard Base.....	7115W	19.00	7115WP	24.00	7115WS	24.00	7115WR	24.00	7125NP	28.50	7125NS	28.50	7125NR	28.50
Flat Base.....	7117W	19.00	7117WP	24.00	7117WS	24.00	7117WR	24.00	7127NP	28.50	7127NS	28.50	7127NR	28.50
Wall Mounting.....	7118W	20.00	7118WP	25.00	7118WS	25.00	7118WR	25.00	7128NP	29.50	7128NS	29.50	7128NR	29.50

#### Hinged Cover Glass

Mounting	No Lens		Plain		Stippled		Ribbed		Plain		Stippled		Ribbed	
	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each
Yoke Only.....	7110WPH	\$31.30	7110WSPH	\$31.30	7110WSH	\$31.30	7110WRH	\$31.30	7120NPH	\$35.80	7120NSH	\$35.80	7120NRH	\$35.80
Cross Arm.....	7111WPH	32.30	7111WSPH	32.30	7111WSH	32.30	7111WRH	32.30	7121NPH	36.80	7121NSH	36.80	7121NRH	36.80
1½" Slip Fitter.....	7112WPH	33.10	7112WSPH	33.10	7112WSH	33.10	7112WRH	33.10	7122NPH	37.60	7122NSH	37.60	7122NRH	37.60
2" Slip Fitter.....	7113WPH	33.10	7113WSPH	33.10	7113WSH	33.10	7113WRH	33.10	7123NPH	37.60	7123NSH	37.60	7123NRH	37.60
Clamp 1"-2" Pipe.....	7114WPH	33.10	7114WSPH	33.10	7114WSH	33.10	7114WRH	33.10	7124NPH	37.60	7124NSH	37.60	7124NRH	37.60
Standard Base.....	7115WPH	32.30	7115WSPH	32.30	7115WSH	32.30	7115WRH	32.30	7125NPH	36.80	7125NSH	36.80	7125NRH	36.80
Flat Base.....	7117WPH	32.30	7117WSPH	32.30	7117WSH	32.30	7117WRH	32.30	7127NPH	36.80	7127NSH	36.80	7127NRH	36.80
Wall Mounting.....	7118WPH	33.30	7118WSPH	33.30	7118WSH	33.30	7118WRH	33.30	7128NPH	37.80	7128NSH	37.80	7128NRH	37.80

#### 300-500 Watts

Mounting	No Lens		Plain		Stippled		Ribbed		Plain		Stippled		Ribbed	
	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each
Yoke Only.....	7140W	\$24.60	7140WP	\$31.00	7140WS	\$31.00	7140WR	\$31.00	7150NP	\$35.70	7150NS	\$35.70	7150NR	\$35.70
Cross Arm.....	7141W	25.60	7141WP	32.00	7141WS	32.00	7141WR	32.00	7151NP	36.70	7151NS	36.70	7151NR	36.70
1½" Slip Fitter.....	7142W	26.40	7142WP	32.80	7142WS	32.80	7142WR	32.80	7152NP	37.50	7152NS	37.50	7152NR	37.50
2" Slip Fitter.....	7143W	26.40	7143WP	32.80	7143WS	32.80	7143WR	32.80	7153NP	37.50	7153NS	37.50	7153NR	37.50
Clamp 1"-2" Pipe.....	7144W	26.40	7144WP	32.80	7144WS	32.80	7144WR	32.80	7154NP	37.50	7154NS	37.50	7154NR	37.50
Standard Base.....	7145W	25.60	7145WP	33.00	7145WS	33.00	7145WR	33.00	7155NP	36.70	7155NS	36.70	7155NR	36.70
Flat Base.....	7147W	25.60	7147WP	33.00	7147WS	33.00	7147WR	33.00	7157NP	36.70	7157NS	36.70	7157NR	36.70
Wall Mounting.....	7148W	26.60	7148WP	34.00	7148WS	34.00	7148WR	34.00	7158NP	37.70	7158NS	37.70	7158NR	37.70

#### Hinged Cover Glass

Mounting	No Lens		Plain		Stippled		Ribbed		Plain		Stippled		Ribbed	
	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each
Yoke Only.....	7140WPH	\$38.40	7140WSPH	\$38.40	7140WSH	\$38.40	7140WRH	\$38.40	7150NPH	\$45.00	7150NSH	\$45.00	7150NRH	\$45.00
Cross Arm.....	7141WPH	39.40	7141WSPH	39.40	7141WSH	39.40	7141WRH	39.40	7151NPH	46.00	7151NSH	46.00	7151NRH	46.00
1½" Slip Fitter.....	7142WPH	40.20	7142WSPH	40.20	7142WSH	40.20	7142WRH	40.20	7152NPH	46.80	7152NSH	46.80	7152NRH	46.80
2" Slip Fitter.....	7143WPH	40.20	7143WSPH	40.20	7143WSH	40.20	7143WRH	40.20	7153NPH	46.80	7153NSH	46.80	7153NRH	46.80
Clamp 1"-2" Pipe.....	7144WPH	40.20	7144WSPH	40.20	7144WSH	40.20	7144WRH	40.20	7154NPH	46.80	7154NSH	46.80	7154NRH	46.80
Standard Base.....	7145WPH	39.40	7145WSPH	39.40	7145WSH	39.40	7145WRH	39.40	7155NPH	46.00	7155NSH	46.00	7155NRH	46.00
Flat Base.....	7147WPH	39.40	7147WSPH	39.40	7147WSH	39.40	7147WRH	39.40	7157NPH	46.00	7157NSH	46.00	7157NRH	46.00
Wall Mounting.....	7148WPH	40.40	7148WSPH	40.40	7148WSH	40.40	7148WRH	40.40	7158NPH	47.00	7158NSH	47.00	7158NRH	47.00

#### 750-1000 Watts

Mounting	No Lens		Plain		Stippled		Ribbed		Plain		Stippled		Ribbed	
	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each
Yoke Only.....	7170W	\$26.60	7170WP	\$35.90	7170WS	\$35.90	7170WR	\$35.90	7180NP	\$43.20	7180NS	\$43.20	7180NR	\$43.20
Cross Arm.....	7171W	27.60	7171WP	36.90	7171WS	36.90	7171WR	36.90	7181NP	44.20	7181NS	44.20	7181NR	44.20
1½" Slip Fitter.....	7172W	28.40	7172WP	37.70	7172WS	37.70	7172WR	37.70	7182NP	45.00	7182NS	45.00	7182NR	45.00
2" Slip Fitter.....	7173W	28.40	7173WP	37.70	7173WS	37.70	7173WR	37.70	7183NP	45.00	7183NS	45.00	7183NR	45.00
Clamp 1"-2" Pipe.....	7174W	28.40	7174WP	37.70	7174WS	37.70	7174WR	37.70	7184NP	45.00	7184NS	45.00	7184NR	45.00
Standard Base.....	7175W	27.60	7175WP	36.90	7175WS	36.90	7175WR	36.90	7185NP	44.20	7185NS	44.20	7185NR	44.20
Flat Base.....	7177W	27.60	7177WP	36.90	7177WS	36.90	7177WR	36.90	7187NP	44.20	7187NS	44.20	7187NR	44.20
Wall Mounting.....	7178W	28.60	7178WP	37.90	7178WS	37.90	7178WR	37.90	7188NP	45.20	7188NS	45.20	7188NR	45.20

#### Hinged Cover Glass

Mounting	No Lens		Plain		Stippled		Ribbed		Plain		Stippled		Ribbed	
	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each
Yoke Only.....	7170WPH	\$45.70	7170WSPH	\$45.70	7170WSH	\$45.70	7170WRH	\$45.70	7180NPH	\$53.00	7180NSH	\$53.00	7180NRH	\$53.00
Cross Arm.....	7171WPH	46.70	7171WSPH	46.70	7171WSH	46.70	7171WRH	46.70	7181NPH	54.00	7181NSH	54.00	7181NRH	54.00
1½" Slip Fitter.....	7172WPH	47.50	7172WSPH	47.50	7172WSH	47.50	7172WRH	47.50	7182NPH	55.00	7182NSH	55.00	7182NRH	55.00
2" Slip Fitter.....	7173WPH	47.50	7173WSPH	47.50	7173WSH	47.50	7173WRH	47.50	7183NPH	55.00	7183NSH	55.00	7183NRH	55.00
Clamp 1"-2" Pipe.....	7174WPH	47.50	7174WSPH	47.50	7174WSH	47.50	7174WRH	47.50	7184NPH	55.00	7184NSH	55.00	7184NRH	55.00
Standard Base.....	7175WPH	46.70	7175WSPH	46.70	7175WSH	46.70	7175WRH	46.70	7185NPH	54.00	7185NSH	54.00	7185NRH	54.00
Flat Base.....	7177WPH	46.70	7177WSPH	46.70	7177WSH	46.70	7177WRH	46.70	7187NPH	54.00	7187NSH	54.00	7187NRH	54.00
Wall Mounting.....	7178WPH	47.70	7178WSPH	47.70	7178WSH	47.70	7178WRH	47.70	7188NPH	55.00	7188NSH	55.00	7188NRH	55.00



## Revere Economy Line Floodlights

75-100, 150-200, and 300-500 Watts

Weatherproof

Wide Beam—Narrow Beam



No. 5917WP

Made of aluminum with Alzak finish throughout.

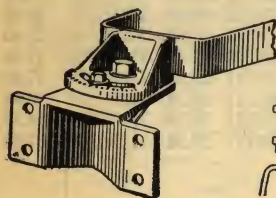
Supporting yoke is attached to a clamping ring which encircles neck of the reflector.

Reflector is held in position by wing nuts which permit adjustment in any direction.

Flat base illustrated is of the outlet box cover type, fitting a standard 4-inch square box.

Enclosed type is equipped with lens ring and may be used for indoor or outdoor applications.

Cord grip is furnished for  $\frac{3}{8}$ -inch O.D. cord. Cord is not furnished.



Wall Mounting



Clamp Mounting



Cross Arm Mounting

## 75-100 Watts

With  $7\frac{1}{16}$ -inch Lens

Mounting	No Lens		Wide Beam Plain Lens		Narrow Beam Plain Lens	
	No.	Each	No.	Each	No.	Each
Yoke Only.....	5910W	\$7.75	5910WP	\$11.75	5910NP	\$13.20
Cross Arm.....	5911W	9.00	5911WP	13.00	5911NP	14.45
Clamp 1"-2" Pipe..	5914W	8.60	5914WP	12.60	5914NP	14.05
Flat Base.....	5917W	8.10	5917WP	12.10	5917NP	13.55
Wall.....	5918W	10.15	5918WP	14.15	5918NP	15.60

## 150-200 Watts

With  $1\frac{1}{4}$ -inch Lens

Mounting	No Lens		Wide Beam Plain Lens		Narrow Beam Plain Lens	
	No.	Each	No.	Each	No.	Each
Yoke Only.....	5920W	\$10.45	5920WP	\$14.90	5920NP	\$16.10
Cross Arm.....	5921W	11.75	5921WP	16.20	5921NP	16.10
$1\frac{1}{2}$ " Slip Fitter....	5922W	12.30	5922WP	16.75	5922NP	17.95
2" Slip Fitter.....	5923W	12.50	5923WP	16.95	5923NP	18.15
Clamp 1"-2" Pipe..	5924W	11.30	5924WP	15.75	5924NP	16.95
Flat Base.....	5927W	10.80	5927WP	15.25	5927NP	16.45
Wall.....	5928W	12.85	5928WP	14.90	5928NP	18.50

## 300-500 Watts

With 14-Inch Lens

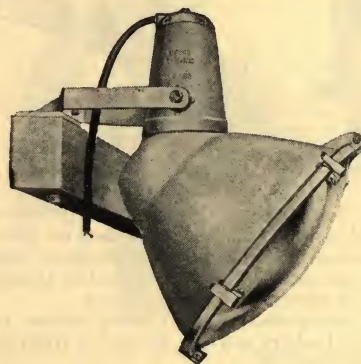
Mounting	No Lens		Wide Beam Plain Lens		Narrow Beam Plain Lens	
	No.	Each	No.	Each	No.	Each
Yoke Only.....	5950W	\$11.75	5950WP	\$16.60	5950NP	\$17.45
Cross Arm.....	5951W	13.00	5951WP	17.85	5951NP	18.75
$1\frac{1}{2}$ " Slip Fitter....	5952W	13.55	5952WP	18.45	5952NP	19.30
2" Slip Fitter.....	5953W	13.80	5953WP	18.65	5953NP	19.55
Clamp 1"-2" Pipe..	5954W	12.60	5954WP	17.45	5954NP	18.30
Flat Base.....	5957W	12.10	5957WP	16.95	5957NP	17.85
Wall.....	5958W	14.15	5958WP	19.00	5958NP	19.90

## Revere Enclosed Type Floodlights

Dust-Tight—Weatherproof

750-1000-1500 Watts

Wide Beam—Narrow Beam



Wide beam type has diffuse Alzak aluminum reflector; narrow beam type, specular (polished) Alzak reflector.

Furnished with rotation stop and adjustment device.

Reflector, lens, and housing can be removed for storage by disconnecting wires at the socket terminals.

Lens diameter, 18 inches.

Mounting	Wide Beam		Narrow Beam	
	*No.	Each	*No.	Each
Yoke Only.....	4200	\$43.00	4205	\$50.00
Cross Arm.....	4201	44.00	4206	51.00
$1\frac{1}{2}$ -Inch Slip Fitter.....	4202	46.00	4207	53.00
2-Inch Slip Fitter.....	4203	46.00	4208	53.00
Clamps 1 and 2-Inch Pipe...	4204	45.00	4209	52.00

\*Suffix the following letters to the numbers shown—for plain lens, P; for stippled lens, S; and for ribbed lens, R. Plain, stippled or ribbed lens furnished at no extra cost.

## Accessories

No.	Description	Each
3078	Visor for Redirection of Light.....	\$4.00
4686	Plain Lens, Glass Only.....	12.00
4687	Ribbed Lens, Glass Only.....	12.00
4688	Stippled Lens, Glass Only.....	12.00
4223	Adapter to Use 1000 or 1500-Watt Lamp....	2.00

For floodlights without rotation stop and vertical adjustment device, deduct \$2.00 from prices.

## Revere Heavy Duty Enclosed Floodlights

750-1000 Watts—Ventilated and Weatherproof

Narrow Beam Type—Medium Type



Made with heavy gage steel spun housing with cast iron front frame and lens ring door with thumb screw and eye bolt latches to secure door frame against an impregnated asbestos gasket in frame casting.

Focusing mechanism is externally operated, enabling rapid and positive setting of the beam spread. Compound parabolic design reflector.

Dimensions: lens diameter, 18 inches; height, 28 inches; width, 22 inches; depth  $13\frac{1}{2}$  inches.

No. 6505P

Mounting	Narrow Beam Type			Medium Beam Type		
	*No.	Each	Wt. Lb.	*No.	Each	Wt. Lb.
Yoke Only.....	6500	\$83.00	53	6510	\$83.00	53
Cross Arm.....	6501	84.00	54	6511	84.00	54
$1\frac{1}{2}$ " Slip Fitter.....	6502	86.00	56	6512	86.00	56
2" Slip Fitter.....	6503	86.50	65	6513	86.50	65
Clamps 1" to 2" Pipe..	6504	86.00	55	6514	86.00	55
Flat Base.....	6505	85.00	55	6515	85.00	55
Wall or Wood Pole...	6508	89.00	65	6518	89.00	65

\*Suffix the following letters to the numbers shown: for plain lens, P; for stippled lens, S; and for ribbed lens, R.

## Accessories

No.	Description	Each
4686	Plain Lens, Glass Only.....	\$12.00
4687	Ribbed Lens, Glass Only.....	12.00
4688	Stippled Lens, Glass Only.....	12.00
4223	Adapter to Use 1000 or 1500-Watt G Lamp.	2.00
6150-1	Plain Reflector Only, Narrow Beam.....	16.50
6150-44	Stippled Reflector Only, Medium Beam..	16.50



## Revere Incandescent Searchlights With Pilot House Control or Hand Control

250 to 5000 Watts

Designed for ordnance and industrial plants, airports, bridges, arsenals, marine use, and other protective lighting applications.

Wattage capacity: 12-inch, continuous service 600 watts, intermittent service 1000 watts; 18-inch, continuous service 1500 watts, intermittent service 2000 watts; 24-inch, continuous service 1500, 2000, or 3000 watts, intermittent service 5000 watts.

The 12 and 18-inch sizes are made of heavy gage spun steel and the 24-inch is made of cast aluminum.

Reflector is precision mirrored glass, ground and polished.

Has heat resisting plain clear glass lens.

Searchlight mounted in a steel yoke which permits vertical rotation.

**Pilot house control** type is made to swing a full 360° horizontally, with vertical adjustment to enable tilting the searchlight to 45° above or below horizontal. Permits searchlight to be mounted on roof of guard tower, or other building with control lever extending down through the roof.

**Hand Control** type is of the same construction as the Pilot House Control type, except for the mounting and control equipment.

**Finish:** 12-inch and 18-inch finished in standard dark green enamel; 24-inch finished standard aluminum except for Airport Service which is international orange and white or black and yellow striped.

### Lamp Data 12-Inch Searchlights

Watts	Bulb	Volts	Life Hours	Service	Base
250	G-30	115	800	Floodlight	Medium Screw
400	G-30	115	200	Spotlight	Medium Screw
420	G-25	12	100	Aero. Hdt.	Mogul Prefocus
500	G-40	115	800	Floodlight	Mogul Screw
500	T-20	115	800	Aviation	Mogul Prefocus
*†900	T-20	30	100	Projection	Mogul Prefocus
*†1000	T-20	115	50	Projection	Mogul Prefocus
*†1000	T-20	30	500	Aviation	Mogul Bipost

### 18-Inch Searchlights

420	G-25	12	100	Aero. Hdt.	Mogul Prefocus
*900	T-20	30	100	Projection	Mogul Prefocus
*1000	T-20	115	500	Aviation	Mogul Prefocus
*1000	T-20	30	500	Aviation	Mogul Bipost
*1000	T-20	115	50	Projection	Mogul Prefocus
1000	G-40	115	200	Spotlight	Mogul Screw
1500	G-48	115	800	Floodlight	Mogul Screw
*1500	T-24	32	100	Aviation	Mogul Bipost
†2000	G-48	115	200	Motion Pic.	Mogul Bipost

### 24-Inch Searchlights

1500	G-48	115	800	Floodlight	Mogul Screw
*1500	T-24	32	100	Aviation	Mogul Bipost
2000	G-48	115	200	Spotlight	Mogul Bipost
*2000	T-30	115	200	Spotlight	Mogul Bipost
*3000	T-32	32	100	Aviation	Mogul Bipost
†5000	G-64	115	75	Aviation	Mogul Bipost

### Prices

No.	Each	Mounting	Diam. In.	Wt. Lb.
7291	\$600.00	Pilot House Control	24	267
7292	500.00	2½-inch Slip Fitter	24	187
7293	500.00	Flat Base	24	187
†§4504	280.00	Pilot House Control	18	210
4507	200.00	Hand Control 1½" Slip Fitter	18	145
4508	200.00	Hand Control 2" Slip Fitter	18	145
4509	200.00	Hand Control Flat Base	18	145
†§4524	220.00	Pilot House Control	12	145
4527	140.00	Hand Control 1½" Slip Fitter	12	80
4528	140.00	Hand Control 2" Slip Fitter	12	80
4529	140.00	Hand Control Flat Base	12	80

\*Should not be tipped up or down more than 25°. †Should not be operated continuously. ‡When control stems are desired longer than 18 inches, add \$3.00 per foot to prices.

§For higher pedestal above roof, add \$4.00 per foot.

## Revere Champion Aluminum Floodlights Dust-Tight—Weatherproof 750-1000-1500 Watts



Made of Alzak aluminum.

Lens is mounted in a ring hinged to the reflector and is held in place by five C clamps.

The reflector is attached to the cast aluminum housing by means of a heavy die-formed steel ring drawn tight to the housing by four large screws.

Furnished with rotation stop and adjustment device.  
Furnished with 18-inch, heat resisting lens.

Mounting	Wide Beam		Narrow Beam	
	*No.	Each	*No.	Each
Yoke Only	2400-W	\$48.00	2400-N	\$55.00
Cross Arm	2401-W	49.00	2401-N	56.00
1½ inch Slip Fitter	2402-W	51.00	2402-N	58.00
2 inch Slip Fitter	2403-W	51.00	2403-N	58.00
Clamps 1-in. to 2-in. Pipe	2404-W	50.00	2404-N	57.00
Wall	2408-W	50.00	2408-N	57.00

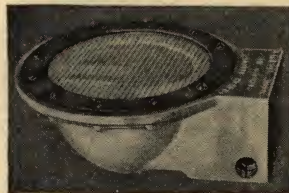
\*Suffix the following letters to the numbers shown—for plain lens, P; for stippled lens, S; and for ribbed lens, R. Plain, stippled, or ribbed lens furnished at no extra cost.

### Accessories

No.	Description	Each
3078	Visors for Redirection of Light	\$4.00
4686	Plain Lens, Glass Only	12.00
4687	Ribbed Lens, Glass Only	12.00
4688	Stippled Lens, Glass Only	12.00
4223	Adapter to Use 1000 or 1500-Watt Lamp	2.00

For floodlights without rotation stop and vertical adjusting device, deduct \$2.00 from prices.

## Revere Service-Lite Lighting Units For 100 or 200-Watt Lamps



No. 3002

Designed for efficient illumination of hoists, greasing pits, washracks, underpasses, tunnels, railroad train-pits, etc. The main body of the unit is a one-piece casting. The lens is of the refracting type ¾ inches thick, and is made of special heat-resisting glass, designed to cast light on an angle of 40°.

A clear glass lens is also available.

Furnished in hinged and non-hinged types. An Alzak aluminum reflector inside the housing is furnished.

A medium screw base receptacle is fixed in position for a 200-watt lamp. If a 150-watt lamp is to be used, a standard socket extension should be added.

### With Clamp Cover

Lens	200-Watt		100-Watt		Shipping Wt. Lb.
	No.	Each	No.	Each	
Refracting	3002	\$18.00	3003	\$18.00	11½
*Refracting	3004	19.00	3005	19.00	13
Plain	3006	18.00	3007	18.00	11½
*Plain	3008	19.00	3009	19.00	13

### With Hinged Cover

Refracting	3002H	\$27.40	3003H	\$27.40	13
*Refracting	3004H	31.50	3005H	31.50	14½
Plain	3006H	27.40	3007H	27.40	13
*Plain	3008H	31.50	3009H	31.50	14½

\*With guard.

### Accessories

No. 3000, Parts to Convert Clamp Cover to Hinged Cover	each	\$9.40
No. 3000G, Parts to Convert Clamp Cover to Hinged Cover with Guard	each	11.50
No. 3010, Set of 2 L Brackets	per set	2.00
No. 3011, Clamp Guard Only	each	4.00
No. 3012, Refracting Lens Only	each	5.40
No. 3013, Plain Lens Only	each	5.40



Revere Combination Island Lights and Floodlights

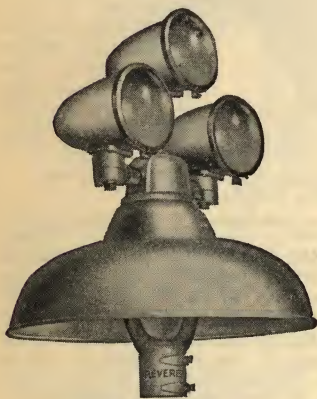
With Alzak or Porcelain Reflectors

200 to 1000 Watts

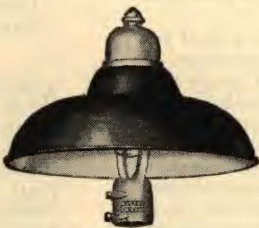
Used for service station lighting and other areas where efficient illumination is a necessity.

All castings are aluminum and other parts are cadmium plated steel.

Slips over a 2-inch pipe and is secured by two set screws. Bosses provided in the lower fitter align and maintain unit vertical.



No. 3650-S  
Combination Area Light  
and 3 Top Floodlights



Nos. 3018 and 3481  
20-Inch Reflector  
Diameter



Nos. 3032 and 3033  
16-Inch Reflector  
Diameter

Nos. 3017 and 3480—Alzak  
Nos. 3018 and 3481—Porcelain

Rain and weatherproof.

Wireway is located in both arms, therefore wiring is enclosed. Ornamental ball top which, when removed, exposes a 1/2-inch threaded nipple on which enclosed floodlights (Nos. 3160, 3166, 3180, and 3186) and various lighted signs can be mounted.

Alzak reflectors have natural aluminum finish.

Porcelain reflector has red, green, or blue outside standard finish.

No. 3032—Porcelain  
No. 3033—Alzak

Smaller lighting units used where a location justifies a 200-watt lamp instead of the customary 300 or 500-watt lamp.

Normally, two units should be used with the pole installed crossway of the island.

Reflector is made of Alzak aluminum or porcelain enameled steel.

Porcelain reflector is finished white inside, red or green outside.

No.	Each	Reflector	Reflector Diameter Inches	Lamp Watts	Shipping Weight Pounds
3017	\$14.50	Alzak	20	300-500	15
3018	12.50	Porcelain	20	300-500	18
3480	15.00	Alzak	20	750-1000	15
3481	12.50	Porcelain	20	750-1000	18

No.	Each	Reflector	Reflector Diameter Inches	Lamp Watts	Shipping Weight Pounds
3032	\$10.00	Porcelain	16	200	9
3033	11.00	Alzak	16	200	11

Combination Alzak Aluminum Units

No.	Description	Complete
3450-R	With Area Light No. 3017 and One Top Floodlight No. 3160.....	\$26.00
3550-R	With Area Light No. 3017 and Two Top Floodlights No. 3166.....	37.00
3650-R	With Area Light No. 3017 and One No. 3160 and Two No. 3166 Top Floodlights.....	48.00

Combination Porcelain Enameled Units

No.	Description	Complete
3450-S	With Area Light No. 3018 and One Top Floodlight No. 3180.....	\$26.00
3550-S	With Area Light No. 3018 and Two Top Floodlights No. 3186.....	37.00
3650-S	With Area Light No. 3018 and One No. 3180 and Two No. 3186 Top Floodlights.....	48.00

Individual Floodlights

Designed to accentuate illumination of any given area such as driveways, approaches, buildings, billboards, parking lots, tourist camps, etc. when mounted on top of an island or area light.

Use 150-watt par 38 Projector Spot or Projector Flood, or 150-300-watt.

Available in Alzak aluminum or porcelain enameled steel. Porcelain floods may be furnished in color matching area or island light on which it is to be mounted.

For Alzak Aluminum Units

No. 3160.....each	\$11.00
No. 3166.....each	11.00

For Porcelain Enameled Units

No. 3180.....each	\$11.00
No. 3186.....each	11.00



## Revere Enclosed Low Mounting Floodlights and Top Floodlights



No. 3454D

For use with No. 3018 island light.

Housing is made of porcelain enameled steel. The mounting device is made of aluminum.

Available with or without an Alzak inner reflector and for wide or narrow beam spread. Inner reflector is held in place by means of two screws.

Lens is held to reflector by means of a clamping ring.

For 150 to 200-watt lamps, a medium base socket is used. When using a 150-watt lamp, a standard socket extension should be inserted.

For 300 to 500-watt lamps, a mogul screw socket is used.

Vertical adjustment is obtained through the hollow swivel joint, which accommodates the wiring.

Reflectors furnished in red or green porcelain outside, white inside.

**No. 3018 Island Light.** A rain and weatherproof unit which accommodates 300 to 500-watt lamps. Castings are made of aluminum and other parts are cadmium plated steel. Reflector is porcelain enameled red or green outside, white inside. Slips over a 2-inch pipe and is secured by two set screws. Has ornamental ball top which, when removed, exposes a 1/2-inch threaded nipple on which enclosed floodlights are mounted.

### Series 4100—300-500 Watts

#### Wide Beam—With Alzak Aluminum Reflector

Lens	With 1 Top Flood		With 2 Top Floods	
	No.	Each	No.	Each
Plain.....	3454D	\$36.50	3554D	\$62.50
Stippled.....	3464D	36.50	3564D	62.50
Ribbed.....	3474D	36.50	3574D	62.50

#### Narrow Beam—With Alzak Aluminum Reflector

Plain.....	3454DSP	\$41.50	3554DSP	\$72.50
Stippled.....	3464DSP	41.50	3564DSP	72.50
Ribbed.....	3474DSP	41.50	3574DSP	72.50

### Series 4130—150-200 Watts

#### Wide Beam—With Alzak Aluminum Reflector

Plain.....	3453F	\$28.00	3553F	\$45.50
Stippled.....	3463F	28.00	3563F	45.50
Ribbed.....	3473F	28.00	3573F	45.50

#### Narrow Beam—With Alzak Aluminum Reflector

Plain.....	3453G	\$31.00	3553G	\$51.50
Stippled.....	3463G	31.00	3563G	51.50
Ribbed.....	3473G	31.00	3573G	51.50

### Series 4120—300-500 Watts

#### Wide Beam Only—Without Inner Reflector

Plain.....	3454E	\$32.50	3554E	\$54.50
Stippled.....	3464E	32.50	3564E	54.50
Ribbed.....	3474E	32.50	3574E	54.50

### Series 4150—150-200 Watts

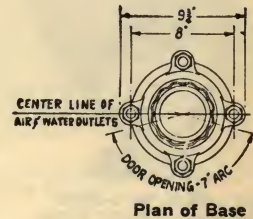
#### Wide Beam Only—Without Inner Reflector

Plain.....	3454K	\$27.00	3554K	\$42.50
Stippled.....	3464K	27.00	3564K	42.50
Ribbed.....	3474K	27.00	3574K	42.50

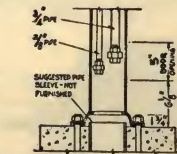
## Revere Service and Island Light Standards



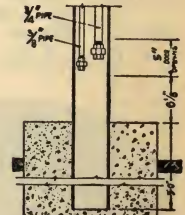
No. 204



Plan of Base



Cross-Section of Base



Cross-Section of Concrete Mounting

For use on pump islands and other areas in combination with island lights.

Light center of island light is approximately 12 feet above the grade line.

Available with or without air and water dispensing facilities.

Lower section is a 5-inch corrugated steel tube, with an ornamental steel reducer casting welded in place for screwing on the upper shaft which is made of 2-inch steel pipe.

Water and air pipes are furnished with elbows, nipples, and ground joint unions.

Piping is welded in place in the standard, ready to connect to the service piping through a large door near the grade line. Hose and hose fittings are not furnished.

Switch and receptacle are not furnished and must be ordered separately. When ordered with standard, drilling and tapping are furnished without extra charge.

Lights and foundation bolts must be ordered separately.

Service	Base and Bolt Mounting			Concrete Mounting		
	No.	Each	Wt. Lb.	No.	Each	Wt. Lb.
Light, Water and Air.....	204	\$31.57	68	204O	\$31.46	83
Light and Water..	204A	26.02	64	204P	25.76	85
Light and Air.....	204B	25.77	65	204Q	26.03	84
Light and Double Air.....	204BB	31.22	70	204QQ	31.13	89
Light Only.....	204C	20.09	60	204R	20.20	79

#### Accessories

No. 204D, One Set (4) 5/8x12-inch Foundation Bolts and Nuts.....per set \$1.76



## G-E Heavy Duty Floodlights

## Type L-38



Type L-38-D, for General Service Lamp, 200-250 Watts

Plain door glass is furnished, unless otherwise specified. The following types are available at no additional charge: lightly stippled, heavily stippled, and spreadlight—used to widen beam light. Colored glass can be obtained, if desired.

## Type L-38-D, for General Service Lamp (PS-30)

No.	Each	Type of Reflector	APPROX. Wt., Lb.	Net
A48G42	\$38.00	Silvered Glass	22	16
A48G62	38.00	*Alzak Finished Aluminum	22	16
Type L-38-E, for Floodlighting Service Lamp (G-30)				
A48G52	\$38.00	Silvered Glass	22	16
A48G72	38.00	*Alzak Finished Aluminum	22	16

## Type L-34



Types L-34-E and H for General Service Lamp, 1000-1500 Watts

Plain clear door glass furnished, unless otherwise specified. Lightly stippled or spreadlight door glass can be furnished at no additional charge.

Furnished only with crowfoot base as shown.

In Type L-34-E, the lamp is supported at 90 degrees to the reflector axis. In Type L-34-H, the lamp is supported at 60 degrees to the reflector axis, to obtain more favorable lamp performance when operated at over voltage and when the projector is tilted downward.

## For General Service Lamp (PS-52)

Type	No.	Type of Reflector	Each	APPROX. Wt., Lb.	Net
L-34-E	A64G1	Silvered Glass	\$140.00	170	72
L-34-E	A64G3	Pol.*Alzak Fin.Aluminum	140.00	168	68
For Sports Lighting Purposes					
L-34-H	A64G4	Pol.*Alzak Fin.Aluminum	\$140.00	168	68

## For Floodlight Service Lamp (G-48)

Type	No.	Type of Reflector	Each	APPROX. Wt., Lb.	Net
L-34-F	A64G11	Silvered Glass	\$140.00	170	72
L-34-J	A64G13	Pol.*Alzak Fin.Aluminum	140.00	168	68

\*Manufactured under Aluminum Company of America patents.

A heavy duty floodlight with cast aluminum casing and door. High efficiency, long life reflector, either silvered glass or Alzak processed aluminum. Heat and weather-resisting molded glass sealed with waterproof asbestos gaskets.

Suitable for rough service applications—such as on power shovels. A variety of beam spreads and mountings adapt it to all common situations.

Lamp is not included.

Plain door glass is furnished, unless otherwise specified. The following types are available at no additional charge: lightly stippled, heavily stippled, and spreadlight—used to widen beam light. Colored glass can be obtained, if desired.

A heavy duty cast aluminum floodlight, for use with either general service lamp or floodlight service lamp, specially designed and built for railroad yard lighting. Its strong durable construction assures long life—withstanding vibration and corrosive action of smoke filled air.

Also recommended for long range floodlighting of large stadiums.

Lamp not included.

\*Alzak finished aluminum reflectors only are furnished for sports lighting use.

## Type L-30



Type L-30-K or L Standard Floodlight, 300-500 Watts

er-resisting molded glass held in place with large spring toggle latches to insure tight seal. Attractive gray enameled finish.

Lamp is not included.

Plain door glass is furnished, unless otherwise specified. The following types are available at no additional charge: lightly stippled, heavily stippled, and spreadlight—used to widen light beam. Colored glass can be obtained, if desired.

## Type L-30-K, for General Service Lamp (PS-40)

No.	Each	Type of Reflector	APPROX. Wt., Lb.	Net
A60G22	\$68.00	Silvered Glass	53	30
A60G82	68.00	*Alzak Finished Aluminum	48	25
Type L-30-L, for Floodlighting Service Lamp (G-40)				
A60G32	\$68.00	Silvered Glass	53	30
A60G92	68.00	*Alzak Finished Aluminum	48	25

## Type L-31



Type L-31-K, for General Service Lamp, 750-1000 Watts

tained with different door glasses.

Lamp is not included.

Plain door glass is furnished, unless otherwise specified. The following types are available at no additional charge: lightly stippled, heavily stippled, and spreadlight—used to widen light beam. Colored glass can be obtained, if desired.

## Type L-31-K, for General Service Lamp (PS-52)

No.	Each	Type of Reflector	APPROX. Wt., Lb.	Net
A61G42	\$85.00	Silvered Glass	56	33
A61G62	85.00	*Alzak Finished Aluminum	51	28
Type L-31-L, for Floodlighting Service Lamp (G-40)				
A61G12	\$85.00	Silvered Glass	53	30
A61G72	85.00	*Alzak Finished Aluminum	48	25

For general floodlighting applications, for which maintained high efficiency and long life under exposure to weather justify using the finest quality obtainable. Exceptionally sturdy construction and a variety of beam spreads and mountings adapt it to all common situations.

Contains high efficiency, long life reflector made of silvered glass or \*Alzak processed aluminum. Strong die-formed steel casing with heat and weather-

For general floodlighting applications, for which maintained high efficiency and long life under exposure to weather justify using the finest quality obtainable. Exceptionally sturdy construction and a variety of beam spreads and mountings adapt it to all common situations.

This high quality all-purpose projector features an efficient silvered glass or aluminum narrow beam reflector in a sturdy, attractive steel casing. Several different beam spreads may be ob-



## G-E Area Floodlights

Type L-69



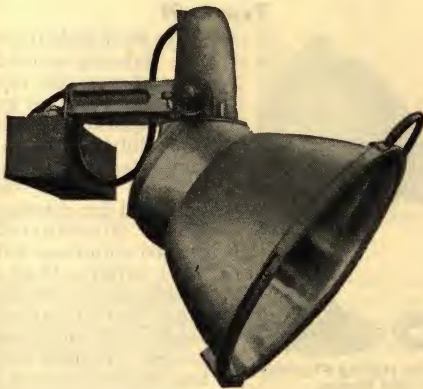
Type L-69 Floodlight for Crossarm Mounting, 1500 Watts

An outstanding floodlight for sports field and recreation areas incorporating every worthwhile feature, from the results of long engineering experience. The floodlight features a front glass made of impact-resisting Tufflex tempered plate glass, spun sealed into the reflector. The socket housing is removable for replacing lamp and cleaning reflector. Die-cast aluminum construction makes the housing lighter and easier to handle than any front door assembly. The reflector is made of \*Alzak processed aluminum, either polished or etched, giving this floodlight ideal light control and outstanding beam efficiency. The floodlight is completely sealed to keep out water, dirt, and insects.

Lamp not included; use 1500-watt general service lamp. PS-52 clear bulb, 9½-inch light center length.

No.	Each	Type of Reflector	APPROX. Wt., Lb. Ship. Net	
A54G7	\$60.00	Medium Beam, Polished.....	30	18½
A54G17	53.00	Medium Beam, Etched.....	30	18½
A54G8	60.00	Narrow Beam, Polished.....	30	18½

Type L-68



Type L-68 Floodlight for Crossarm Mounting, 750-1500 Watts

A popular floodlight for ground areas, notably sports fields and construction projects, where high candlepower beams will help reach across the area, or where the maintenance savings of an enclosed unit are desired. Features a heat and weather-resisting molded plain glass mounted in a slide-on door with a large handle and safety chain, for easy servicing. Reflector is made of \*Alzak processed aluminum, either polished or etched, to widen the light beam. Die-cast aluminum socket housing with heavy duty porcelain shell mogul socket keeps lamp in fixed focus. A medium stippled door glass is available.

Lamp not included. Uses general service lamp. Plain door glass is furnished, unless otherwise specified. A medium stippled type is available at no additional charge. It is used with either polished or etched reflector, to widen the light beam.

Type L-68, Enclosed, for Crossarm Mounting

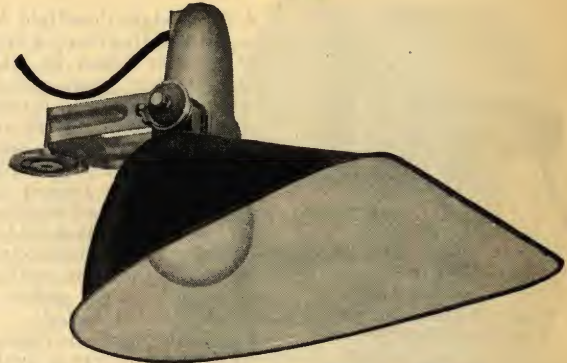
No.	Each	Type of Reflector	APPROX. Wt., Lb. Ship. Net	
A52G33	\$51.00	Pol. *Alzak Finished Aluminum..	26	14
A52G23	44.00	Etched *Alzak Finished Aluminum	26	14

For omission of door glass and ring, deduct \$15.

\*Manufactured under Aluminum Company of America patents.

†For use with 300 or 500-watt lamp, order similar to above number, and deduct \$1.00.

Type L-46



Type L-46 Floodlight for Crossarm Mounting, for 300-1500 Watts

A durable open floodlight for close range illumination of filling stations, and work, storage, parking, and sports areas. This floodlight has a porcelain enameled reflector. It may be equipped with an auxiliary reflector, to provide increased illumination of areas or buildings that require special emphasis. Die-cast aluminum socket housing with heavy duty, porcelain shell, mogul socket. Used general service lamp. Lamp not included.

†Type L-46, Crossarm Mounting; 750-1500 Watts

No.	Each	Type of Auxiliary Reflector Included	APPROX. Wt., Lb. Ship. Net	
A43G13	\$28.00	None.....	30	21
A43G23	31.00	Etched *Alzak Fin. Aluminum	30	21
A43G33	34.00	Pol. *Alzak Fin. Aluminum..	30	21

Type L-46, Slip Fitter Mounting on 2-Inch Pipe; 750-1500 Watts

A43G15	\$30.00	None.....	32	23
A43G25	33.00	Etched *Alzak Fin. Aluminum	32	23
A43G35	36.00	Pol. *Alzak Fin. Aluminum..	32	23

Type L-45



Type L-45 Floodlight for Crossarm Mounting, 300-1500 Watts

Lamp not included.

An inexpensive, durable, open floodlight with porcelain enameled reflector, for close range illumination of filling stations, and work, storage, parking, and sports areas. Auxiliary \*Alzak processed aluminum reflectors provide increased illumination of areas or buildings that require special emphasis. Construction similar to Type L-46 floodlight.

†Type L-45, Crossarm Mounting; 750-1500 Watts

No.	Each	Type of Auxiliary Reflector Included	APPROX. Wt., Lb. Ship. Net	
A41G13	\$17.00	None.....	26	17
A41G23	20.00	Etched *Alzak Fin. Aluminum	26	17
A41G33	23.00	Pol. *Alzak Fin. Aluminum..	26	17

Type L-45, Slip Fitter Mounting on 2-Inch Pipe; 750-1500 Watts

A41G14	\$19.00	None.....	28	19
A41G25	22.00	Etched *Alzak Fin. Aluminum	28	19
A41G35	25.00	Pol. *Alzak Fin. Aluminum..	28	19



## G-E General Purpose Floodlights

## Type L-49



Type L-49 Floodlight with Oval Base, 300-500 Watts

A lightweight floodlight for general application, which with narrow beam or wide beam reflectors, plus a variety of mountings, meets all common requirements. Reflector is made of \*Alzak processed aluminum; either polished for narrow beam or etched for wide beam. Heat and weather-resisting molded glass held in place with an aluminum ring. Die-cast aluminum socket housing with mogul socket. Lamp is not included. Plain door glass is furnished, unless otherwise specified. A heavily stippled type is available at no additional charge. Colored glass can be obtained, if desired.

Type L-49, Enclosed, with Oval Base for Surface Mounting

No.	Each	Type of Reflect	APPROX.	
			Wt., Lb.	Net
A44G62	\$31.00	Pol. *Alzak Fin. Aluminum...	24	13½
A44G52	26.00	Etched *Alzak Fin. Aluminum.	24	13½

Type L-49, Enclosed, for Crossarm Mounting

A44G63	\$30.00	Pol. *Alzak Fin. Aluminum...	22	11
A44G53	25.00	Etched *Alzak Fin. Aluminum.	22	11

For omission of door glass and ring, deduct \$6.00.

## Type L-43



Type L-43 Floodlight with Oval Base, 750-1000 Watts

A lightweight floodlight for general application. Similar to the Type L-49 floodlight, except larger in size and uses larger lamp.

Lamp is not included.

Plain door glass is furnished, unless otherwise specified. The following types are available at no additional charge: lightly stippled, heavily stippled, and spread-light—used with polished reflector to widen light beam. Colored glass can be obtained, if desired.

Type L-43, Enclosed, with Oval Base for Surface Mounting

No.	Each	Type of Reflector	APPROX.	
			Wt., Lb.	Net
A40G82	\$40.00	Pol. *Alzak Fin. Aluminum...	28	15
A40G72	34.00	Etched *Alzak Fin. Aluminum.	28	15

Type L-43, Enclosed, for Crossarm Mounting

A40G83	\$39.00	Pol. *Alzak Fin. Aluminum...	26	12½
A40G73	33.00	Etched *Alzak Fin. Aluminum.	26	12½

For omission of door glass and ring, deduct \$11.

## G-E Handy Floodlights

## Type L-65



Type L-65 Handy Floodlight, 100 Watts

A handy floodlight with wide angle beam, for lighting around homes, gardens, garages, farm buildings, etc., offering convenience, protection and aid to work or business at night. Low cost, durable and compact, and has a large variety of uses. Reflector is constructed of one-piece die-formed aluminum etched on the inside. Weather-resisting molded door plain glass held in place by U-shaped band. A 150-watt lamp may be used for short burning periods.

Lamp not included.

Packed 6 in a standard package; approximate weight, shipping, 22 pounds; net, 10½ pounds.

Type L-65, (No. A168G1).....each \$3.95

## Type L-66



Type L-66 Handy Floodlight, 200 Watts

For work lighting or protective lighting around substations, home and farm buildings, construction jobs—either temporary or permanent. Powerful wide angle beam illuminates a large area. Inexpensive, durable, thoroughly practical for general use. Reflector constructed of die-formed aluminum with etched inner surface. Heat and weather-resisting molded clear glass held in place by U-shaped clamping band with gasket. A 300-watt medium base general service lamp can be used in intermittent service.

Lamp not included.

Approximate weight, shipping, 7 pounds; net, 4 pounds.

Type L-66, (A175G4).....each \$12.50

No. 4815510G1, Renewal Door Glass, Plain Clear, 9½-Inch Diameter.....each \$2.70

For omission of door glass and ring, deduct \$4.00.

Red, amber, blue, or green door glass furnished in place of clear at \$4.00 additional.



## G-E Form 92 Luminaire for Gasoline Pump Islands

300-500 Watts

An attractive enclosed type luminaire for lighting gasoline pump islands and surrounding areas. Fits 2-inch pipe. Easily installed, offering even distribution of light without objectionable glare. Reflector constructed of \*Alzak processed aluminum which snugly fits over strong crystal clear rippled glass globe, giving an attractive appearance. Sturdy galvanized cast iron base, heavy duty porcelain mogul base socket.

Lamp not included. Use 300 or 500-watt mogul screw base lamp.

Approximate weight, shipping, 20 pounds; net, 14 pounds.

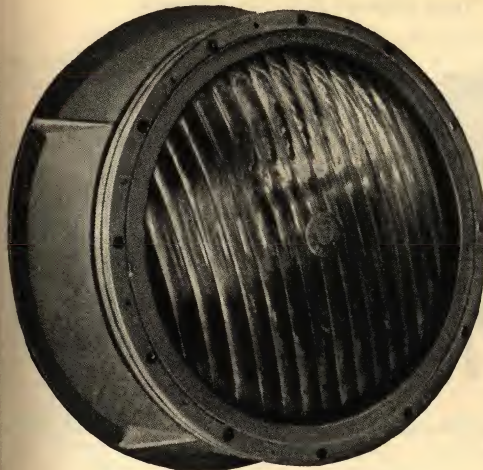
Form 92, (No. A100G1).....each \$14.00

\*Manufactured under Aluminum Company of America patents.



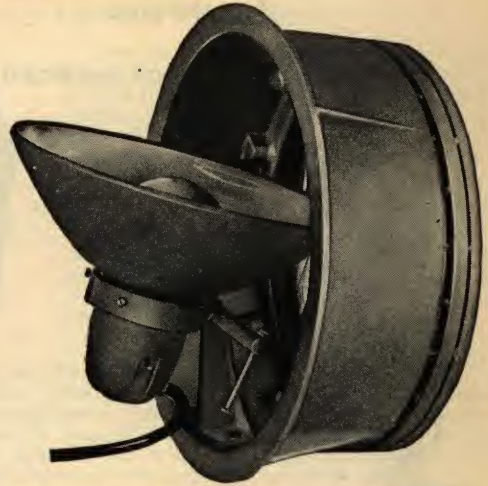
## G-E Underwater Floodlights

## Type L-39

Type L-39 Underwater Floodlight,  
500-1000 Watts

This high quality dry-niche underwater floodlight is used principally in swimming pools. It offers high efficiency, a variety of beam angles, easy maintenance, and long life. Cast bronze construction is especially recommended for best results and should be used to prevent deterioration in chemically treated water. Strong, durable, and easy to install.

Highly efficient silvered glass or polished \*Alzak processed aluminum reflector, correctly positioned for best results.

Type L-39, Rear View, Showing Reflector in  
Position for Servicing

*Type L-39, Complete Floodlight—Bronze						*Type L-39, Complete Floodlight—Aluminum								
Door Ring with Natural Bronze Finish			Door Ring with Chrome-Plated Finish			Door Ring with Natural Aluminum Finish			Door Ring with Natural Aluminum Finish					
No.	Each	Type of Reflector	APPROX. Wt., Lb. Ship.	Net	No.	Each	Type of Reflector	APPROX. Wt., Lb. Ship.	Net	No.	Each	Type of Reflector	APPROX. Wt., Lb. Ship.	Net
A47G4	\$95.00	Silvered Glass.....	140	77	A47G5	\$100.00	Silvered Glass.....	140	77	A47G6	\$75.00	Silvered Glass.....	90	45
A47G7	90.00	Pol. *Alzak Fin. Aluminum...	140	77	A47G8	95.00	Pol. *Alzak Fin. Aluminum...	140	77	A47G9	70.00	Pol. *Alzak Fin. Aluminum...	75	42



## Crouse-Hinds Incandescent Searchlights

Types DCE, DCY, DCX and DCXR



Type DCX



Type DCE



Type DCY

Designed to project a concentrated high intensity beam of light for long range illumination. Particularly recommended for shipboard use, industrial plants, airport control towers, public utilities, ordnance plants, and prisons.

A complete line, ranging from the 8-inch, 250-watt searchlight, to the 36-inch, 5000-watt searchlight. Available with a number of different mounting bases for different applications.

**Type DCE** is used as a fixed searchlight for spotting objects or small areas from a distance. This type can be used as a hand-controlled searchlight, but where unit is to be frequently redirected, type DCY is recommended.

**Type DCY** is arranged for direct hand control. Pedestal provides height of 48 inches to light center. Pedestals of special heights can be furnished.

**Type DCX** is furnished with a pilot house lever control for mounting on the roof of a pilot house or watch tower, to be controlled from below. Automatic brake holds searchlight in position desired in both rotation and elevation when brake lever is released. Brake release lock allows free control when desired.

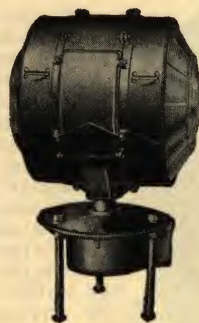
**Type DCXR** is similar to type DCX, except that it is arranged for remote control by means of wire ropes and pulleys.

Type	Each	Description	Diam. of Reflector Inches	MAXIMUM WATTAGE Continuous	Intermittent
DCE-8	.....	Standard Flange	8	250	250
DCX-8	.....	Lever Control			
DCE-12	.....	Standard Flange	12½	600	1000
DCY-12	.....	Pedestal Base			
DCX-12	.....	Lever Control			
DCXR-12	.....	Remote Control			
DCE-18	.....	Standard Flange	19¼	1500	2000
DCY-18	.....	Pedestal Base			
DCX-18	.....	Lever Control			
DCXR-18	.....	Remote Control			
DCE-24	.....	Standard Flange	25¼	2000	3000
DCY-24	.....	Pedestal Base			
DCX-24	.....	Lever Control			
DCXR-24	.....	Remote Control			
DCE-36	.....	Standard Flange	37¼	3000	5000
DCY-36	.....	Pedestal Base			
DCX-36	.....	Lever Control			
DCXR-36	.....	Remote Control			

## Crouse-Hinds Aviation Lighting

Type DCB-36 Rotating Beacons

36-Inch Diameter



A rotating beacon of high efficiency which projects beams of light in two directions, 180° apart.

The optical system consists of a lens combination in each end of the housing, with a single lamp in the center.

Each combination consists of an 18-inch inner doublet lens and a 36-inch outer lens. The outer lens is made of a one-piece bulls-eye lens, 20 inches in diameter, surrounded by twelve 30° sectors of an annular ring.

When color is required in either or both ends of the beacon, the inner doublet lens is furnished in red or green.

Equipped with one end clear and one end green, 115 volts, 60 cycles A.C.

No. 41281.....each .....

Type DCB-10 Rotating Beacons

Designed to meet requirements of small airports with no regular scheduled air transport activities. Provides alternate clear and green flashes from an optical system rotating at 6 rpm, indicating the location of a lighted airport with same beam characteristics as standard Type DCB-36 airport beacon.

Constructed with a large Pyrex glass dome which completely encloses rotating optical system.

A magnetic lamp changer provides a spare lamp which is automatically moved to the correct focal position and switched on when the first operating lamp fails. An indicating circuit is included which may be wired to an indicating lamp on the beacon tower, in the control room, or any remote point to show failure of the operating lamp. For 115 volts, 60 cycles, A.C.

No. 44035.....each .....



Type DCE-24 Airport Floodlights

1500 or 3000 Watts



Designed for the illumination of large landing fields. Can be used in banks of from three to fourteen units with the beams overlapped for the illumination of level fields, or in groups of two at each end of each runway for runway floodlighting.

Main reflector is 25-inch diameter, parabolic, silvered glass.

Description	1500 Watts		3000 Watts	
	No.	Each	No.	Each
With Plain Clear Lens...	43170B	.....	43171B	.....
With 10° Spread Lens...	42938B	.....	42482B	.....
With 30° Spread Lens...	42939B	.....	40775B	.....
With 80° Spread Lens...	42940B	.....	40783B	.....

Catalog numbers do not include incandescent lamps. Prices and information upon request.



## Crouse-Hinds Aviation Lighting

## Type FCB-12 Fresnel Beacons

For Airport Identification and Hazard Marking  
200 or 500 Watts



Designed for use as an auxiliary green code flashing beacon at airports, and as a red marker light for major obstructions to air navigation.

When used at airports, it is usually equipped with green color screens, two 500-watt lamps, and connected to a special code flasher to produce a Morse code signal, designating the airport. Code signal consists of from one to three letters, and must be approved by the Civil Aeronautics Administration. Should be mounted high enough to allow its beam to clear surrounding obstacles.

Housing is cast aluminum alloy.

Lamps: 500-watt, 115-volt, PS-40 bulb or 200-watt, 115-volt, PS-30 bulb, mogul prefocus base.

Description	200 Watts		500 Watts	
	No.	Each	No.	Each
With Red Hazard Beacon...	42197C	.....	41257C	.....
With Green Code Beacon...	42198C	.....	41258C	.....

## Type TSS Flashing Switches

110 Volts, 60 Cycles, A.C.

Used to flash on-off signals as required for Type FCB-12 red hazard beacons, and to flash code signals as required for Type FCB-12 green airport identification beacons.

All Type TSS standard flashers are arranged to flash on-off 40 times per minute in accordance with CAA requirements for hazard beacons. Type TSS-18 (No. 46397) code flasher is furnished with the cam made to order to flash the code assigned to the airport by the CAA. The code flasher will flash most two-letter codes and some three-letter codes.

No. of Circuits	Type of Flasher	No.	Each
1	TSS-21 Standard	46777A	.....
2 Simultaneous	TSS-21 Standard	46778A	.....
2 Alternate	TSS-21 Standard	46779A	.....
3	TSS-18 Standard	46440	.....
4	TSS-18 Standard	46441	.....
5	TSS-18 Standard	46442	.....
1	TSS-18 Code	46397	.....

Contacts of Type TSS-21 are mercury tube, rated 35 amp. Contacts of Type TSS-18 are metal, rated 10 amperes.

## Type APB Boundary and Threshold Lights

Disconnecting Type



Fixture consists of prismatic globe, cast aluminum fitting, 30° diameter metal cone and disconnecting cutout. Function of cutout is to disconnect fixture immediately from the high voltage underground cutout when struck by a plane.

Available for 6.6-ampere series circuits and for 115-volt multiple circuits.

Description	Series		Multiple	
	No.	Each	No.	Each
Boundary Light, Clear Globe.....	43625	.....	44332	.....
Boundary Light, Yellow Globe...	43627	.....	44333	.....
Threshold Light, Green Globe....	43720	.....	44334	.....
Boundary Obstruction Light, Red Globe.....	43629	.....	44335	.....

## Type ERL Marker Lights



For use on both large and small airports as runway lights (clear globe), threshold lights (green globe), and taxi lights (blue globe). Globes are available in both asymmetric style as used on runway and threshold lights and symmetric style as used for taxi lights at some locations.

Complete ERL fixture includes globe, fitting with lamp receptacle, cone, column with breakable coupling, wiring in column, disconnecting plug and receptacle, and mounting base.

Mounting bases are available in three different styles designated as A, B, and C. Style A mounting consists of surface flange, 30-inch angle iron anchor, and isolating transformer; Style B mounting includes base plate and gasket to fit type CPD base housings; Style C mounting consists of junction box with hub cover on top and two squeeze connectors for through-feed cables at bottom.

New runway marker light installations use Style Amounting in most cases, with a series circuit and an individual isolating transformer for each light. Style C mounting with 115-volt multiple circuit is also used. Style B mounting is used particularly where it is desired to provide for a change-over to semi-flush CPD top assemblies. At some airports cone type markers such as Type ERL are used during snow weather, these being replaced on the base housings by Type CPD top assemblies during the summer. Type ERL with Style B mounting is used for converting existing semi-flush CPD fixtures to elevated lights.

Mounting Circuit	Runway Lights Clear Asymmetric		Threshold Lights Green Asymmetric		Taxi Lights Blue Asymmetric		Taxi Lights Blue Symmetric	
	No.	Each	No.	Each	No.	Each	No.	Each
A Series	44376	.....	44377	.....	44378	.....	44386	.....
B Series, or Multiple	44379	.....	44380	.....	44381	.....	44387	.....
C Multiple	44370	.....	44371	.....	44372	.....	44384	.....

## Type HIRL Marker Lights

200 Watts



Type HIRL, 200-watt high intensity runway marker light is recommended for instrument landing runways.

Outlines a runway to a pilot under poor visibility conditions as encountered in fog, rain or snow, either day or night.

High lighting efficiency is obtained through the use of a double reflector system with a single light source.

Consist essentially of the reflector optical system, column with breakable coupling, wiring with disconnecting plug and receptacle, and base housing. An isolating transformer is required to be installed in the base.

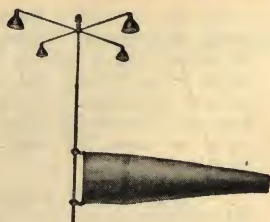
Description	No.	Each
Clear Runway Marker Light.....	44382	.....
Green Threshold Marker Light.....	44383	.....

Catalog Nos. do not include incandescent lamps. Prices and information upon request.



## Crouse-Hinds Aviation Lighting

## Type WC Illuminated Wind Cone Fixtures



**Type WC-36 wind cone** is new heavy duty fixture equipped with a 36-inch diameter 12-foot fabric wind sock.

**Type EC-18 wind cone** is designed particularly for use at small airports. Also recommended as an auxiliary wind cone at larger airports.

Both Type WC-36 and WC-18 fixtures include ball bearings for the wind cone swivel support and four lighting reflectors, which are 200 watts for Type WC-36 and 150 watts for Type WC-18.

Description	No.	Each
Type WC-36 for Beacon Tower Mounting...	44622	....
Type WC-36 for Roof or Ground Mounting..	44621	....
2½-Inch Slip Fitter for Mounting WC-36....	FL623	....
Hinged Standard for WC-36.....	FL624	....
Type WC-18 with 2-Inch Slip Fitter Base...	44036	....

## Type WT Illuminated Wind Tees



Serves as a continuous day and night indication of the true wind direction, gives the appearance of a single green "T" when viewed from above at night and a single stroke chrome yellow "T" when viewed from above in the daytime.

Furnished as a standard wind tee responsive to and affected by the wind only, or can be furnished with any of several different combinations of accessories to make it completely automatic or controlled by a remote operator. No. 43339C.....each .....

## Type DCE-16 Ceiling Projectors



Consists of a powerful searchlight, the beam of which is directed upward to the clouds. The height of the clouds is then determined by an indicator known as a clinometer. Projector is usually located 1000 feet from the normal observation point.

No. 43900, with Transformer and Slip-Fitter...each .....

## Type CL Clinometers

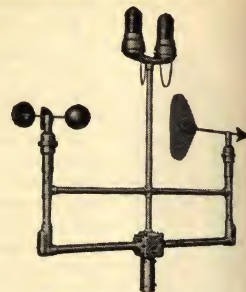


Furnished complete with wood box, instructions, and a set of tables with altitudes for base line of 100 feet.

No. 44173.....each .....

Catalog Nos. do not include incandescent lamps. Prices and information upon request.

## Wind Instruments



Wind Transmitter Assembly

These instruments provide instant information on outside wind conditions to the operator in the control tower, hangar or office.

**Wind direction transmitter** consists of a balanced metal arrow and a self-synchronous motor assembly totally enclosed in a weatherproof housing. Mounts on standard 1¼-inch pipe support.

**Wind velocity transmitter** is a wind-powered type, consisting of a 3-cup rotor which drives a high grade direct current generator, totally enclosed in a weatherproof housing. No outside power source is needed. Mounts on standard 1¼-inch pipe support.

**Wind indicator** is 3½-inch outside diameter with 2¾-inch luminous aircraft dial.

**Wind transmitter assembly** consists of the two transmitters, duplex pipe support, and double obstruction light. Transmitter support has slip-fitter for 2½-inch pipe.

Description	No.	Each
Wind Direction Transmitter.....	FL101	....
Wind Velocity Transmitter.....	FL102	....
Wind Direction Indicator with 2¾-Inch Dial.....	FL103	....
Wind Velocity Indicator with 2¾-Inch Dial	FL104	....
Support for Wind Transmitters.....	KL3093	....
VAW Double Obstruction Light, Red Globes.....	43961	....

## Type PTS Air Traffic Control Signals

Designed for projecting a high intensity beam of light for clear, green or red signals to planes in the air and on the ground.

By means of concentrating type parabolic searchlight reflector, a powerful beam is produced which has been used to signal at distances of over eight miles in the daytime and twelve miles at night.

Pistol grip handle at the rear contains a trigger switch with which the light signals can be flashed as desired. Signals in Morse Code can be flashed. Front handle is rotated to change the color of the base.

The B-2 assembly is the type generally provided for airport control tower use. The B-3 assembly includes a carrying case and spare parts.

Description	No.	Each
B-2 Assembly, with Transformer and Auxiliary Battery Cord.....	44280A	....
B-3 Assembly, with Carrying Case, Connector Cords and Spare Parts.....	44279	....





## Crouse-Hinds Aviation Lighting

## Type VAW Marker Lights

Double Disconnecting  
Fixture With Thompson  
Hanger

Single Fixture



Double Fixture



Transfer Relay

Used as boundary lights (clear globe), threshold lights (green globe), and obstruction lights (red globe). Fixtures with yellow or blue globes can also be furnished.

Made of cast aluminum with 1-inch bottom hub. Available in two styles: multiple units for use on standard 115-volt circuits and series units for use on 6.6-ampere series circuits.

Transfer relay is designed to complete the circuit to the spare lamp upon failure of the operating lamp. Relay listed will operate with 60 or 100-watt lamps; relays for other lamps can be furnished. Relay is mounted in weatherproof housing.

Double disconnecting fixtures are used to mark obstructions to air navigation such as poles, towers, smoke stacks and water tanks where it is desirable to lower the fixtures for cleaning and relamping.

Multiple Circuits		No.	Each
Description			
Single Fixture with Clear Globe.....	43956	.....	
Single Fixture with Green Globe.....	43957	.....	
Single Fixture with Red Globe.....	43958	.....	
Double Fixture with Red Globes.....	43961	.....	
Transfer Relay, for Use with Double Multiple Obstruction Light with 60 or 100-Watt Lamps.....	43902	.....	
Disconnecting Double Multiple Fixture with Red Globes, for Use with Thompson Han- gar.....	43658	.....	
Series Circuits			
Description			
Single Fixture with Clear Globe.....	43923	.....	
Single Fixture with Green Globe.....	43927	.....	
Single Fixture with Red Globe.....	43623	.....	
Double Fixture with Red Globes.....	43624	.....	

## Type CPD Flush Marker Lights

Type CPD  
With Shallow BaseType CPD  
With Deep Base

Used as runway contact lights, flush threshold lights, flush boundary lights, taxi guidance lights, and flush traffic control lights.

Designed to withstand a minimum dead load of 100,000 pounds applied on the top. Type CPD bases with blank iron cover are used as underground transformer housings.

Type I units are equipped with asymmetric style prismatic lens. Most of the light from an asymmetric unit is concentrated into two narrow beams approximately 180° apart and 4° above the horizontal, which for contact lights is directed up and down the runway to provide a high intensity indication toward a plane landing on the runway.

Type II units are equipped with symmetric style prismatic lens. The light distribution is symmetrical throughout the full 360° in the horizontal plane.

## With Shallow Base

Description	Type I Asymmetric		Type II Symmetric	
	Class A Multi- ple	Class B Series	Class A Multi- ple	Class B Series
Clear Lens, No Color Screen..	43651A	43643A	43648A	43640A
With 180° Yellow Screen.....	43652A	43644A	43649A	43641A
With 360° Yellow Screen.....	43653A	43645A	43650A	43642A
With 360° Blue Screen.....	43654A	43646A	43873A	43872A
With 360° Green Screen.....	43701A	43700A	.....	.....

## With Deep Base

Clear Lens, No Color Screen..	43714A	43705A	43711A	43702A
With 180° Yellow Screen.....	43715A	43706A	43712A	43703A
With 360° Yellow Screen.....	43716A	43707A	43713A	43704A
With 360° Blue Screen.....	43717A	43708A	43875A	43874A
With 360° Green Screen.....	43719A	43710A	.....	.....

Prices upon application.

## Airport Control Desks and Panels

Airport Control  
DeskType CPV  
PanelType CPH  
PanelWind Transmitter  
AssemblyType CPS  
PanelType CPF  
Panel

The airport control desk provides the airport operator in the control tower with (1) convenient centralized control of all lighting circuits at the airport; (2) indicating devices for giving wind direction, wind velocity, barometric pressure, outside air temperature, and time; (3) desk space with drawer for records.

Types CPV and CPH panels include a facsimile map, wind instruments, and control switches for all lighting equipment. Type CPV is arranged for wall mounting and Type CPH, with sloping top, is designed for table or shelf mounting.

Types CPS and CPF primary control panels are simple and compact and provide a means for controlling the basic lighting circuits. Type CPS is for shelf mounting. Type CPF has a flange for flush mounting.

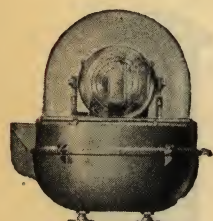
Type I panels provide control for runway marker lights. Type II panels provide control for runway marker lights, runway floodlights, and approach lights. Type III panels are designed for airports with dual runways.

Description	No.	Each
Desk, with Wind Transmitter Assembly....	44109	.....
CPV Panel, with Wind Transmitter Assembly	46813	.....
CPH Panel, with Wind Transmitter Assembly	46814	.....
CPS Panel, Type I.....	43727	.....
CPS Panel, Type II.....	43728	.....
CPS Panel, Type III.....	46798	.....
CPF Panel, Type I.....	46799	.....
CPF Panel, Type II.....	46800	.....
CPF Panel, Type III.....	46801	.....

Catalog numbers do not include incandescent lamps. Prices and information upon request.



## Crouse-Hinds Complete Lighting Sets for Small Airports



Rotating Beacon



Runway Marker Light



Illuminated Wind Cone



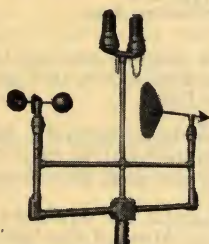
Single Obstruction Light



Ceiling Projector



Traffic Signal Gun



Wind Direction and Velocity Instruments



Double Obstruction Light



Control Panel



Clinometer

The Crouse-Hinds line includes everything in airport lighting for the small airport. This equipment is designed to meet the requirements of the Civil Aeronautics Administration. It is an easy matter to prepare a complete material list for any particular airport lighting installation by checking the requirements of the airport against the basic and supplementary material lists.

**Basic Material List.** Covers the basic lighting materials for an airport, including the rotating beacon, illuminated wind cone, and runway marker lights.

**Supplementary Material List.** Covers additional airport lighting items such as obstruction lights, ceiling projector, etc., wanted for ultimate installation in most cases.

**Runway Lighting Sets.** Includes runway and threshold lights, lamps, and enough cable to connect fixtures around edge of runway. One set should be ordered for each runway. Cable for connecting runway loop circuit to regulator supply is not included in these sets, and is specified separately in basic material list. Sets are designed for lighting unpaved strips, using two rows of lights spaced 150 feet apart. However for strips of greater width or different dimensions, lighting sets can be altered as required.

**Rotating Beacon.** Constructed per CAA Specification L-801 with cast aluminum housing and clear Pyrex glass dome enclosing optical system and rotating mechanism. Projects one clear and one green beam 180 degrees apart which rotates at 6-rpm capacity. Has automatic lamp changer with spare lamp. Beacon is visible at night from any angle above the horizon with either main operating lamp or spare lamp burning. Tell-tale circuit provides indication of failure of operating lamp.

**Wind Cone Fixture.** Constructed per CAA Specification L-807. Cone is externally lighted with four 150-watt reflectors. Includes 60-watt obstruction light; 18-inch nylon wind sock rotates on heavy-duty enclosed ball bearings around main vertical support. Fixture is installed on hinged pole for easy reclamping and servicing.

**Runway Marker Lights.** Constructed in accordance with CAA Specification L-802, to meet new airport lighting requirements for elevated fixtures. For use on both large and small airports as runway lights (clear globe), threshold lights (green globe) and taxi lights (blue globe). Globes are available in both asymmetric style, as used on runway threshold lights, and symmetric style as used for taxi lights at some locations.

Complete fixtures include a globe, fitting with medium pre-focus lamp receptacle, cone, column with breakable coupling, wiring in column, disconnecting plug and receptacle and mounting base. The column is standard 1-inch thinwall conduit. Height of fixture can be varied from 16 inches to 30 inches above ground level to meet local snow conditions. Breakable coupling at the bottom of the column is designed

to withstand static loads from high winds or propeller blasts but will break when struck horizontally with an impact of two foot-pounds or more.

**Control Panel.** Consists of steel cabinet with sloping top. Provides control for the basic airport light circuits, including runway and brightness selection, and 10 circuit breakers for other lights. Flush mounting panel with flange cabinet may be furnished.

**Obstruction Lights.** Standard AN-L-10 type either single or duplex with red prismatic globes, cast aluminum fitting, and medium screw lamp receptacles for 60 or 100-watt lamps. Fittings have 1-inch bottom conduit hub.

**Traffic Signal Gun.** Standard type used by CAA and Army Air Corps. Projects a high candlepower beam visible for 10 miles in the daytime and 15 miles at night. Has 8-inch diameter searchlight type parabolic rear reflector. Front handle changes beam to clear, red or green as desired. Signaling is done by means of rear trigger switch.

**Ceiling Projector and Clinometer.** Projector is stationary vertical type constructed as required by U.S. Weather Bureau and Army Signal Corps Specifications. Projector utilizes 420-watt, 12-volt lamp. A 115-volt transformer is included in cast metal base housing. Clinometer measures angle of light spot on cloud layer for calculation of ceiling height.

## Runway Lighting Sets

## Quantities of Materials and Kw. Load for Runway Sets

See Items 8A through 8D in Basic Material List for description of materials.

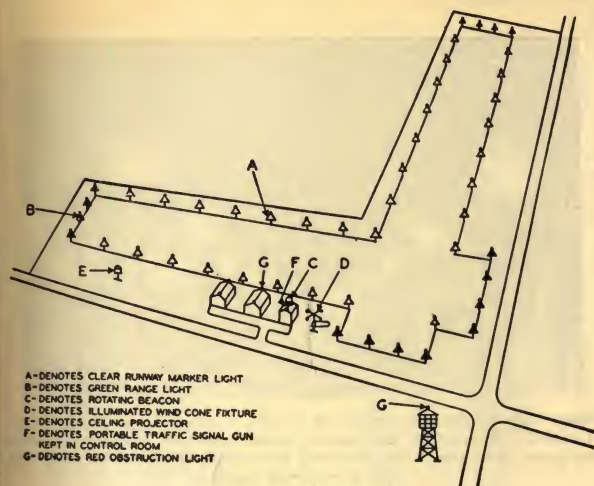
Size of Runway Light Circuit		Item				Kw. Load	
No.	Feet	BA	BB	BC	BD		5
44311	1800x150	16	12	28	0	4290'	1.4
44312	2000x150	18	12	30	0	4730'	1.5
44313	2200x150	20	12	32	0	5170'	1.6
44314	2400x150	22	12	34	0	5610'	1.7
44315	2600x150	24	12	36	2	6050'	1.8
44316	2800x150	26	12	38	2	6490'	1.9
44317	3000x150	28	12	40	2	6930'	2.0
44318	3200x150	30	12	42	2	7370'	2.1
44319	3400x150	32	12	44	2	7810'	2.2
44320	3600x150	34	12	46	2	8250'	2.3
44321	3800x150	36	12	48	2	8690'	2.4
44322	4000x150	38	12	50	4	9130'	2.5
44323	4200x150	40	12	52	4	9570'	2.6
44324	4400x150	42	12	54	4	10010'	2.7
44325	4600x150	44	12	56	4	10450'	2.8
44326	4800x150	46	12	58	4	10890'	2.9
44327	5000x150	48	12	60	4	11330'	3.0

To find cable required for any runway circuit, take actual measured perimeter and add 10 per cent.

Kilowatt loads as listed above include allowance for power losses in cable, with a maximum feeder cable run of approximately 1000 feet from regulator to runway loop.



## Crouse-Hinds Complete Lighting Sets for Small Airports



## Basic Material List

## Includes Beacon, Wind Cone and Runway Lights

Item.	Qty.	Description
1	1	Rotating Beacon, DCB-10 No. 44035.
2	2	Lamps for Item 1, 500-Watt, 115-Volt, T-20 Bulb, Medium Bipost Base, Aviation Service. Lamp No. 500T20/13.
3	1	Illuminated Wind Cone WC-18 No. 44036.
4	1	Hinged Pole for 18-Inch Diameter Wind Cone Fixture; Height, 14 Feet, 8 Inches.
5	4	Lamps for Wind Cone Reflectors, 150-Watt, 115-Volt Medium Screw Base, General Lighting Service. Lamp No. 150.
6	1	Lamp for Wind Cone Obstruction Light, 60 Watt, 115-Volt, A-21 Bulb, Medium Screw Base, Traffic Signal. Lamp No. 60A21/TS.
7	*	Underground Cable for Wind Cone Power Supply, No. 10, 1 Conductor, 600 Volt (Same as Item 8D). Take Twice Measured Length of Circuit and Add 10%.
8		Consists of Items 8A through 8D: Materials for Runway Lighting Sets. Add up Total Materials for Each Runway as Listed under Standard Runway Lighting Sets or Take Actual Quantities Required from Specific Lighting Layout of Airport.
8A	*	Runway Marker Light ERL, No. 44376, Clear Globe, with Isolating Transformer.
8B	*	Threshold Marker Light, ERL, No. 44377, Green Globe with Isolating Transformer.
8C	*	Lamps for Items 8A and 8B, 30 Watt, 6.6-Ampere, T-10 Bulb Medium Prefocus Base, Aviation Service. Lamp No. 6.6A/T10/1P.
8D	*	Underground Cable for Runway Circuits, No. 10, 1-Conductor, 600-Volt, Rubber Insulated with Chloroprene Jacket. (Jacket Can be Reduced to 1/4-Inch if Vulcanized to Insulation.)
9	*	Main Feeder Cables from Regulator to Each Runway Loop Circuit, No. 10, 1-Conductor, 600-Volt (Same as Item 8D). Take Twice the Measured Distance and Add 10%.
10	1	Static Regulator, (†2½, 4) Kilowatts, 240-Volt Primary, 6.6-Ampere Secondary, for Remote Operation, per CAA Specification L-812.
11	1	Control Panel, CPS, No. 43727.
12	1	Runway Selector Cabinet, 3-Circuit, per CAA Specification L-816. Not Required where Only One Runway is to be Lighted.

Alternate Equipment—Direct Operation Regulator  
Replaces Items 10, 11 and 12

- 10A 1 Static Regulator, (†2½, 4) Kw., 240 Volt Primary, 6.6-Ampere Secondary, for Direct Operation. Includes Runway and Brightness Selector Switches and 4 Extra Breakers, per CAA Specification L-811.

## Supplementary Material List

This list includes additional items which will be desired in most cases for a complete lighting installation.

Item.	Qty.	Description
13	1	PTS No. 44280, Portable Traffic Control Projector Complete with 115-Volt Transformer.
14	1	Lamp for Item 13, 50-Watt, 6-Volt, T-8 Bulb, D.C. Prefocus Base. Lamp No. 50T8/83.
15	1	DCE-16 No. 43900 Ceiling Projector, Model 3.
16	1	Lamp for Item 15, 420-Watt, 12 Volt, G-25 Bulb, Mogul Prefocus Base, Aviation Service. Lamp No. 420G25P.
17	1	Standard for Item 15, 3-Foot Length of 4-Inch Galvanized Pipe.
18	1	Base for Item 17, Flange for 4-Inch Pipe.
19	*	Underground Cable for Item 15, No. 10, 1-Conductor, 600-Volt (Same as Item 8D). Take Twice Measured Length of Circuit and Add 10%. (Approximately 2200 Feet Usually Needed.)
20	1	Clinometer Set No. 44173.
21	1	Set of Wind Velocity and Direction Instruments Including FL101 and FL102 Transmitters and FL107 Panel with FL103 and FL104 Indicators.
22	2	Floodlights for Hangar Apron or Loading Area, MDB-16, No. 43676, 70° Spread, with Hinged Door and Standard Base for Mounting on Flat Surface.
23	2	Lamps for Item 22, 1000-Watt, PS52 Bulb, 115-Volt. Lamp No. 1000.
24	*	Single Multiple Obstruction Light for Buildings and Other Locations near Central Control Plant, VAW, No. 43958.
25	*	Double Multiple Obstruction Light, VAW, No. 43961.
26	*	Lamp for Items 24 and 25, 60-Watt, 115-Volt (flame as Item 6).
27	*	Single Series Obstruction Light, for Connecting to Runway Lighting Circuit, VAW, No. 43623.
28	*	Lamp for Item 27, 1020-Lumen, 6.6-Ampere, Medium Prefocus Base, A-21 Bulb, Aviation Service. Lamp No. 1020/66/A21.
29	*	Isolating Transformer for Item 27, 100-Watt, Series-to-Series, Direct Burial Type, per CAA Specification L-803.
30	*	Underground Cable to Connect Primary of Item 29 into Runway Lighting Circuit, No. 10, 1-Conductor, 600-Volt (Same as Item 8D).
31	*	1/2-Inch Conduit for Obstruction Light Wiring to Fixtures.
32	*	No. 12 R.C., 600-Volt Wire for Obstruction Light Wiring to Fixtures.

\*Quantity depends on local conditions. Specify for each installation.

†To determine size of regulator, take load of longest runway, add 100 watts for each 1020-lumen obstruction light lamp (with transformer) in runway circuit. Only one runway at a time is switched on.

Add wiring materials as required for rotating beacon, using 3 No. 10 or No. 12 wires. Extra conductor is for lamp-failure indicating light. Also add conduit (if needed) for bringing wiring in from field to control panel and regulator.

Wherever possible, use same size and type cable as used for runway lighting circuits (Item 8D), since this will simplify procurement of cable.

These material lists include only quantities of lamps as required to use in equipment. Spare lamps should be ordered with initial installation, based on a minimum of 25 per cent of lamps installed and at least one spare lamp of each type. Lamp abbreviation numbers shown are standard ordering abbreviations.

Add wiring materials as required to Items 21, 22, 24 and 25 and miscellaneous small hardware, tape, etc., as required.



## G-E Street Lighting Equipment



Before: Business street in Dixon, Illinois, before installation of new G-E luminaires



After: Same business street in Dixon, Illinois, after installation of new G-E Form 79-S luminaires. Note how this luminaire directs the light upon the street, thereby effectively utilizing more of the light from the lamp

When selecting a luminaire, the first consideration is the amount and quality of illumination needed. Appearance is important, too—not only the appearance of the lighted street, but also the daytime appearance of the equipment itself. Other factors of importance are the mechanical and electrical features of construction which relate to continuity of service, operating and maintenance expense, and the initial investment.

The "before and after" photographs of a street-lighting installation shown above show how G-E modern luminaires meet the basic needs for better street lighting. They show conclusively that much more light is properly distributed—without objectionable glare—than is the case with older types of units.

Daytime appearance is affected mainly by the means chosen to support the luminaires, and nature of the wiring.

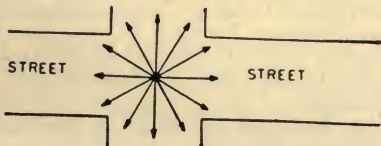
Modern luminaires are of simple functional design and are of relatively small size. Generally speaking, they are designed to be inconspicuous and unobtrusive, rather than to convey any particular artistic or decorative effect; and it is believed that if this idea is carried out in selecting the supporting brackets, standards, and method of wiring, the most satisfactory result will be obtained.

The illumination requirements of many kinds of streets, and users' individual preferences as to methods of installation and operation, result in many variations of G-E modern luminaires. This introduces the problem of selecting the construction best suited to any particular project. In addition to the discussion and examples that follow, we provide General Electric luminaires for all conditions of modern street lighting.

## Types of Light Distributions

## Symmetrical or Circular Distribution

I. E. S. Type V



Luminaires with this distribution are best-adapted for center suspension over intersections or streets where an all-around spread of light is desired.

## Wide Asymmetrical Distribution

I. E. S. Type IV



Luminaires with this distribution are preferred for very wide streets or intersections where several units will be used or for streets which should have a spread of light considerably beyond the pavement area. Side-of-street mounting is recommended.

## Narrow Asymmetrical Distributions

I. E. S. Types II and III



Luminaires with these distributions are recommended for most situations where as much of the light as possible is to fall on the pavement area. Side-of-street mounting is advised.

## 2-Way Narrow Asymmetrical Distribution Obtained

I. E. S. Type I



Luminaires with this distributions give best results where they can be placed well out over the paved surface. Side-wise shielding of light is outstandingly good. This, together with a high angle of maximum candlepower which permits long spacings, makes this distribution especially well-suited to residential streets.

For definition of I.E.S. light-distribution types, refer to *Recommended Practice of Street and Highway Lighting*, The Illuminating Engineering Society, 51 Madison Ave., New York 10, N.Y.; or ask our representative.



### G-E Street Lighting Equipment Designation of Pendent Luminares

The Form numbers which designate G-E pendent luminaires consist of a basic number (such as 79, 72, 45H7, 45L) which signifies the hood or insulator construction, and a suffix letter (such as S, D, R, VR) which signifies the type of reflector equipment. This provides a concise identification for any combination of standard hood or insulator with a standard reflector that may be desired to meet specific requirements for mounting, wiring, insulation values, light control, and appearance.

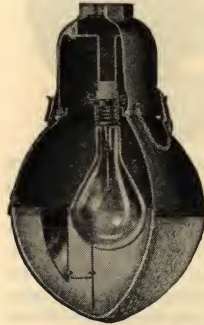
Form 79 hood is a die-cast aluminum hood for series or multiple circuits. It is normally wired internally through the supporting bracket, but may also be provided with bushings for external wiring. These die-cast aluminum hoods are preferred by many users for their attractive appearance and resistance to breakage.



Form 79R



Form 79S or 79P



Form 79D



Form 79AS, AD, or AR

The Form 79R is General Electric's most modern and efficient luminaire for street and highway lighting. The reflector is made of high-efficiency \*Alzak processed aluminum with spun-sealed G-E Holophane refractor globe. This luminaire has asymmetrical light distribution (IES Type III) and is particularly suited for illuminating light to heavy traffic streets, arteries, and highways where highest efficiency is desired. Reflector and hood may be obtained either with natural aluminum finish or with glossy green Glyptal enamel finish. This luminaire will accommodate lamps up to 10,000 lumens series or 575 watts multiple.

The Form 79S is an attractive luminaire having symmetrical light distribution (IES Type V). It is used for lighting intersections or very wide light traffic streets where luminaires may be center-suspended; or business streets where high-level illumination is desired on sidewalks and building fronts. The reflector is made of \*Alzak processed aluminum with spun-sealed, clear rippled or light alabaster globe. This luminaire will accommodate lamps up to 10,000 lumens series or 575 watts multiple.

The Form 79D luminaire is same as the Form 79S with deflectors added. This luminaire having asymmetrical light distribution (IES Type IV) is used mainly for illuminating light to heavy traffic streets and arteries, particularly those over 40 feet wide. This luminaire will accommodate lamps up to 10,000 lumens series or 575 watts multiple.

Two types of detachable globe holders are available in place of spun-sealed globes for the Types S, D, and R reflector assemblies. The roller-latch type may be relamped from the ground with a lamp picker, while the clamp-band type is serviced from the pole, in the same manner as the spun-sealed design.



Form 79SO

1000 or 2500-lumen lamps are used, available for 4 $\frac{3}{8}$ , 5 $\frac{1}{4}$  and 5 $\frac{3}{8}$ -inch light-center lengths.

The Form 79SO is an advanced design open suburban luminaire having asymmetrical light distribution (IES Type II). It is used for lighting residential and very light traffic streets and alleys requiring exceptional durability and low cost. Reflecting shields shade nearby residences. Either or both shields may be omitted for use at intersections. The reflector is made of \*Alzak processed aluminum protected against deterioration by a dichromate finish. Either

Form 79AS is an attractive large-lamp luminaire having symmetrical light distribution (IES Type V). Recommended for lighting business streets where high-level illumination is desired. This luminaire is large and ornamental, and provides highly efficient light control and glare suppression.

The Form 79AD luminaire is similar to Form 79AS with deflectors added. The Form 79AD has asymmetrical light distribution (IES Type IV) and is particularly suited for lighting medium to heavy traffic arteries, express highways, and business streets.

Form 79AS, AD, and AR will accommodate lamps up to 15,000 lumens series or 820 watts multiple.

Form 79AR is similar to Form 79AS except that it includes a small house-side auxiliary reflector and the new No. 4090 Holophane refractor globe. Its light distribution is I.E.S. Type IV; its application the same as Form 79AD, but utilization efficiencies are much higher.



Form 79VR



Form 79CR

Form 79VR is highly efficient, having two-way narrow asymmetrical distribution (IES Type I), practical for illuminating residential and very light traffic streets where economy of 4000 and 6000-lumen lamps at long spacing is desired. Reflector is made of \*Alzak processed aluminum with G-E Holophane refractor globe spun-sealed. Accommodates lamps up to 10,000 lumens series, or 575 watts multiple.

The Form 79CR is an enclosed luminaire having asymmetrical light distribution (IES Type III). This luminaire is well-suited for lighting residential and very light traffic streets and alleys where attractive appearance and easy maintenance of lighting efficiency are desired at low cost. The reflector is made of \*Alzak processed aluminum with G-E Holophane refractor spun-sealed. Either 1000 or 2500-lumen lamps are recommended, available for 4 $\frac{3}{8}$ , 5 $\frac{1}{4}$ , and 5 $\frac{3}{8}$ -inch light-center lengths. A similar unit with 4-way distribution for intersections is available.

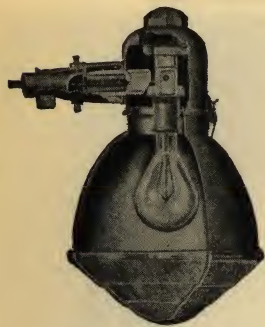
\*Manufactured under Aluminum Company of America patents.

Continued



## G-E Street Lighting Equipment

Concluded  
Designation of Pendent Luminaries



Form 101VR



Form 72R, D, or S



Form 45H7R



Form 45H7CR

**Form 101** series of luminaires are similar to the Form 79 luminaires except with either plain or heat-insulated slip fitter added. The heat insulated slip fitter allows adjustment of the luminaire for proper alignment. The porcelain heat insulator prevents grounds in series circuit bracket cable that may be caused by high-temperature operation. The porcelain is in the region of critical temperatures. This time and temperature-defying protection against insulation breakdown deserves serious consideration.

**Form 72** luminaire differs from the conventional insulator in that it is supported under compression by a clamp around the middle of the insulator. Porcelain, being weak in tension but very strong in compression, will by this method of support better resist breakage. Short circuits and grounds are avoided on the Form 72 because of the strong two-conductor cable, the large radius of bend, and the snubbing action of the cable in its channel which relieves strain on the binding posts. The cable enters a long porcelain channel and is split well within, so there is no chance of grounding against the metal parts or pipes.

This porcelain hood is used for series circuits up to 11,000 volts and will support nearly all of the G-E modern reflector assemblies.

dial-wave reflector, enclosed suburban-reflector assembly, and a variety of globes and refractors.

**Form 45H7** luminaires have wet-process porcelain insulators for series circuits up to 11,000 volts. This insulator is equipped with tie lugs and either external terminals or ports and internal terminals for line wire. It is constructed of standardized parts of highest quality for long life and low maintenance cost. This insulator is supported by a top-tapped galvanized cast iron hood.

Nearly all of the G-E modern reflector assemblies may be used with this insulator.



Form 45L

**Form 45L** is a low-priced, galvanized cast iron hood used for multiple or medium-voltage series circuits, preferably under 2500 volts. This hood can be furnished either internally wired or externally wired. On all multiple luminaires, the socket is mounted on an adjustable support, so that the light center can easily be set to give the best distribution for various sizes of lamps. The Form 45L is best suited for series circuits using Type IL transformers. For maximum safety on circuits over 2500 volts, an insulator type of luminaire, such as the Form 72 or Form 45H7, is recommended.

The Form 45L is most often used with the open suburban and radial-wave-type reflectors, although it may be obtained with cast reflectors and a variety of globes and refractors.

The 45L with a radial-wave reflector, as illustrated, makes a practical minimum price luminaire for general-purpose lighting.



Form 46

**Form 46** is a dry-process porcelain insulator for luminaires commonly used on residential and light traffic streets. It is used on series circuits, preferably under 2500 volts. The Form 46 may be wired either internally or externally. It is equipped with integral porcelain tie lugs which remove the strain from the terminals when wired externally. Two holes through the top of the insulator are used when

wired internally. The insulator is shipped with cork plugs in these openings to prevent condensation from entering when wired externally. Either wing-screw clips or hinged-clamp adapter may be used with the open-type reflectors.

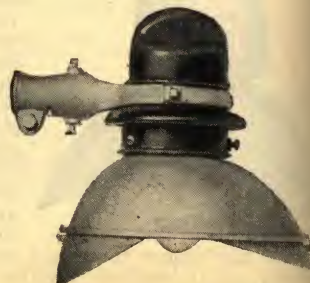
The illustration shows the Form 46 insulator with the open suburban reflector. It may also be used with the ra-



Form 101AR



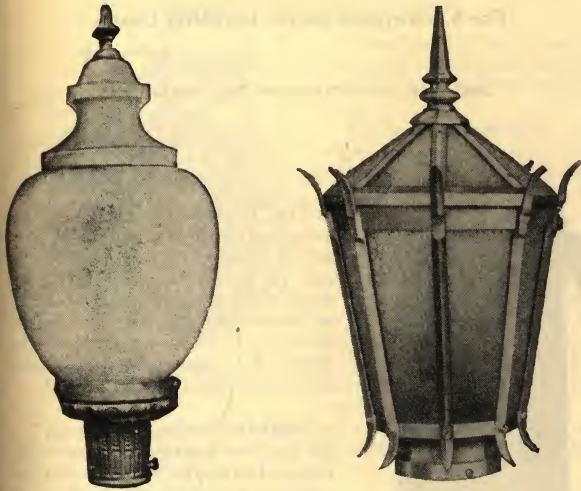
Form 101R



Form 7250



## G-E Ornamental Luminaires



Ornamental luminaires are used where their particular styling appears more suitable for the environment in which they are to be installed, or when a liberal proportion of upward light is desired to illuminate building fronts along business streets or to illuminate trees, as in parks. The illustrations show two distinctive designs. Many other designs are available to harmonize with different types of architecture.

The G-E ornamental luminaire consists of a cast iron casing with series or multiple socket, rippled glass globe, and a canopy and canopy holder. It may also be furnished with a refractor, ornamental ribs and bands, or in the lantern-type unit.

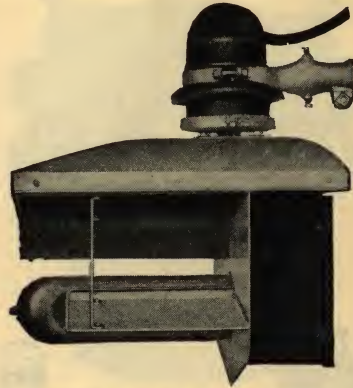
Metal parts of lantern units are made of cast aluminum with natural finish. The casings are designed to harmonize with architectural treatment of the lighting standards. Each unit includes a series-circuit porcelain receptacle and socket or a multiple socket.

Rippled glassware, for these luminaires, has high mechanical strength, efficiency of light transmission, and immunity from the effect of abrupt changes in temperature. It gives an incandescent-light source the appearance of sparkling light. The small irregular vertical ridges give excellent diffusion.



## G-E Sodium Luminaires

### Type M-2



**Straight Series Luminaire with Form 72 Insulator for Externally Wired Bracket**

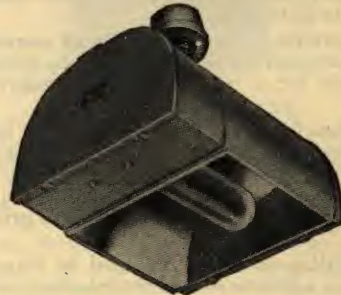
This luminaire is used for lighting highways, urban and rural traffic arteries, bridges, intersections, traffic circles, grade crossings, underpasses, and industrial yards. It operates from either standard a.c. multiple or constant-current series circuit.

The reflectors are polished \*Alzak finished aluminum with a dichromate and plastic finish and methacrylate lacquer seal to give them long life and maintain initial high efficiency.

Auxiliary equipment for operating the luminaire is self-contained and includes a radio-interference suppressor. Lamp and vacuum flask are held securely, but can be removed easily. Flask breakage is negligible because the lamp can be replaced without moving the flask.

Uses 10,000-lumen sodium lamp, Type NA-9, and No. 71-G vacuum flask.

### Type M-3



This luminaire is used for lighting tunnels. It may be suspended from the ceiling over the pavement. In new tunnels, it is desirable to recess the luminaires with the glass door approximately flush with the ceiling surface. For one-way-traffic tunnels, a swivel mounting can be furnished with the luminaire which permits further shielding of the light source.

A 10,000-lumen Type NA-9 sodium lamp is used in this luminaire. This sodium lamp results in excellent overall economy on continuous burning tunnel-illumination circuits. Because of the resulting saving in wattage consumption, cable and circuit expense, the use of sodium lamps on 6.6-ampere series circuit should be carefully considered for longer traffic tunnels.

The Type M-3 sodium luminaire is totally enclosed. The reflector is constructed of \*Alzak processed aluminum of high reflectivity. The required control and protective equipment is located in a housing in the back of the luminaire which is easily accessible by opening a hinged door.

\*Manufactured under Aluminum Company of America patents.



## G-E Form 79D Mercury Luminaires



Form 79D



Ballast

Type F-H1  
Mercury Lamp,  
400 Watts,  
16,000 Lumens

More light is obtained on the street for each dollar spent when mercury lamps are used in modern G-E pendent luminaires because:

1. Mercury lamps produce more lumens per watt of power consumed, than do filament lamps.
2. Maintenance costs will be lower since longer-life lamps makes it necessary to visit the luminaire for relamping only once every 12 to 15 months.

The characteristic bluish-white color of mercury lighting attracts the attention of the public, thereby giving those responsible credit for a modern and progressively lighted street.

Mercury lamps for street lighting find their best application on main business streets where high levels of illumination are desired. Mercury lighting should be considered only where 0.6-foot-candle average, or higher, is desired. This will include, in addition to the above, primary traffic arteries.

Mercury lighting is easily included in standardization programs, as the addition of a mercury ballast will convert a standard multiple fixture for mogul-based 7-inch light-center filament lamp into a fixture for operating the 400-watt, 16,000-lumen F-H1 mercury lamp.

Best appearance is obtained with mercury lighting when light alabaster glassware is used. Refractor-type glassware, for mercury luminaires, should be of comparable size to those specified for filament lamps of the same lumen output.

Operating experience indicates that available mercury lamps have longer life and more stable operation when burned in the vertical position.

Mercury lamps may be operated from either series or multiple circuits; a suitable ballast is required in both types of operation.

The rated life of the G-E F-H1 mercury lamp is 6000 hours—based on specified test conditions with the lamp turned off and restarted no oftener than every 10 hours.

The new type ILH high-power-factor multiple ballast is small, lightweight, and efficient. This ballast has a power factor of 0.91. Starting current is less than operating current, and the dangers of high inrush current are eliminated. This ballast will operate over a wide range of voltages without taps.

## G-E Type RO Pole-Type Constant-Current Transformers

For 6.6-Ampere Series Lighting Loads

2400 Volts (With 2150-Volt Tap)—60 Cycles



The Type RO is an oil-cooled constant-current transformer which operates automatically. It can be mounted on poles in remote districts or where subdivided downtown lighting circuits are desired. It can be controlled by Type E-1 controller and time switch or photo electric relay.

Built in sizes ranging from 1 to 30 kw., to operate at any commercial primary voltage and frequency or secondary current, but the standard transformer is for 60 cycles, 2400 volts on the primary and 6.6 amperes on the secondary.

The 2400-volt transformer will operate satisfactorily on from 2300 to 2500 volts, and a tap is provided on the primary for operation at 2150 volts without reduction of output.

These features are combined with the same current regulation through as wide a range as offered by the best station-type constant-current transformer. This feature alone practically guarantees the normal life of the lamps operating on a circuit controlled by such a transformer. The efficiency is the same as for the station-type transformer and the primary power factor is 75 per cent at maximum load.

The high internal reactance of the transformer serves to protect the lamps at starting and acts instantaneously to check surges on the line which would otherwise tend to shorten the life of the lamps.

The moving secondary coil with its high repulsion and the compound balancing lever, gives regulation within  $\pm 1$  per cent from full load to dead short circuit. This feature not only protects the lamps from changes in current, because of changes in secondary load, but also protects the lamps from fluctuations in primary voltage.

Ball bearings are used throughout for immediate response to small changes of load.

Lightning arresters are recommended on both primary and secondary overhead lines for protection.

The Type RO transformer is also available in subway type for mounting in subways or manholes. This transformer is almost identical with the pole-type transformer, except that it is enclosed in a specially designed sheet steel waterproof tank. Since poles carrying circuits are being removed from many of the city streets, this transformer may be mounted underground and thereby connected directly to the underground feeder circuits and lighting circuits.

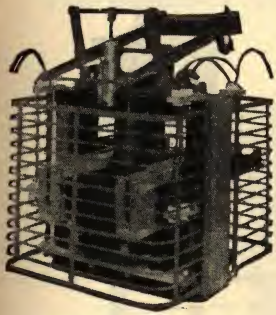
Subway transformers are equipped with oil indicating plugs installed in the tanks to indicate the oil level without requiring the removal of the cover.

If the primary circuit leads into the subway from overhead, pole-type cutouts can be used. If, however, the primary circuit is entirely underground, the D & W subway fuse cutouts must be used.

Similar transformers available with built-in power-factor correction—Type ROC. Information on request.



**G-E Type RF Automatic Station Type  
Constant-Current Transformers**  
For Operating A.C. 6.6-Ampere Series  
Lighting Loads  
24,000 Volts (No Taps)—60 Cycles



With Band Iron Casing

Designed for use in an unattended substation. Can be used for any indoor installation.

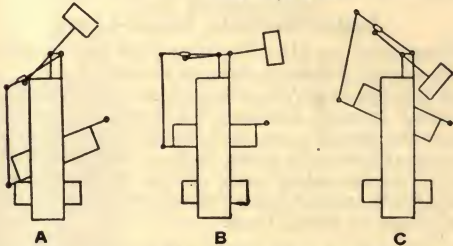
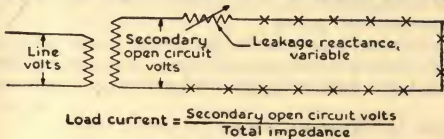
Built in practically any capacity and for any commercial voltage, frequency, and secondary current, but it is recommended that, on account of the high secondary voltage, capacities not exceeding 20 kw. be operated with single-circuit secondary. Sizes from 40 kw. are furnished with multicircuit secondary, and can be operated either single-circuit or multicircuit.

Can be started up automatically with coils together and with only one lamp on circuit, regardless of capacity of transformer. Current surge not sufficient to destroy lamp.

Transformers are not provided with any taps, either for voltage or for partial-load operation. Because constant voltage is maintained in the stations, no primary voltage tap is necessary.

Equipped with protective low-loss band iron casing. Balancing mechanism supported on ball bearings.

**How the Constant-Current Transformer Regulates**



The moving-coil, constant-current transformer is a variable-impedance device for regulating output current to a constant value through a large range of load impedance and with a limited variation in primary supply voltage.

Fundamentally, its equivalent circuit may be considered as a conventional, low-reactance, distribution transformer with an external, self-adjusting variable series reactance.

This reactance is magnet-leakage reactance and always adjusts itself to a value, which, when added to the load impedance, permits constant current to flow. The amount of reactance is determined by the moving-coil position, which in turn is maintained by the force of repulsion between coils.

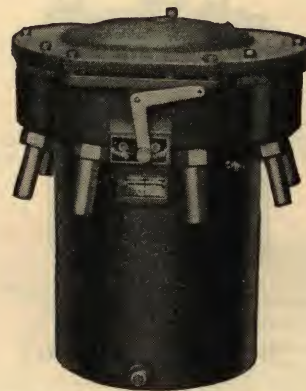
The desired output current sets up a definite corresponding force of repulsion which floats the moving coil in the position which produces this current. For any given set of conditions, a state of mechanical equilibrium is attained whereby the force of repulsion, aided by the counterbalancing weights, exactly balances the weight of the moving coil.

Where the transformer is fully loaded and minimum series reactance is needed, the moving coil floats near the bottom of the core window (Fig. A). As load is removed and more reactance is required to regulate current, the coil floats higher. Fig. C shows it in the position corresponding to no-load (short-circuited) operation. Changes of load tend to unbalance the equilibrium of forces by increasing or decreasing the force of repulsion. In a freely moving, well balanced mechanism, these are immediately counteracted by the movement of the floating coil to a new position which restores the mechanical-electrical balance.

**G-E Type E-1 Street Lighting  
Controllers**



Type E-1-F, for Pole Mounting



Type E-1-C, for Subway Use

Designed to control Type RO pole or subway transformers by means of an adjacent series circuit, a multiple pilot-wire control circuit, or a local time switch or photoelectric relay. With either series operating coil rated from 6.6 to 20 amperes at any frequency, or with shunt operating coil at 120, 240 volts, 50, 60, or 25 cycles; in two types—normally open or normally closed. Also furnished for subway mounting when necessary. Switch is for use on any voltage up to and including 7620 volts, 15 amperes, and the most popular voltages with current ratings are as follows: At 7500 volts, switch will break 15 amperes; 6600 volts, 25 amperes; 4500 volts, 35 amperes; or 2300 volts, 50 amperes. Carrying capacity 60 amperes at any voltage above 500. Operates at any frequency.

The wattage of operation coil is such that enough heat is generated to overcome any congealing effect, and switch may be used in any weather condition which will be encountered in the northern hemisphere without sluggish operation. The high-potential test on this controller is 25,000 volts from power to control from power to ground, or from control to ground.

Pole-type switch is mounted in steel tank with sheet steel cover which is not connected to switch mechanism. Wet-process bushings have clamp-type terminals.

Subway-design switch is same as pole-type in respect to electrical characteristics, but has cast-iron tank and wiping sleeves for cables.



**G-E Type SL Series Transformers****Subway and Aerial Types**

For 60-Cycle, 6.6-Ampere Constant-Current Circuits,  
6.6-Ampere Secondaries



Pole Type, Oil-Filled,  
4 and 5 Kva.



Subway Type, Compound-  
Filled, 2 to 4 Kva

An insulating transformer, the primary winding of which is energized from a series circuit, and the secondary of which is used for supplying current to a small number of lamps connected in series and located where the high potential of the main series circuit would be objectionable—for 6.6 amperes primary and secondary.

At certain locations it is sometimes desirable to have a lower potential than prevails on large capacity series-lighting circuits, and yet, since they function similarly, it is desirable to control these branch circuits simultaneously with the main circuit.

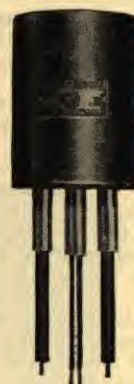
The SL transformer affords an ideal method for this control, as the low-voltage branch circuit is turned on and off with the closing or opening of the main constant-current-transformer circuit. Fixtures with series sockets and film cutouts must be used on these transformers.

Both the aerial and subway types are available in output sizes from 0.25 to 5 kva. They are mounted in casings made of drawn copper-bearing steel. The aerial-type transformers of 0.25 to 3-kva. sizes are compound-filled, and the 4 and kva. sizes are oil-filled. The subway-type transformers of 0.25 to 4-kva. sizes are compound-filled, and the 5 kva. sizes are oil-filled. For both the aerial and subway types, the secondary current regulation is within  $\pm 1$  per cent for the 0.25 and 0.5-kva. sizes for loads between 80 and 100 per cent, and for the 1 to 5-kva. sizes for loads between 80 and 108 per cent.

All transformers are tested with 22,000 volts applied to the primary with the secondary, core, and casing grounded. Also, 4000 volts is applied to the secondary with the primary, core, and casing grounded.

**G-E Type IL Series Transformers****Pole-Base and Aerial Types**

For Use on 60-Cycle, 6.6-Ampere Constant-Current Circuits



Pole-Base  
Type



Aerial Type

**Series-Series, Single-Lamp**

For operating one 6.6, 15, or 20-ampere series lamp from 6.6-ampere constant-current series circuit.

Allow the use of high efficiency series lamps where high potential is impracticable and unsafe. No film cutout is required; each lamp is independent of the others in circuit. In case of an accident to one or more, remainder of lamps on circuit burn without interruption.

For use with pendent units, transformers can be mounted on the crossarms of poles.

When lamp wattage varies between 8 per cent above and 20 per cent below normal, secondary current will not vary more than 1 per cent with normal primary current and frequency.

Available in either pole-base or aerial type.

**Series-Multiple, Single-Lamp**

For operating one 115-volt, 40 to 1000-watt multiple lamp from 6.6-ampere constant-current series circuit.

Allow the use of series circuits to feed floodlights, small signs, safety islands, illuminating roads, and warning signs. This permits simple control of multiple lamps, so that they may be turned on with street lights. Series socket or other protective device using a film cutout must be used with all series-multiple, single-lamp transformers. Available in either pole-base or aerial type.

**Series-Multiple, Multilamp**

For operating groups of 115-volt multiple lamps from a series circuit. Available in three sizes, 350, 500, and 750 watts full-rated capacity. Used principally for lighting airport wind tees and obstruction lights, power being supplied from series boundary or runway-lighting circuits. Close voltage regulation from full load to open circuit. No open-circuit protection device is necessary. Available in either pole-base or aerial type.

**Special Features**

All Type IL transformers are given a one-minute insulation test of 22,000 volts between primary and all parts. Also a 1500-volt insulation test between secondary and all parts.

The current regulation is within 1 per cent with load variations from 80 to 108 per cent of normal rating.

Internal construction of pole-base type is the same as aerial type. Leads are brought out through wiping sleeves welded into the cover. Soft-rubber bushings are provided to effectively seal leads passing through the casing into the wiping sleeves. Wiping sleeves are of tinned steel to aid in making a wiped joint.

The core is made of carefully annealed, high-permeability, nonageing, cold-rolled silicon steel. High and low-voltage windings are wound and insulated separately, then impregnated under vacuum before assembling to the core. Insulation is for 10,500-volt circuit. Entire casing is filled with high quality insulating compound. Case is constructed of one-piece drawn copper-bearing steel.



**G-E Pellet Lightning Arresters**

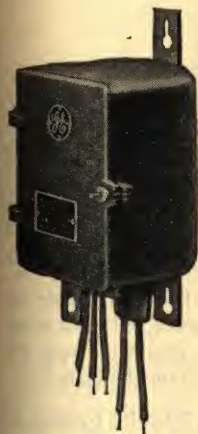
For Types RO and ROC Constant-Current Transformers

Pole and Subway Type—Outdoor Service Only



Recommended for protection of both the primary and secondary sides of constant-current transformers.

Pellet arresters are single-pole, for outdoor use on both the constant-potential side and the load side of constant-current transformers. Each design has a minimum and maximum voltage rating and, under no circumstances, should it be applied to a circuit the voltage of which can exceed the arrester's maximum rating. Where selection of arresters for the protection of the load side of the transformer is to be made, the arresters should never be applied to a transformer of a larger kilowatt rating than specified for the arrester.

**G-E Protectors**

Pole Type for Multiple-Control Circuit

Open circuits in series-street-lighting systems are unavoidable, especially on aerial circuits, and it is desirable from the standpoint of safety first, that when an open circuit does occur, the primary of the main transformer be de-energized. This protector has been developed to operate in conjunction with a Type E-1 controller, and its function is to open the controller as soon as an open circuit takes place.

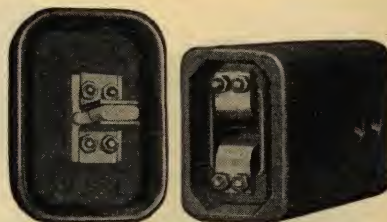
The mechanism of the protector consists of two small transformers, a thermal switch, relay, set of disconnecting contacts, and a timing resistor. One of the two small transformers is energized by the control circuit and the other by the load circuit to be protected. Under normal operating conditions, the disconnecting contacts are closed on the multiple-control type, and on the series-control type they are open.

When an open circuit occurs in the load circuit, the relay becomes de-energized, closes, and completes a circuit so that the thermal switch will operate and open the disconnecting contacts on the multiple type (close on the series type) to de-energize the controller operating coil. This allows the controller contacts to open and de-energize the primary of the constant-current transformer.

After the open circuit in the load circuit has been repaired, the protector can be reset (reconnecting the transformer to the main system) by means of a reset lever conveniently located in the bottom of the casing. This protector operates entirely in air and is housed in an attractive drawn steel case. It is isothermic in function.

**G-E Form F-100-B Pothead Cutouts**

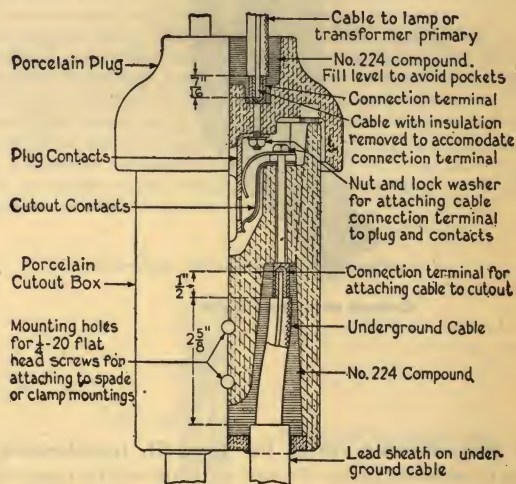
For Ornamental Street Lighting Units



Pothead Cutout Only



Cutout with Spade Bracket and Cable Clamp. For Mounting Inside Base of Standard



Sectional View of Form F-100-B Cutout

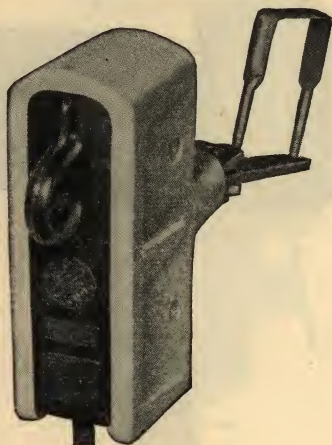
For use with straight series street-lighting circuits for mounting in the base of ornamental lighting standards.

Consists of two sections, the box and plug, both made of wet-process porcelain. Plug is equipped with flat contact strips, insulated from each other. Provision is made at top part of plug so that insulating compound can be poured in around the leads. Box contains four flat phosphor-bronze springs. Contacts are assembled within an air-expulsion chamber.

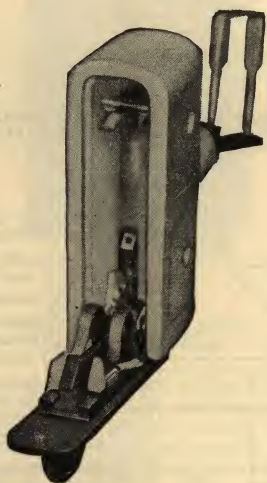
At the top of box, a hole is provided through which insulating compound can be poured. Two holes are provided in bottom of contact of cutout for parkway cable.



### G-E Disconnecting Dropout Cutouts For Type SL Transformers and Loop Sectionalizing Application



Dropout Cutout



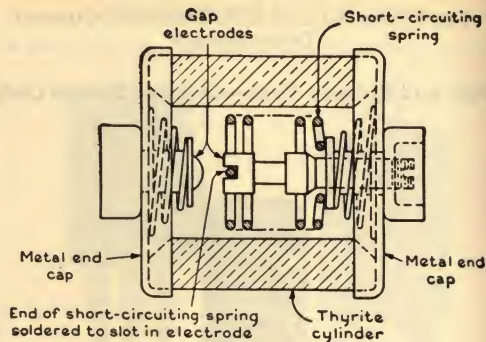
Cutout with Door Open

A disconnecting switch for Type SL transformers and loops of series-lighting circuits, with automatic open-circuit trip protected from accidental operation by a surge-voltage by-pass. It keeps the main circuit closed, prevents unnecessary breakdown of luminaire film cutouts by voltage surges, removes voltage from broken wires, protects transformers and cables from sustained overvoltage of open-circuit operation, provides convenient and positive means for disconnecting the transformer or loop for servicing. For aerial mounting on crossarm.

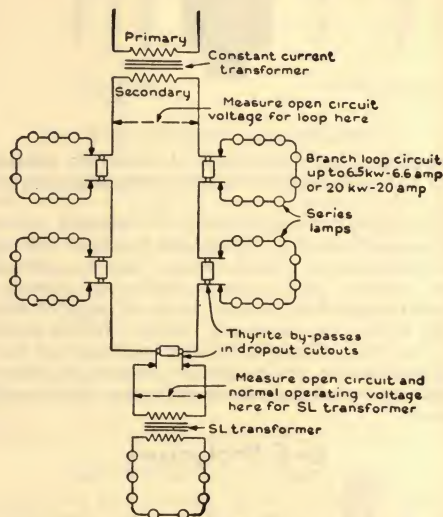
Used for series loops having a drop of not more than 1000 volts, all currents to and including 20 amperes. Open-circuit voltage must not exceed 10,000 volts.

Used for Type SL transformers up to 10-kw. rating in 6.6, 7.5, and 20-ampere primary rating.

### G-E Thyrite By-Pass



Cross Section View of Thyrite By-Pass



Typical Application of Dropout Cutout on  
Type SL Transformer or Loop Circuits

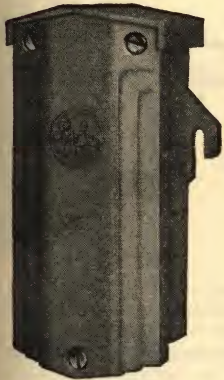
The Thyrite by-pass, the detector and trip element of the dropout cutout, is the means for automatically releasing the door in event of open circuit—thus allowing the door to be thrown open, disconnecting as well as short-circuiting the protected loop or transformer.

The Thyrite by-pass is shunted across the load, inside the cutout. It is able to detect the difference between surge overvoltage and open-circuit voltage; and will pass the former through it harmlessly, but close upon the latter.

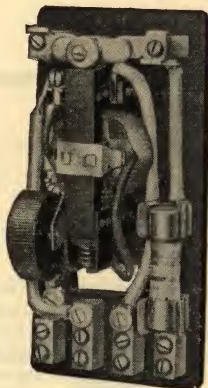
The impedance of a properly selected Thyrite by-pass to normal voltage is sufficiently high that leakage current and heating are negligible. A surge voltage encounters (because of the inherent properties of Thyrite) relatively low impedance, and will therefore pass readily through the Thyrite material or spark across the internal gap; but the properties of the Thyrite will prevent a power follow. A sustained overvoltage resulting from open-circuit operation, however, will produce sufficient current flow (either through the Thyrite material or across the arc gap, or both) to develop the heat necessary to melt the solder holding the short-circuiting spring. The release of the short-circuiting spring forces out the metal knobs projecting from the end caps, allowing the Thyrite by-pass to slide down into the slots in which it is normally held, thus causing the slider to be released and allowing the door to be thrown open. Only a fraction of a second is required for this operation.



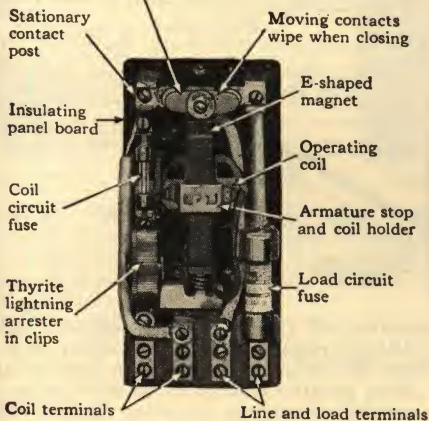
## G-E CR7843-A 30-Ampere Remote Control Multiple Switches



Multiple Switch

Internal Mechanism  
Normally Open Type

Silver-alloy heavy-duty contacts designed for full 30-amp. lamp load, reversible for normally-open or normally-closed operation



All terminals, clips, etc. of brass, cadmium plated

This remote control switch is a single pole, single throw magnetic switch for operating one or more lamps on one low-voltage multiple circuit. Its application is for remote control by pilot wire or cascade connection, for mounting on a pole or in the base of an ornamental standard. The capacity of this multiple switch is 30 amperes normal lamp current at 125 volts, any frequency. Normally open or normally closed with an inrush capacity up to 15 times normal current. The operating coil consumes about 2 watts at 125 volts a.c., 60 cycles.

Switch is supplied with or without the following optional equipment: 30-ampere load circuit fuse; 2-ampere coil circuit fuse; carbon-block lightning arrester in coil circuit; Thyrite arrester in coil circuit, alternative with carbon-block arrester for surge voltage protection.

Switch is also available with a 6.6-ampere operating coil for operation from series lighting circuits with Type IL transformer.

Another variation of this switch is furnished with 10-ampere contacts at a slight reduction in price.

## G-E Film Cutouts

### Enclosed Copper-Oxide Film Cutouts



Copper-Oxide Disc Cutouts Are Supplied in This Handy Plastic Screw-Top Container, Clearly Labeled

Rolled metal edge makes cutout strong and easy to install.

Smooth flat surfaces insure good electrical contact.

Stiff fiber insulation, securely clamped makes cutout mechanically sturdy; it will not fall apart.

Fiber insulation excludes moisture; colored for identification of rating.

Oxidized copper disc gives excellent uniformity of dielectric value.

Indentation centers copper insert.

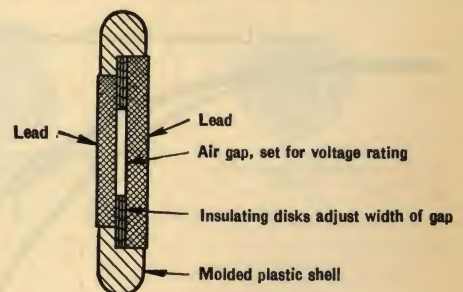
"All-round" contact makes cutout pressure-proof.

Enlarged Cutaway View of Enclosed Copper-Oxide Film Cutout

Used with individual lamps in series circuits to provide circuit continuity when the lamp fails.

G-E copper-oxide film cutouts are outstanding for their dependable operation and sturdy construction. The dielectric value of copper oxide is carefully controlled for uniformity, and the film is not affected by heat or pressure. The oxidized disc is securely enclosed in a moistureproof aluminum and fiber casing which resists damage and will not separate. Carefully controlled production of this standardized cutout in large quantities makes its high quality, reliable protection available at low cost.

### Air-Cap (Lead-Disc) Cutouts



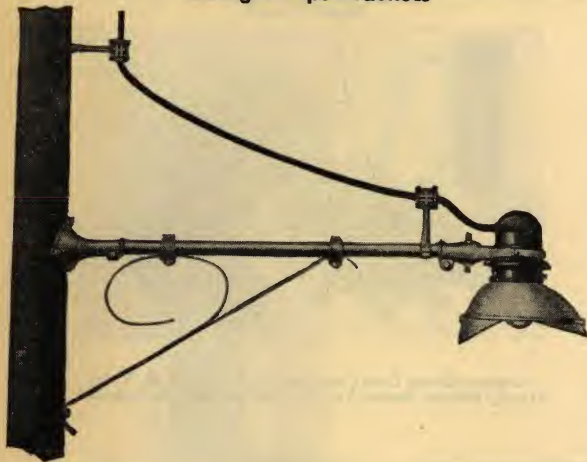
Air-gap cutouts are high-voltage types for use with Type SL series transformers for the protection of the transformer itself. Two lead inserts are separated by an air gap (variable according to voltage rating). Open-circuit voltage breaks down the dielectric of the gap, and the resulting current flow softens the lead sufficiently to cause the two inserts to fuse together through the gap.

Cutouts of this type should not be used for lamp protection; a branch series circuit supplied by a Type SL transformer should have its lamps protected by copper-oxide disc cutouts of proper rating, so that the transformer protective cutout will operate only if the circuit itself goes open.



## G-E Pipe Brackets for Street Lighting

Straight Pipe Brackets



Popular straight pipe bracket for hanging all types of luminaires for street lighting. Strong, durable, and easy to install; offered in a wide variety of types and lengths to meet all kinds of installation problems.

Union Metal Curved Upsweep Pipe Brackets



A popular, ornamental-type upsweep pipe bracket for mounting pendent-type luminaires. Strong, durable, easy to install, offering higher mounting height and a variety of lengths to fit all installation problems. Includes plumbizer (leveling adjustment) in head.

Curved Upsweep Pipe Brackets



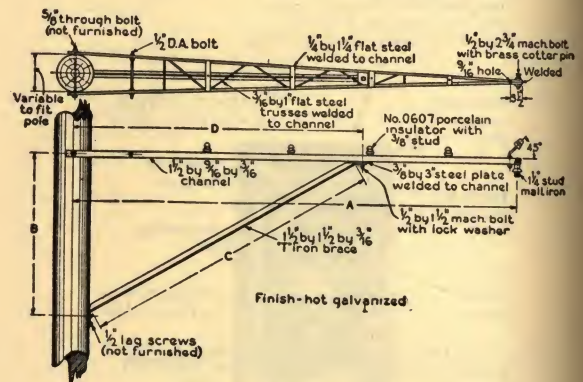
A new style upsweep street lighting bracket for wooden poles, featuring the attractive single-curve arm. Exceptionally easy to wire, with long radius bending of cable to prevent insulation cracking. Takes slip-fitter luminaire.

Straight Overbraced Mast Arms



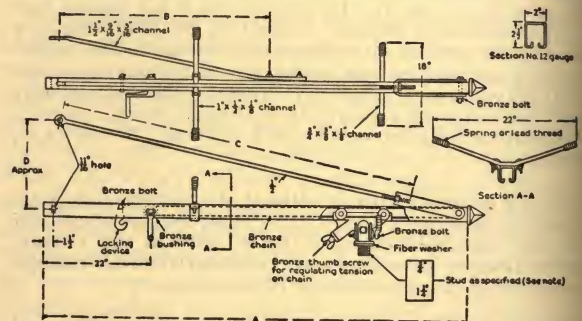
For supporting lightweight luminaires, such as Form 101, where conditions require a longer extension than that provided with ordinary brackets. For wood-pole mounting, with braces attached to both sides of pole, to provide strength and rigidity. Neat appearing, easy to install, and requires very little pole space. Also available with under braces and or right-angle bend.

Channel Mast Arms, Bottom-Braced



For supporting all types of street lighting luminaires, where conditions require longer extension and greater strength than the pipe brackets. Twin-channel arm construction offers greater resistance to side sway. Underbraced to provide maximum mounting height. Choice of end fittings for slip-fitter or top-tapped luminaires. Available in a variety of lengths, either overbraced or underbraced.

Channel Mast Arms, Chain-Operated Trolley Type



Preferred type retractable trolley mast arm, crank-operated. For supporting all types of street lighting luminaires where conditions require luminaire be serviced from pole. Side brace offers greater resistance to sway. Uses top-tapped luminaires.



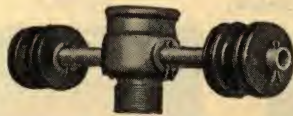
## G-E Hangers and Wiring Accessories for Street Lighting

**Spreader Arm**



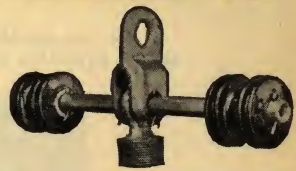
To clamp to bracket (3500 volts or less). Sizes for 2, 1 $\frac{1}{4}$ , or  $\frac{1}{4}$ -inch pipe.

**Spreader Arm**



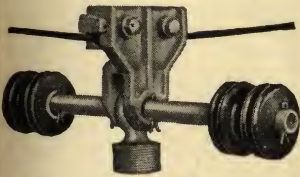
To mount on bracket end (3500 volts or less). For 1 $\frac{1}{4}$ -inch top tap, with 1 $\frac{1}{4}$ -inch bottom pipe thread.

**Eye Suspension Hanger**



With 1 $\frac{1}{4}$ -inch stud and spreader arm (3500 volts or less).

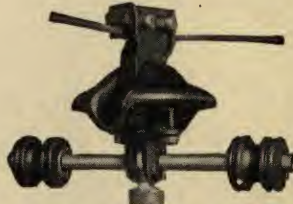
### Span-Wire Clamp Suspension Hangers



With 1 $\frac{1}{4}$ -inch stud and spreader arm (3500 volts or less).



With 1 $\frac{1}{4}$ -inch stud, without spreader arm.



With 1 $\frac{1}{4}$ -inch stud and spreader arm (for all series circuits).



With 1 $\frac{1}{4}$ -inch stud, without spreader arm (for all series circuits).

### Miscellaneous Suspension Devices



**Plumbizer**



**Eye-Suspension Stud**



**Cable Inlet**

Plumbizer. Sizes, 1 $\frac{1}{4}$ -inch upper tap, 1 $\frac{1}{4}$ -inch lower nipple; 2-inch upper tap, 1 $\frac{1}{4}$ -inch lower nipple; 2-inch upper tap, 2-inch lower nipple. Green paint finish.

Eye-Suspension Stud. Sizes, with 1 $\frac{1}{4}$ -inch thread and with  $\frac{3}{4}$ -inch thread.

Cable Inlet. 1 $\frac{3}{4}$ -inch top and bottom thread.

### Insulated-Wire Holders $\frac{3}{4}$ -Inch Opening



**For Mounting  
1 $\frac{1}{4}$ -Inch  
Pipe**



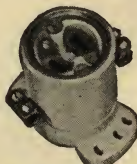
**For Mounting  
to Wood  
Pole**

## G-E Sockets and Receptacles for Street Lighting

### Multiple Sockets



**Mogul Screw Base,  
Skeleton Type**



**Medium BI-Post Base,  
Maximum Rating of  
10 Amperes**



**Medium Screw Base,  
Porcelain Type**



**Medium Screw Base,  
with Cast Binding  
Posts**

### Series Sockets

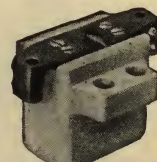
### Series Receptacles



**Mogul Screw Base,  
Straight Shell,  
Porcelain or  
Black Textolite**



**Mogul Screw Base,  
Flared Shell,  
Porcelain or  
Black Textolite**



**Dry Process Porcelain,  
Vertical Binding Posts  
for Post-top  
Luminaire**



**Wet Process Porcelain  
for Form 79  
and 101 Hoods**



## G-E Street Lighting Glassware

We can supply renewal glassware for all types of G-E luminaires. Some of the many shapes available are illustrated below.



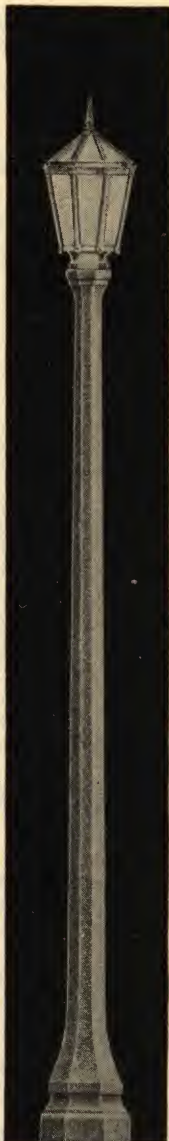


## American Concrete Lighting Standards

## Union Metal Steel Lighting Standards Columbian Design



Colonial Design  
with Type S  
Fitter and  
Folium Casing



Urban Design  
with Type P  
Fitter

### G-E Folium Casing



The folium casing is used on poles with the Type S fitter. Cast aluminum is standard but bronze can also be furnished. Two other types of fitters are available as shown below. The Type P is preferred.



Pole Adapter



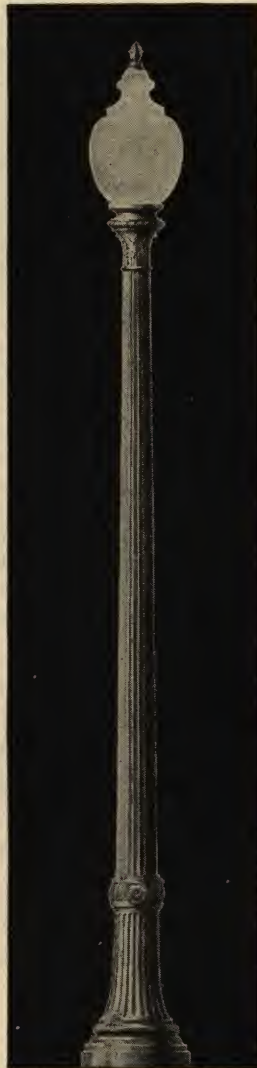
Type P  
Fitter



Type I  
Fitter



Type S  
Fitter

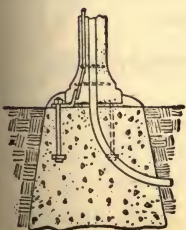


Design No. 807

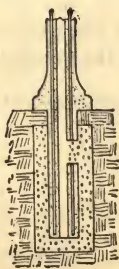


Design No. 1571

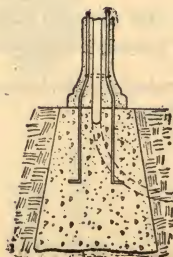
### Base Construction



Bolting Spider  
Base



Precast Butt  
Base

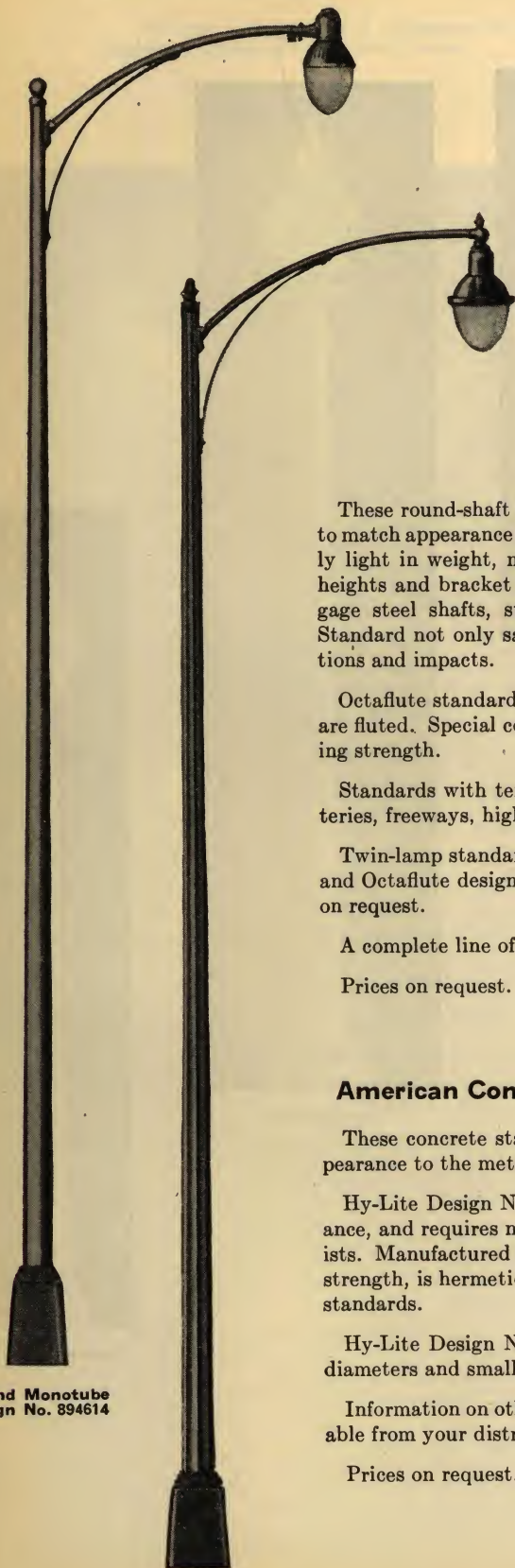


Extended Rod  
Base

Bulletins Giving Complete Information Gladly  
Furnished on Application



## Union Metal Heavy Duty Steel Lighting Standards for Pendent Luminaires



Round Monotube  
Design No. 894614

Octaflute Monotube  
Design No. 894615

These round-shaft Monotube standards with four to eight foot brackets are designed to match appearance and performance of today's traffic safety luminaires. Comparatively light in weight, making handling and erection of shaft relatively easy. Mounting heights and bracket lengths conform to I.E.S. code requirements. Cold-rolled No. 11 gage steel shafts, strong castings, welded-on fittings. Fabricated sheet-steel base. Standard not only safely supports the luminaire, but also absorbs severe traffic vibrations and impacts.

Octaflute standards are constructed in same fashion as round standards, except poles are fluted. Special cold-rolled process provides sharp fluted corners, materially increasing strength.

Standards with ten to eighteen foot brackets, especially suited for use on traffic arteries, freeways, highways, etc., can also be furnished.

Twin-lamp standards with two opposing bracket arms can be furnished in both round and Octaflute designs. Information on any other type of pole desired will be furnished on request.

A complete line of pole accessories is available. Ask your distributor for details.

Prices on request.

## American Concrete Hy-Lite Standards for Pendant Luminaires

These concrete standards with four to eight foot brackets are similar in general appearance to the metal standards illustrated.

Hy-Lite Design No. 655 is strong, long-lasting, easy to install, attractive in appearance, and requires no painting. Meets recommendations of street and highway specialists. Manufactured from ageless granite. Steel reinforcing cage, which provides tensile strength, is hermetically sealed in standard. Finest quality cement meets all A.S.T.M. standards.

Hy-Lite Design No. 609 and 610 differ from Design No. 655 by having smaller pole diameters and smaller foundation dimensions, thus reducing the cost.

Information on other designs, twin-bracket arrangements, pole accessories, etc., available from your distributor.

Prices on request.

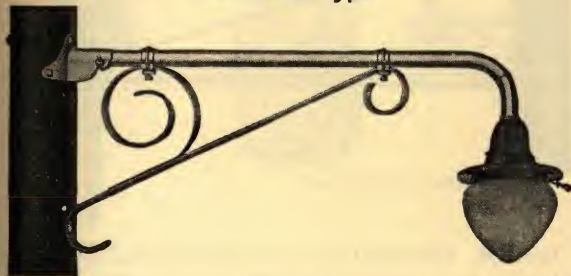


## Hubbard Street Hood Brackets

Hot Galvanized

Luminaires and mounting bolts are not included and must be ordered separately.

## Bent Arm Type



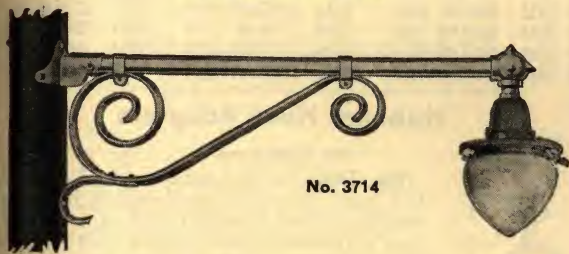
No. 23710

By interchanging scrolls, pole plates, pipes, and clips, practically any form of bent arm type bracket desired may be assembled.

Made of 1¼-inch pipe. Pipe thread attachment, 1¼ inches. Extension from pole, 48 inches.

Assembly No.	Per 100	Pole Plate No.	Pipe No.	Scroll No.	Scroll Clip No.	End Fitting No.	Ship. Wt. Lb. per 100
23710	\$1090.00	3901	23518	4550	3691	....	2625
23711	1120.00	3907	23518	4550	3691	....	2695

## Straight Arm Type

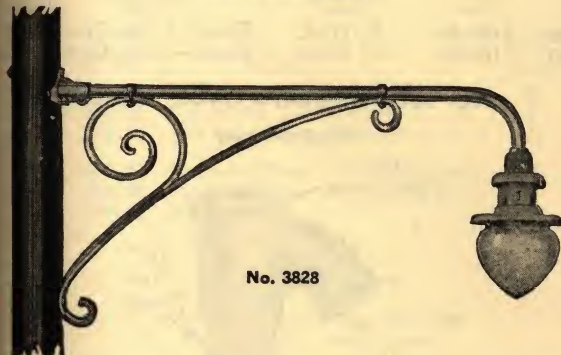


No. 3714

Made of 1¼-inch pipe. Pipe thread attachment, 1¼ inches. Extension from pole, 48 inches.

3714	\$1215.00	3901	23505	4556	3691	3386	2780
3716	1245.00	3907	23505	4556	3691	3386	2850

## Municipal Type



No. 3828

Assembly No.	Per 100	Extension from Pole In.	Nom. Diam. In.	Pipe Thrd. Attach. In.	Pole Plate No.	Pipe No.	Scroll No.	Scroll Clip No.	Ship. Wt. Lb. per 100
3804	\$1435.00	48	1¼	1¼	4752	23618	4581	3696	2970
3808	1975.00	96	1¼	1¼	4752	23620	4583	3696	4620
3824	2035.00	48	2	2	4755	23625½	4583½	3697	4400
3828	2730.00	96	2	2	4755	23627	4585	3697	7000

## Hubbard Upsweep Street Hood Brackets

Hot Galvanized



Made of 1¼-inch and 2-inch pipe bent to a graceful upsweep to obtain greater road clearance.

The type with the Hubbard Levelite end fitting allows an adjustment of 17° in any direction from the vertical for leveling the luminaire, which is permanently locked in place after adjustment.

## Levelite Adjustable End Fitting Type

No.	Per 100	Extension From Pole, Ft.	DIMENSIONS, INCHES			Approx. Ship. Wt. Lb. per 100
			Bolt Spacing	Up-Lift	Pipe Size	
22654	\$2065.00	4	28	14	1¼	2970
22656	2510.00	6	36	16	1¼	3895
22658	2730.00	8	44	18	1¼	4825
22674	3030.00	4	28	14	2	3932
22676	3380.00	6	36	16	2	4998
22678	3730.00	8	44	18	2	6204
22680	4080.00	10	52	20	2	8013
22682	4430.00	12	60	20	2	9820

## Rigid End Fitting Type

No.	Per 100	Extension From Pole, Ft.	Bolt Spacing	Up-Lift	Pipe Size	Approx. Ship. Wt. Lb. per 100
23654	\$1625.00	4	28	14	1¼	2970
23656	2070.00	6	36	16	1¼	3895
23658	2290.00	8	44	18	1¼	4825
23674	2490.00	4	28	14	2	3932
23676	2840.00	6	36	16	2	4998
23678	3190.00	8	44	18	2	6204
23680	3540.00	10	52	20	2	8013
23682	3890.00	12	60	20	2	9820

## No. 3303 Hubbard Spear Point Rigid End Fittings



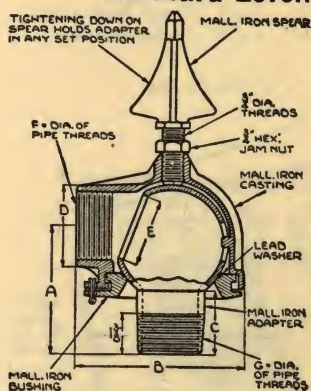
Durable and decorative.

Thread for attachment to 1¼-inch pipe and for 1¼-inch luminaire attachment.

Shipping weight per 100, 300 pounds.

No. 3303 ..... per 100 \$250.00

## Hubbard Levelite End Fittings



Designed to provide a much needed flexibility on street lighting installations.

The ball and socket movement is sealed from moisture by a lead gasket and rigid setting of position is maintained by tightening the spear-head bolt and lock nut.

The ball is prevented from rotation in the socket while attaching the luminaire by a lug.

An adjustment of 17° from vertical, in any direction, is possible.

No.	Per 100	DIMENSIONS, INCHES							Approx. Ship. Wt. Lb. per 100
		A	B	C	D	E	F	G	
3279	\$690.00	3¼	4¼	2	2¼	1¼	1¼	1¼	563
3282	890.00	4¼	5¼	2½	2¾	2¾	2	2	944



## Hubbard Presteel Trolley Mast Arms

PATENTED

## Type 28—Chain Operated

Hot Galvanized



Carriage on arm is operated by a continuous bronze chain which is protected by a 12-gage steel arm housing. All movable parts equipped with brass bushings. Tension on chain is provided for by rod and thumb screw at pole end. Sprocket mechanism, consisting of crankshaft and sprocket in movable frame, operates freely under varying conditions.

A non-ferrous sprocket wheel is constructed with teeth specially formed to follow the chain. Locking device holds mechanism against any movement from undesirable sources.

Chain is pre-stretched to 175 pounds. Chain rides in guides which have been placed at top of carriage.

Pipe thread attachment,  $\frac{3}{4}$  inch.

No.	3606	3608	3610	3612	3614	3616
Per 100	\$2080.	2300.	2590.	2865.	3140.	3510.
Length, ft.	6	8	10	12	14	16
Ship. Wt. per 100	3800	4500	5200	5900	6600	7300

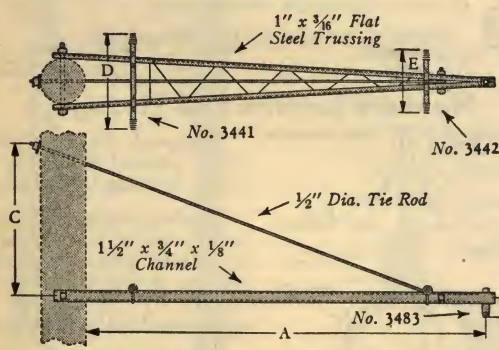
## Type 29—Rod Operated

The main difference between Type 29 and Type 28 arms is that the chain mechanism is replaced by a rod. To pull lamp toward pole, rod is lifted out of gravity lock by its handle and drawn out of arm housing. This operation reversed moves lamp forward again, locking it in place. Pole mounting bolts are not included.

No.	3406	3408	3410	3412	3414	3416
Per 100	\$1800.	2060.	2200.	2500.	2900.	3320.
Length, ft.	6	8	10	12	14	16
Ship. Wt. per 100	3800	4500	5400	6200	7200	7900

## Type 34 Hubbard Truss Type Mast Arms

Hot Galvanized

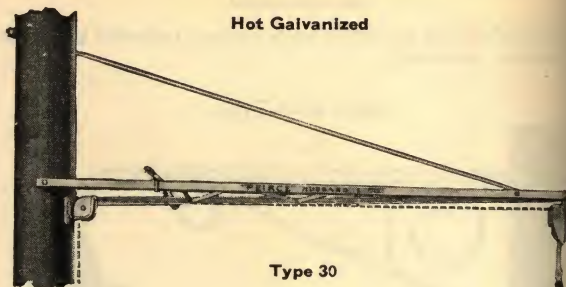


Type No. 34

No.	Per 100	Approx. Exten- sion A Feet	Pipe Thread Attach- ment Size, In.	DIMENSIONS, IN.					Approx. Ship. Wt. Lb. per 100
				B	C	D	E		
3519	\$1275.00	6	$\frac{3}{4}$	21 $\frac{1}{2}$	30	18	14	3100	
3520	1540.00	8	$\frac{3}{4}$	21 $\frac{1}{2}$	36	18	14	3700	
3521	1840.00	10	$\frac{3}{4}$	21 $\frac{1}{2}$	42	18	14	4400	
3522	2180.00	12	$\frac{3}{4}$	21 $\frac{1}{2}$	48	18	14	5200	
3523	2555.00	14	$\frac{3}{4}$	21 $\frac{1}{2}$	54	18	14	6100	
3524	2960.00	16	$\frac{3}{4}$	21 $\frac{1}{2}$	60	18	14	7100	
3525	3370.00	18	$\frac{3}{4}$	21 $\frac{1}{2}$	66	18	14	8100	

## Hubbard Truss Type Mast Arms

Hot Galvanized



TYPE 30. Furnished with two sleet-proof pulleys. The end pulley is the interlocking type which supports luminaire in position without putting tension on the chain.

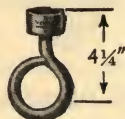
TYPE 31. Same as Type 30 except for outer end pulley.

TYPE 33. Equipped with flexible mounting brass stud with  $\frac{3}{4}$ -inch pipe threads. Fits any average diameter pole.

Approx. Exten- sion Feet No.	Type 30 —Lock Pulley—			Type 31 —Standard Pulley—			Type 33 —Flexible Mounting—		
	Per 100	Ship. Wt. Lb. per 100		No.	Per 100	Ship. Wt. Lb. per 100	No.	Per 100	Ship. Wt. Lb. per 100
6	3526	\$1760.00	4180	3506	\$1490.00	3850	3546	\$1305.00	3300
8	3528	2025.00	4840	3508	1755.00	4510	3548	1570.00	3960
10	3530	2325.00	5610	3510	2055.00	5280	3550	1870.00	4730
12	3532	2665.00	6490	3512	2395.00	6160	3552	2210.00	5610
14	3534	3040.00	7480	3514	2770.00	7150	3554	2585.00	6600
16	3536	3445.00	8580	3516	3175.00	8250	3556	2990.00	7700
18	3538	3855.00	9680	3518	3585.00	9350	3557	3400.00	8800

## Hubbard Hook Adapters

Hot Galvanized

No. 3340  
No. 3341

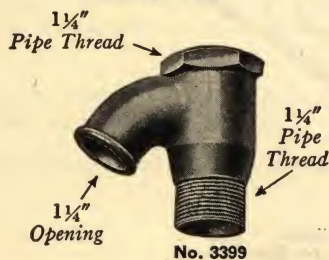
No. 3340 is a hook adapter used either on the mast arm stud for hanging insulators similar to Nos. 1504 and 1534, or on the bottom of insulators such as No. 1524 for hanging the lamp. The pipe cap has standard  $\frac{3}{4}$ -inch pipe thread and the hook is formed to allow the entrance of  $\frac{1}{2}$ -inch stock or smaller. Inside diameter of the hook is  $1\frac{1}{8}$  inches.

No. 3341 is similar to No. 3340 except that the pipe cap is tapped for  $1\frac{1}{4}$ -inch pipe thread.

No.	Per 100	Hook Attachment Inches	Lamp Attachment Inches	Approx. Ship. Wt. Lb. per 100
3340	\$100.00	$\frac{3}{4}$ Thrd.	Hook— $\frac{1}{2}$ -In. Open.	67
3341	100.00	$1\frac{1}{4}$ Thrd.	Hook— $\frac{1}{2}$ -In. Open.	78

## No. 3399 Hubbard Cable Inlets

Hot Galvanized



Used when an internally wired Luminaire is used to replace an externally wired arm or bracket.

No.	Per 100	Nom. Diam. of Pipe Used on Inches	Nom. Diam. Thread for Luminaire Inches	Approx. Ship. Wt. Lb. per 100
3399	\$250.00	$1\frac{1}{4}$	$1\frac{1}{4}$	185

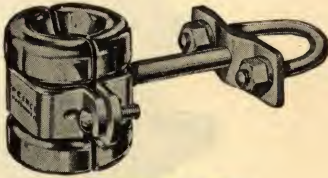


## Hubbard Lamp Lead Brackets

Hot Galvanized



No. 1660  
With Lag Screw



No. 157 With U-Bolt



No. 174 With Plate

All brackets shown above are furnished with plate, lag screw, U-bolt or stud in accordance with the listings below.

Types No. 157 through No. 164 have a split insulator which allows the insertion of lamp heads without threading. Nos. 416 through 419 are of similar design.

### With Insulator Shown on No. 157

Wire Hole Adjustment,  $\frac{1}{2}$  to  $1\frac{1}{2}$  Inches

No.	With Insulators per 100	Type of Attachment	Extension from Base Inches	Ship. Wt. Lb. per 100
157	\$323.56	U-Bolt for $1\frac{1}{4}$ -Inch Pipe.....	5	280
158	\$338.79	U-Bolt for 2-Inch Pipe.....	5	285
163	\$321.35	$\frac{1}{2}$ x 3-Inch Lag Screw.....	5	275
163A	\$321.35	$\frac{5}{8}$ -Inch Diam. x $\frac{1}{16}$ -Inch Stud...	5	275
163B	\$321.35	$\frac{1}{2}$ -Inch Diam. x $2\frac{1}{2}$ -Inch Stud...	5	285
164	\$323.56	Plate.....	5	330

### With Insulator Shown on No. 174

Wire Hole,  $1\frac{1}{2}$  x  $1\frac{1}{2}$  Inches

No.	With Insulators per 100	Type of Attachment	Extension from Base Inches	Ship. Wt. Lb. per 100
133	\$233.80	U-Bolt for $1\frac{1}{4}$ -Inch Pipe.....	5	300
134	\$249.40	U-Bolt for 2-Inch Pipe.....	5	305
173	\$208.53	$\frac{1}{2}$ x 3-Inch Lag Screw.....	5	300
173A	\$208.53	$\frac{5}{8}$ -Inch Diam. x $\frac{3}{4}$ -Inch Stud....	5	300
173B	\$208.53	$\frac{1}{2}$ -Inch Diam. x $2\frac{1}{2}$ -Inch Stud...	5	300
174	\$208.53	Plate.....	5	300

### Wood Pole Type

With Insulator Shown on No. 1660  
Diameter Wire Hole, 1 Inch

No.	1640	1650	1660	1662
Extension..... inches	$3\frac{1}{2}$	$3\frac{1}{2}$	$5\frac{1}{2}$	5
Attachment Screw.....	Galv.	*	Lag	Stud
Ship. Wt. per 100.... pounds	220	220	265	265

\*No. 22x2-inch Everdur screw.

Prices upon application.

## Hubbard Insulated Lamp Hangers

Hot Galvanized

With Suspension Type Insulators



No. 1504



No. 1505



No. 1514



No. 1524

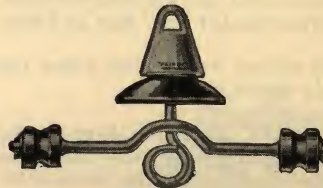
No. 1504. A standard 6000-volt metal cap insulator with safety hook arrangement for locking arc lamp in place.

No. 1505. Similar to No. 1504 except that clevis with  $\frac{3}{4}$ -inch opening replaces safety hook.

No. 1514. Furnished with hook attachment for the lamp. For making attachments to a  $\frac{3}{4}$ -inch stud.

No. 1524. Similar to No. 1514 except that lamp attachment is a  $\frac{3}{4}$ -inch stud.

No.	Per 100	Hanger Attachment Inches	Lamp Attachment Inches	Ship. Wt. Lb. per 100
1504	\$675.00	$\frac{13}{16}$ Hole	Safety Hook— $\frac{1}{2}$ " Opening..	360
1505	\$675.00	$\frac{13}{16}$ Hole	Clevis— $\frac{3}{4}$ " Opening.....	380
1514	\$675.00	$\frac{3}{4}$ Thrd.	Hook— $\frac{1}{2}$ " Opening.....	360
1524	\$675.00	$\frac{3}{4}$ Thrd.	$\frac{3}{4}$ "—Pipe Thread.....	320



No. 1534

### With Spreaders

Nos. 1515 and 1516. Suspension insulators with channel spreaders.

Nos. 1534 and 1544. Combination spreaders and suspension insulators with hook attachment for the luminaire.

1515	\$790.00	$\frac{13}{16}$ Hole	Clevis $\frac{3}{4}$ " Opening.....	480
1516	790.00	$\frac{3}{4}$ Thrd.	Clevis— $\frac{3}{4}$ " Opening.....	530
1534	800.00	$\frac{13}{16}$ Hole	Hook— $\frac{1}{2}$ " Opening.....	575
1544	800.00	$\frac{3}{4}$ Thrd.	Hook— $\frac{1}{2}$ " Opening.....	585



No. 1591

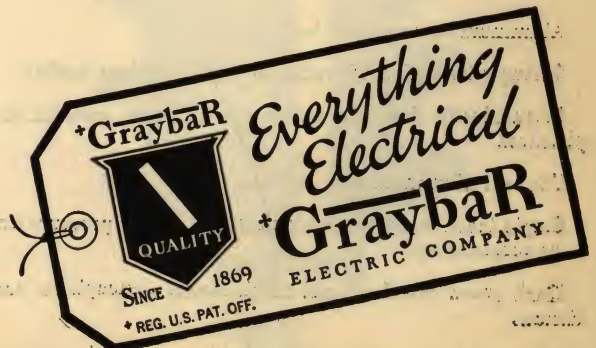
### With Pin Type Insulators

Consists of a 6600-volt pin type insulator fitted with a cap for the mast arm attachment and a fitting for the lamp attachment.



No. 1592

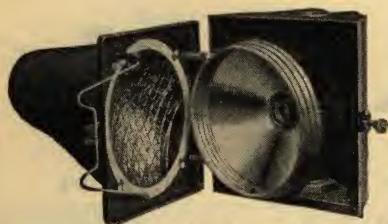
1591	\$350.00	$\frac{3}{4}$ Thrd.	$\frac{3}{4}$ " Pipe Thread.....	355
1592	350.00	$\frac{3}{4}$ Thrd.	Hook— $\frac{1}{2}$ " Opening.....	370





## G-E Traffic Signals

## Optical Units



Optical Unit with Reflector Swung Open

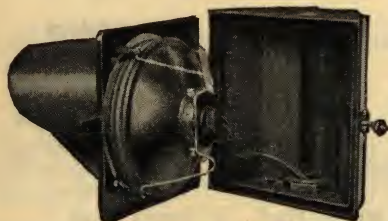
General Electric traffic signals all use the same interchangeable high efficiency optical unit.

The reflector is of high quality silvered glass protected with a coating of electrolytically deposited copper. The design is phantom-proof, thus eliminating the illusion that the signal is lighted which sometimes occurs when the sun is shining directly into a traffic signal.

Eight-inch lens is made according to I. T. E. specifications. The convex outer surface is smooth to prevent accumulation of dirt or snow, while prisms, designed to distribute the light outward and downward into the field of vision, are on the concave inner surface sealed from dust and dirt.

Channel shaped extruded rubber lens gasket keeps the entire assembly permanently dust-tight.

Fixed focus lamp socket insures the signal always being in correct focus. All traffic signal lamps today have the same accurate light center position, eliminating the need for adjustable sockets.



Optical Unit with Reflector Closed Against Lens

Aluminum visor shields lens.

Spring wire bail holds reflector firmly against gasket.

Scientifically designed reflector eliminates internal sun phantom.

Die cast aluminum door for long life.

Single latch screw provides adequate gasket pressure and easy accessibility.

Dark green baked enamel finish resists atmospheric conditions.

Combined socket and reflector holder assures that optical system is always in proper adjustment.

## Fixed Type



Three-Color, 4-Way Fixed Type, Span Wire Mounted

G-E fixed type signals have a light but strong aluminum framework which withstands shocks and minimizes the strain on span wires and mast arms. Like the adjustable type, the fixed signal doors are accurately die-cast from aluminum. The exact forming of the doors makes them easily interchangeable after accidents. The corner bars are held firmly in place by large screws and are shaped to form seats with the top and bottom castings for the felt gaskets against which the optical units are clamped.

The complete General Electric optical unit with its high candlepower, phantom-proof characteristics is used in the fixed signal. Since the signal door forms part of the optical unit, the whole assembly can easily be unhinged from the housing and moved to any desired new location. This flexibility is a great advantage when either the framework or an optical unit is damaged from accident. The hinge and latch lugs are solidly riveted to the corner bars.

The signals may be suspended from a span wire as illustrated, or they may be hung from mast arms or mounted on poles. Standard span wire and mast arm hangers and post top adapters are available, as well as ornamental pinnacles for the post type and base floodlights for the suspension type.

For streets which do not intersect at right angles, adjustable signals are recommended.

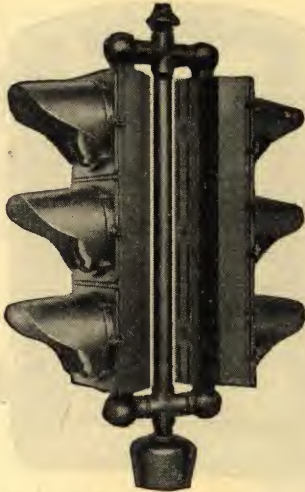
## Important Features

1. High candlepower, phantom-proof distribution through wide visual angle to reduce confusion and accidents.
2. Strong and light for long life of signals, span wires, and mast arms.
3. Fixed focus correct for all traffic signal lamps—cannot get out of adjustment.
4. Attractive, compact appearance with smooth painted finish.

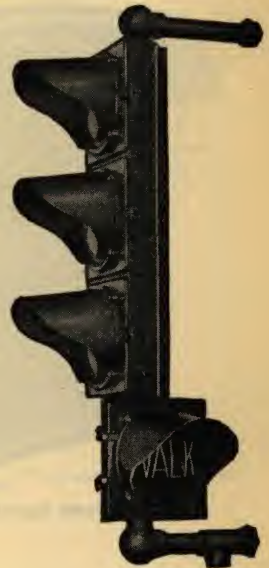


## G-E Traffic Signals

### Adjustable Type



Three-Color, 2-Way Steel Post  
Top Adjustable Signal



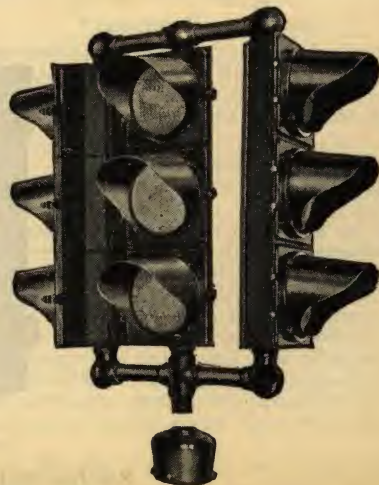
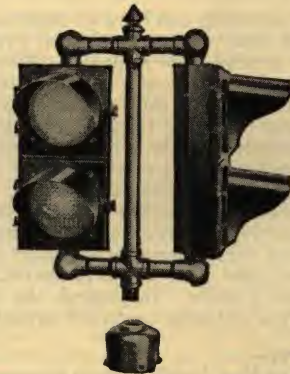
G-E traffic signals are designed to meet the demands of all traffic conditions and to comply fully with the specifications of the Institute of Traffic Engineers.

The adjustable signal consists of single sections which are joined together by means of clamping plates and short bolts to form an attractive and highly efficient signal assembly. Each section has a strong weatherproof die-cast housing in which is mounted the famous General Electric optical unit.

The housing is strong so as to withstand the shocks of traffic accidents, and the light weight facilitates suspension mounting. These qualities mean low maintenance and replacement costs and save the time and expense of frequent repairs.

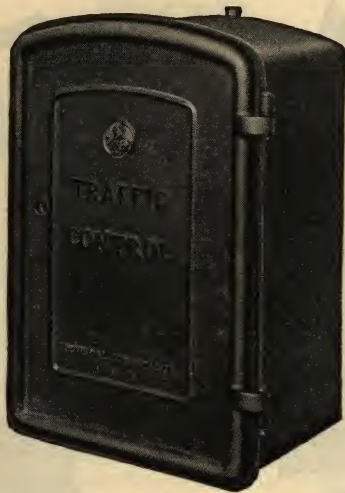
Each signal may have any desired number of complete sections, and only a small open-end wrench is required to add or subtract these units. The clamping device for holding the sections together consists of two flat plates through which three short bolts are passed. A large hole through the center of the plates provides plenty of room for wiring.

Two orienting bosses are provided so that the signals are perfectly aligned. The bosses can be removed so that the sections may be rotated with respect to each other. This method of assembling the signals has the advantage over tie rods or other commonly used arrangements in that it is not necessary to disturb the original signal if it is desired to add a walk light or arrow signal. New tie rods are not required, and the change is much more easily made with the short bolts and clamping plates.

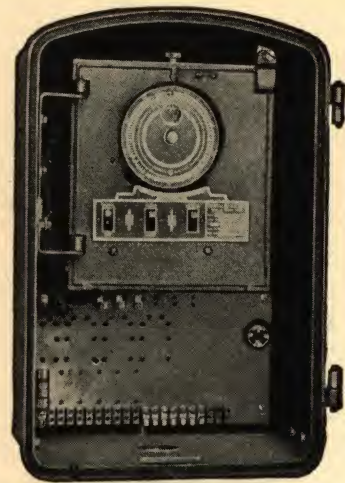




## G-E Type DH Traffic Signal Controllers



Type DH Traffic Signal Controller Cabinet

Noninterconnected Type DH Controller  
for 2-Street Intersection

The Type DH traffic controller is a simple, flexible, economical, and scientifically designed equipment for the control of traffic signals. It can be used equally well for operating isolated intersections or interconnected systems. It is the logical answer to modern traffic control problems.

The Type DH controller can have as many as 15 signal circuits and 16 color intervals per total time cycle and can be arranged for any desired color sequence. The length of any interval is quickly changed from a minimum of 2 per cent up to any desired percentage of the total time cycle. The total time cycle itself can be varied from 30 seconds to 2 minutes. Relays may be included for the remote control of shutdown, flashing caution, or emergency all-red signals. A manual controller may be added for personalized control. If it is desired to interconnect the system, either single or triple-automatic reset may be employed for co-ordinated timing of the intersections. A remote cycle change attachment is available for increasing the total time cycle length of the entire system during periods of heavy traffic. In general, the Type D is the most adaptable type of traffic controller available.

**Note Particularly—**

**No. 1**—Constant time keeping speed is assured by the synchronous motor.

**No. 2**—The total length of the time cycle is determined by the size of the gear on the end of the timing dial shaft.

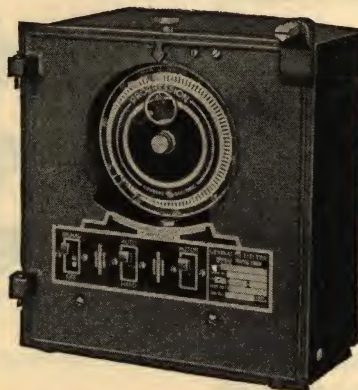
**No. 3**—The percentage of time of the total time cycle allotted to each interval is determined by the spacing of the keys in the front of the dial.

**No. 4**—The particular color sequence desired is determined by the particular segments which have been broken out of the Textolite drum cams.

**Cabinet**

The Type DH traffic controller is enclosed in an attractive weatherproof cast-aluminum cabinet. Pole clamps for metal pole or pole plates for wooden pole mounting are included. A lock and key make the installation tamper-proof. The finish is an attractive green that blends well with surroundings.

The equipment inside the cabinet consists principally of two parts, the timer and the panel. The timer hangs on a bracket so that it can be swung out of the cabinet for inspection purposes while in operation. All connections to the timer are made by means of a jack connection block. By disconnecting the jack connection block and lifting the timer off its supporting bracket, the entire timer may be removed from the cabinet and another timer substituted, if it is desired to make any major changes. The panel is rigidly mounted in the lower part of the cabinet and is used for mounting connection terminals, switches, relays, etc.



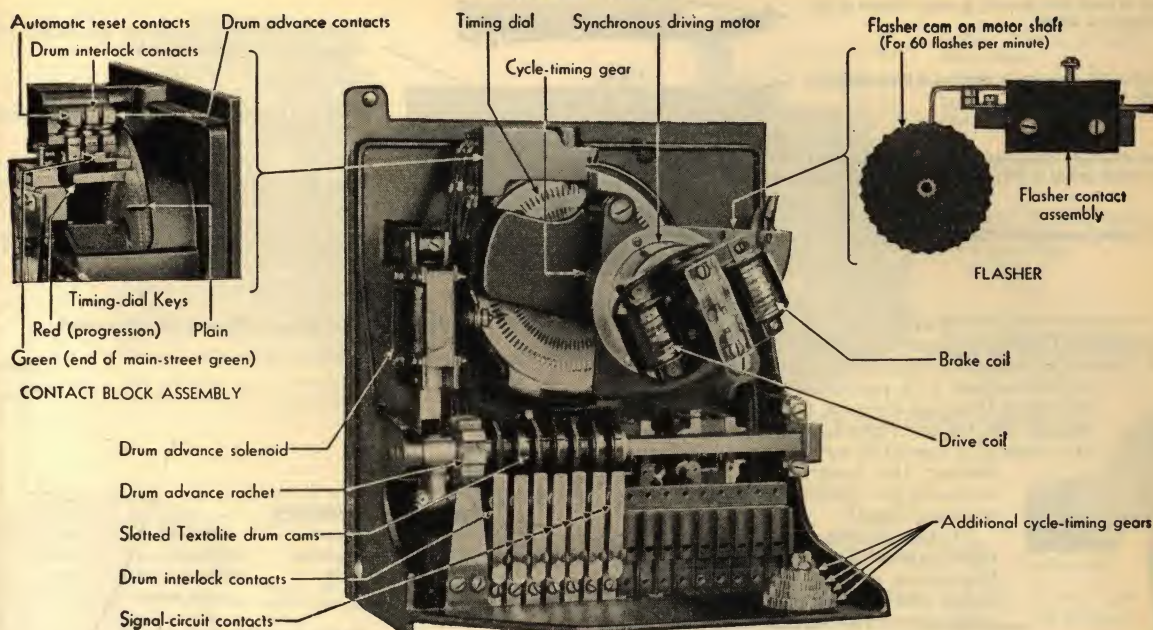
Front of Type D Timer

Note how the timing adjustments and basic control switches are conveniently grouped for quick and easy operation.



## G-E Type DH Traffic Signal Controllers

### Type DH Timer



**Interior of 6-Circuit Timer**

Note simplicity of construction and full accessibility for inspection and servicing.

The Type DH timer is the basic element of this complete line of controllers. It consists essentially of four fundamental parts—(1) the motor, (2) the timing dial, (3) the solenoid, and (4) the drum and contact assembly.

#### Motor

A telechron synchronous motor provides the driving power. Because the motor is of synchronous design, it is possible to keep adjacent intersections in step with each other according to any predetermined plan without the necessity of interconnecting cable. Sealed-in lubrication is provided for the life of the motor. The power consumption is only 6 watts. The pinion gear on the motor shaft revolves at 2 rpm.

#### Timing Dial

The timing dial on the front of the timer is driven at one revolution per total time cycle by a single spur gear which is mounted on the end of the timing dial shaft and which meshes with the pinion gear on the motor shaft. The total time cycle of the timer is determined by the size of this single spur gear. The motor is swung out of the way temporarily to make this simple adjustment. Standard cycle timing gears are available in 5-second increments from 30 to 90 seconds and in 10-second increments from 90 to 120 seconds. Any five of these gears will be furnished with each controller.

On the front face of the timing dial are 100 slots dividing the total time cycle into 1 per cent steps. Keys which are inserted in these slots divide the total time cycle into various intervals. The total time cycle may thus be split into intervals which take up as much of the total time cycle as is desired. As the dial revolves, these keys pass through the zero position which is marked by an arrow in the casting directly above the timing dial. They momentarily close the drum advance contacts and the impulse produced by the closing of these contacts energizes the solenoid which, in turn, raises the solenoid armature. When the impulse is cut off, the armature falls and the ratchet on the end of the drum assembly is turned forward one position.

#### Drum and Contact Assembly

On the drum shaft are slotted discs of Textolite, one for each contact. Signal contact arms ride on the edges of the slotted drum cams, and open or close the various circuits as the drum advances, according to the way the cams are broken out. In so doing, they switch the signal lamps on or off. Six signal contacts are furnished as a minimum, but provision is made for adding up to a total of 15 signal circuits. The large 10-ampere contacts are made from fine sil-

ver and are fastened on a rigid arm. Constant pressure is maintained on the contacts by means of a helical spring. Because of the hinge-type design, there are no pigtail connections or leaf springs to become broken or lose their tension. This timer has ample capacity for extra signal circuits, walk lights, arrows, bells, etc.

Standard ratchets and corresponding slotted Textolite cams are available for 6, 9, 12, or 16 intervals. If a color sequence is desired with an intermediate number of intervals, this is achieved by making two or more succeeding intervals on the drum assembly the same. The total number of keys in the outside row of slots in the timing dial must be the same as the number of intervals on the ratchet of the drum assembly, in order that the dial and drum will keep in step.

As a further assurance that the timing dial and drum assembly always will be in step, the first contact on the drum assembly is used as an interlock. When the drum assembly is turned to mainstreet green, the interlock contact opens, thus making all of the short timing keys on the timing dial inoperative. However, the special green key inserted at the end of the main-street green interval is arranged so that it will operate the solenoid even with the interlock open. Thus, the drum assembly will hold up on main-street green until released by the green key, at which time all parts of the timer are in step.

#### Flashing Mechanism

A flashing mechanism for producing 60 flashes per minute, regardless of the time cycle on which the controller is operating, can be mounted on the motor support. The large fine silver contacts provide full 10-ampere a.c. flashing duty rating.

#### Switches

On the face of the timer are three tumbler switches. The first is used for signal shutdown. The motor, however, continues to operate, so that the signals will be in step with adjacent intersections when the signals are turned on again. The second is used when it is desired to operate the controller manually for special circumstances, such as around schoolhouses, etc., where the personal supervision of a traffic officer is required during certain periods. The third switch is for control of the motor. By means of this third switch, it is possible to start noninterconnected controllers operating in a definite relationship to each other. By virtue of the synchronous motor drive, they will remain in that relationship.

Just below the dial is an indicator which automatically shows on what total time cycle the timer is operating.



## G-E Type DH Traffic Signal Controllers

Removal of timer from housing is easy, because of this jack connection block.

The hand-switch accessory is attached to these terminals (standard equipment).

Transfer terminals (standard equipment) provide for flashing either amber or red, as preferred, on the cross street.

Power - supply terminals - "hot" side fused.



Excellent insulation and long life are features of the strong, molded Textolite panel.

Transfer to flashing operation is made with a convenient push-pull switch.

Relay jacks installed here when required. All relays are jack-mounted for easy removal.

These heavy brass terminals are easy to wire. They are furnished with soldering lugs. Insulation barriers are between the terminal blocks.

The Equipment Panel

### Panel

The molded Textolite panel is mounted in the control cabinet below the timer. A standard panel is furnished in all controllers with provision for accommodating up to 15 signal circuits, flash and shutdown relays, etc. On the right-hand side of the panel is a manually operated switch used for transferring the controller from regular stop-and-go operation to a flashing warning signal.



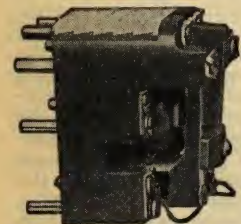
Manual Control

At top of the panel are transfer terminals which can be arranged so that when the controller is flashing, either the cross-street amber or the cross-street red signals will be flashing together with the main-street amber signals.

On the upper left-hand corner of the panel are terminals for attaching a manual control. With this accessory, a traffic officer can operate the signals after flipping the automatic to manual transfer switch on the front of the timer. It consists of a simple grip switch enclosed in soft vulcanized rubber, with sufficient cord to enable the officer to move about freely and take positions where he can see traffic to best advantage. The sequence of colors is the same as that obtained with automatic timing, the changes being made simply by squeezing the handle. Power terminals for the controller are located on the lower left-hand corner of the panel with the hot side of the line fused. Along the bottom of the panel are terminals for the signal circuits.

### Relays

Relays can be furnished for mounting on the panel for remote control of special features throughout an interconnected system from a central point.



Flash and Shutdown Relay

A remote shutdown relay accomplishes the same purpose as the manual shutdown switch on the face of the timer. Relays for remote control of flash may be used to eliminate the necessity of having policemen assigned to the duty of transferring signals from "stop-and-go" to "flashing" operation each evening and morning. One double-pole relay is required for each two circuits to be flashed. The operation of an all-red emergency fire control indication is accomplished in exactly the same manner as the remote control of flash. In this case, it is likewise necessary to include a double-pole relay for each two red circuits to be operated.

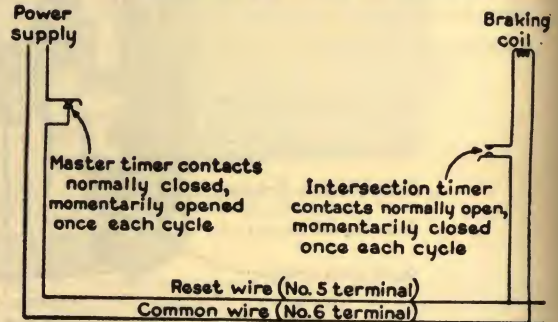


Automatic Time Switch

### Automatic

Time switch control of certain features is used in some cases in preference to manual or remote control. For signal shutdown, the contacts in the time switch itself can be used for shutting down the signal. For time switch operation of flashing amber, it is necessary, in addition to installing the time switch, to also include remote control relays used in the same manner as for remote control of flash.

### Automatic Single Reset Equipment



Wiring Diagram for Single Reset

Automatic single reset equipment in Type DH controllers consists essentially of a pair of normally open contacts, which are momentarily closed once each cycle, plus a braking coil in each of the intersection controllers. The master timer includes a pair of normally closed contacts which are momentarily opened once each cycle. These are connected as shown in the accompanying diagram. The operation is such that, when the braking coil is energized, the timing dial stops until the braking coil is again de-energized by the opening of the master contacts.

In those interconnected controllers which do not have remote cycle change, the braking coil takes the form of a second motor mounted on the same shaft as the driving motor. When this is energized, a torque equal and opposite to that of the main driving motor is applied to the armature, and the motor shaft comes to a dead stop, as well as the timing dial.

With interconnected controllers having remote cycle change, this braking coil takes the form of a magnetically operated clutch which disconnects the motor from the timing dial, thus stopping the dial, although the motor continues to operate.

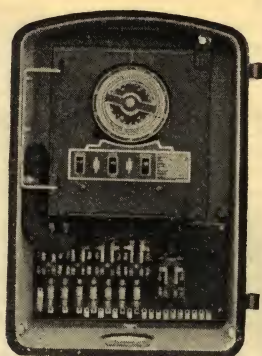
The master timer applies a potential to the interconnecting reset wire, except for a brief instant at the beginning of its own main-street green interval.

A reset key is inserted in the inner row of slots on the timing dial of each timer. This key occupies the zero position on the master timer dial, but is offset on the various intersection timer dials by the amount of time each receiver is supposed to lag the master, expressed as a percentage of the total time cycle that is being used. For example, if an intersection timer were required to lag 15 seconds behind the master on a 60-second total cycle value, its reset key would occupy the 25 per cent lag position.

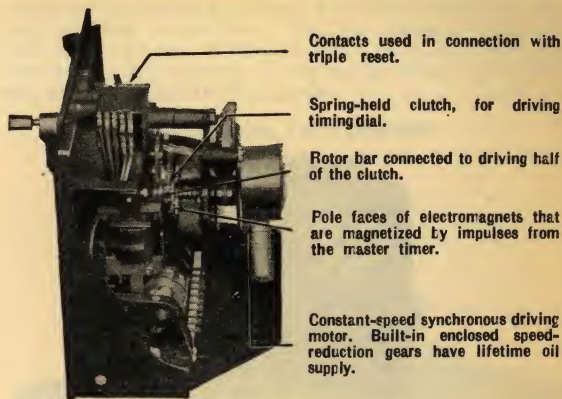
A system equipped for automatic reset will get into step within two cycles after it is started. Any intersection timer that is out-of-step, or that happens to become out-of-step later, will be stopped as soon as its reset key closes its reset contacts, and will remain stopped until the master timer momentarily de-energizes the reset interconnecting conductor. When all timers are in step, the closing of the intersection contacts and the opening of the master contacts occur simultaneously, and all timers, operate without interruption. This system does not require a "dwell" period in each cycle, so that the timing of each cycle and the timing of each color interval is precisely that for which the timer is set.



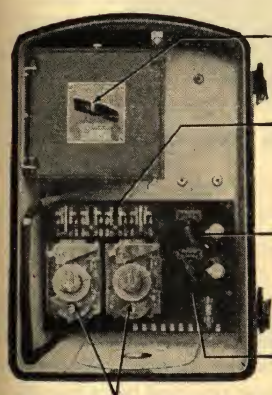
## G-E Type DHR Traffic Signal Controllers



Type DHR Interconnected Synchronous Controller



Interior of Type DHR Controller



Lever for selecting proper total time cycle length for remote-cycle-change system.

Relays for automatic selection of remote-cycle-change and triple-reset timing.

Sequence switch for selecting of long cycle, short cycle, or automatic triple reset.

Reset switch for selection of automatic operation or manual selection of any of the three triple-reset schedules.

Two time switches make it possible to have the selection of all three triple-reset circuits completely automatic when traffic conditions warrant.

## Typical Type DHR Master Controller

To provide a means of handling more traffic per hour, General Electric has developed the Type DHR controller—a timer flexible enough to be adapted to varied conditions.

The Type DHR controller is similar to the Type DH controller, equipped with Type SMY synchronous motor and electric-impulse-operated clutch, to provide control of time cycle from a master controller. Usually equipped with triple reset equipment and flash and shutdown relays.

## Remote Cycle Change

A total time cycle that is of the correct length for average traffic flow may be too short to handle peak conditions during rush hours or icy weather. When traffic becomes heavier vehicles cannot move at the speed for which the system is set, and traffic jams at every intersection. The timing must be lengthened to accommodate the increased volume by lengthening the total time cycle, so that more vehicles can clear the intersection without stopping.

General Electric remote-cycle-change equipment is specially designed to meet this requirement in cases where the volume of vehicles varies considerably during the day. It consists of a master timer, a 2-wire interconnecting cable, and interconnected synchronous controllers.

## Type DHR Master Timer

The master timer sends out impulses by means of a ratchet wheel which alternately opens and closes a pair of contacts. The rate at which these impulses are emitted depends upon the speed of the ratchet, and this speed is determined by a shift lever and a cone of gears. Since the total time cycle is determined by 16 gears, it can be adjusted in 5 or 10-second

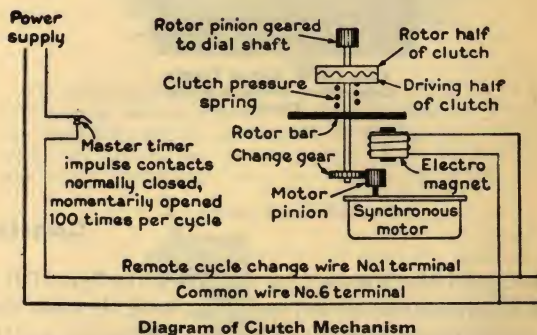


Diagram of Clutch Mechanism

increments between the limits of 30 and 120 seconds. The master timer—with either manual control or automatic time-switch control—can be installed in any central location.

The impulses from the master timer actuate a magnetically controlled clutch in the intersection controllers. This slows down the timing dials without affecting the constant speed characteristics of the synchronous motors. There is no "dwell" period at the end of each cycle.

Diagrammatically the clutch mechanism is shown above.

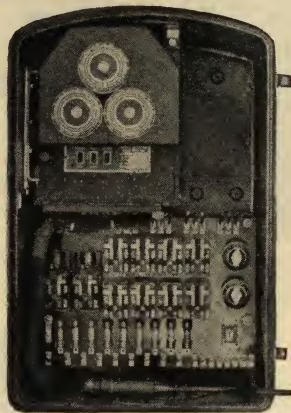
Timing-dial speed is controlled by a simple clutch which is spring-mounted on the end of the rotor shaft and connected to a rotor bar. The rotor shaft is geared to the synchronous motor. As the rotor bar revolves, it passes by the pole face of an electromagnet. Should the magnet be energized, the bar will be moved toward it to open the clutch teeth and prevent the timing dial from turning. If the magnet is de-energized, the rotor bar will be released to re-engage the clutch and revolve the timing dial.

When the magnet is repeatedly energized and de-energized by a series of impulses from the master timer, the timing dial will revolve at a lower speed than if no impulses are present to operate the clutch. When no impulses are being sent out, the intersection timers operate at their conventional speed, which depends upon the size of the time-cycle gear in each timer. Normally, a system will operate at base speed most of the day, the remote cycle change being used only during periods of heavy traffic or wet or icy weather.

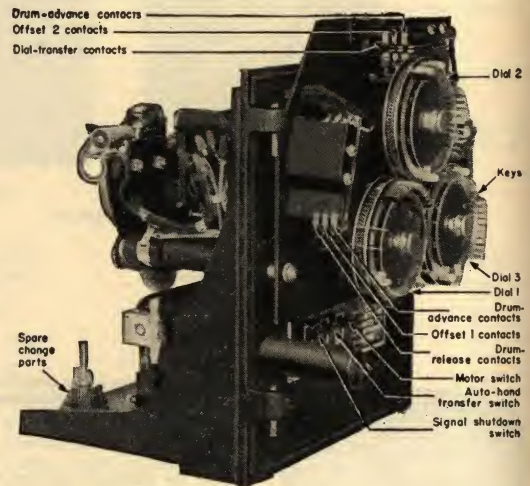
In the interconnected systems, installing remote-cycle-change equipment is simple. Attachments can be made to existing intersection controllers with serial numbers over 19,000 or included in the new Type DH timers.



## G-E Type DHM Triple Dial Controllers



Type DHM, 3-Dial Traffic Controller, without Front Door



Type DHM, 3-Dial Traffic Timer, without Covers

## Construction Details

The Type DHM is essentially the same as the Types DH or DHR in its construction and operation, using the same kind of a driving motor, solenoid and ratchet mechanism, and the same type of drum and contact assembly. It can be furnished either as a noninterconnected or interconnected controller with remote cycle change and triple reset.

The multidial controller contains two or three separate timing dials, each with its own dial contact block. All dials are geared together and rotate simultaneously at the same speed. The dials are driven by one synchronous motor, the speed of rotation depending, as in other controllers, upon the size of the time cycle gear mounted in the timer.

The multidial controller has greater flexibility than a single dial controller for coping with changing traffic conditions. It is extremely useful in straightening out problems both at isolated intersections and in interconnected systems.

If, at some time during the day, conditions change so that main-street traffic increase while cross-street traffic decrease, a different "percentage split" of the total time cycle, making the green interval length correspond to the volume of traffic, is desirable to minimize waiting time on the cross street. This arrangement, with the main-street green lengthened and cross-street green correspondingly shortened, can be set up on Dial No. 2. If a third percentage split is required, it can be set up on Dial No. 3.

Since these different splits can be preset on the dials, then, by means of external switching (manual switches, time switches, or a program drum), the correct percentage split can be selected simply by switching to the dial with the proper lengths of green intervals.

In a complete interconnected system with remote cycle change and triple reset, the use of one or more Type DHM multidial controllers can greatly increase the system's flexibility. For example suppose one had been installed in the system at an intersection where traffic conditions change about the same as those at the isolated intersection just discussed. Here, in addition to using remote cycle change for long and short total time cycles and the triple-reset feature for controlling the "in" and "out" traffic along a main thoroughfare, it is also possible to take care of the change in percentage of cross-street and main-street traffic.

If all the controllers in the interconnected system were multidial controllers, it would be possible to take care of a multiplicity of conditions—practically any of a predetermined nature, because, with the Type DHM, it is possible to switch to any of the three resets when the controller is operating from any dial. It is also possible to switch to any of the dials when using any one of the resets. In other words, the selection of resets is entirely independent electrically from the selection of dials, though some traffic conditions may require both to be changed at the same time.

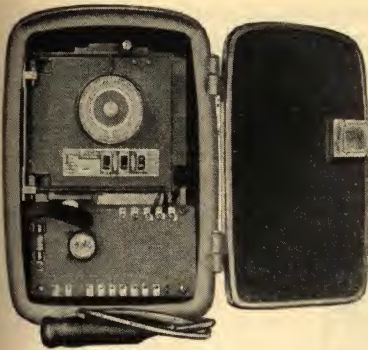
Similarly, it is possible to select different system time cycle lengths by the remote-cycle-change equipment while using any or all of the previously mentioned combinations of dials and resets. This increases the flexibility still more.

Manual or automatic selection of dials can be made along with selection of system resets and system time cycles at the master controller. This is particularly true if more than one multidial controller is used in the system.

If there is only one multidial controller in the system or the Type DHM is to be used as an isolated intersection controller, automatic dial selection can be done locally by time switches.



## G-E Type DJ Traffic Controllers



The Type DJ is a condensed model of the standard Type DH traffic controller. It is especially designed for isolated intersections because it does not contain the space for accessories necessary for interconnected operation. The timer and panel are enclosed in a weatherproof cabinet 16 inches high by 12 inches wide by 8½ inches deep. The

timer is driven by a synchronous motor which provides for progressive traffic movement without requiring interconnecting cable between intersections.

Five gears are furnished, giving a choice in total time cycle of 40, 50, 60, 70, or 80 seconds. Optional gears are available for any cycle lengths between 30 and 180 seconds in 5-second steps, and between 80 and 120 seconds in 10-second steps.

The controller contains six independent signal circuits which can be individually adjusted to give any desired color sequence by breaking out Textolite cam segments.

The lengths of all color intervals can be adjusted to any desired values by moving keys in a calibrated dial in 1 per cent steps.

Manual switches are provided for separate control of the signals, the motor, the flashing operation, and the transfer from automatic to manual operation. When the controller is furnished without flasher contacts, the flash switch becomes a steady caution switch. Terminal changes can be made so that the signals will flash either red or amber to the cross-street with amber to the main-street.

In general, the Type DJ is a flexible, compact controller especially suited to isolated intersections where interconnection is not necessary.

If, however, there is any possibility of future interconnection or future additions of features, such as pedestrian control, the Type DH controller is recommended.

### Triple Reset

A triple reset system should be considered whenever the traffic controlled section of a thoroughfare is quite long and the traffic volume varies greatly in direction during different periods of the day. The equipment consists of a master timer, a 4-wire interconnecting cable, and an intersection receiver timer. Even though the system is similar to a remote cycle change system, triple reset is designed for a different purpose. If the system has both triple reset and remote cycle change, one 5-wire cable is sufficient.

By providing three different schedules of co-ordinated timing, it is possible to move inbound peak traffic, normal traffic, and outbound peak traffic on any arterial street more efficiently. Manual or automatic control can be used to select any one of the three predetermined schedules of green light lag.

During morning traffic hours, the master timer selects the inbound reset that favors movement toward the business and factory area. Green lights are then timed to move inbound traffic faster with but slight delay to the lighter outbound movement.

During the normal traffic part of the day, signals operate on an average sequence to move traffic with smooth, progressive flow in both directions.

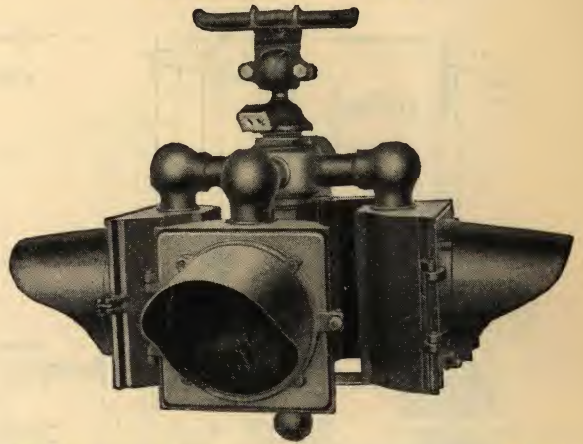
To handle afternoon and early evening peak traffic, the master timer selects the third schedule of co-ordinated timing—a green light timing scheme that speeds up the outbound movement.

The equipment in the master timer is the same as in the intersection timers, with the addition of supervisory contacts and a single-pole, triple-throw switch. In the intersection controllers, the equipment is the same as in the noninterconnected controllers, except that there are three pairs of reset keys—red, white, and yellow—which are so slotted that each key will close only one pair of contacts.

## G-E Traffic Beacons

Beacons are used as a visual warning of danger points to motorists and pedestrians. Brilliant flashes of light from these beacons capture the attention, warning the motorist that caution is necessary. They use the same high efficiency optical unit as G-E traffic signals.

### Adjustable Type Beacons



The adjustable beacon uses one or more of the standard G-E signal section units. These are held by bracket assemblies that can be arranged for turning separate units in whatever directions are required. Can be supplied for mounting from a span wire, mast arm, or post top.

### Fixed Type Beacons



Fixed type beacon uses a rigid frame mounting, giving a warning indication in two, three, or four directions, as may be desired.

Can be supplied for mounting from a span wire, mast arm, or post top.

Red or amber lenses may be used.

### Weatherproof Flasher Mechanisms

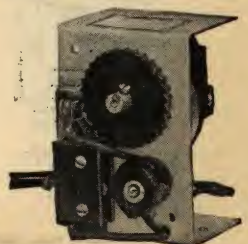


Complete in enclosing case.

Can be mounted on the pole from which the beacon is suspended. This arrangement gives best accessibility for servicing the flasher. A synchronous motor drive is used to operate the same heavy duty flashing contacts used in the G-E Type DH controller.

Fuse protection and a key-operated switch which can be turned without opening the housing are included.

### Special Flasher Mechanisms

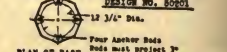
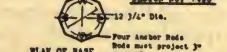
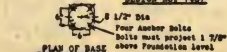
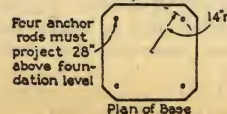
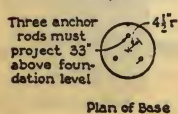
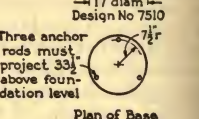
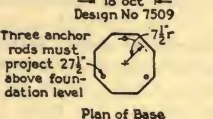
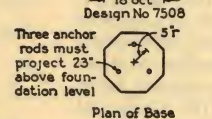
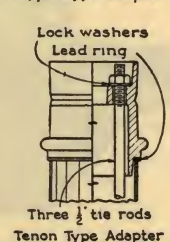
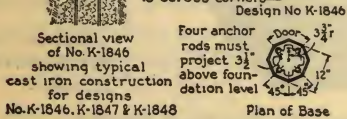
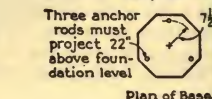
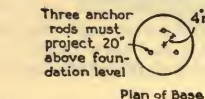
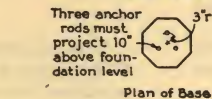
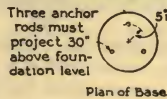
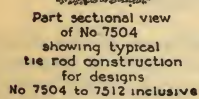


Will fit in the fixed type beacon only. May be used to make an installation complete in one unit.

Radio interference suppressors are included in both flashers.



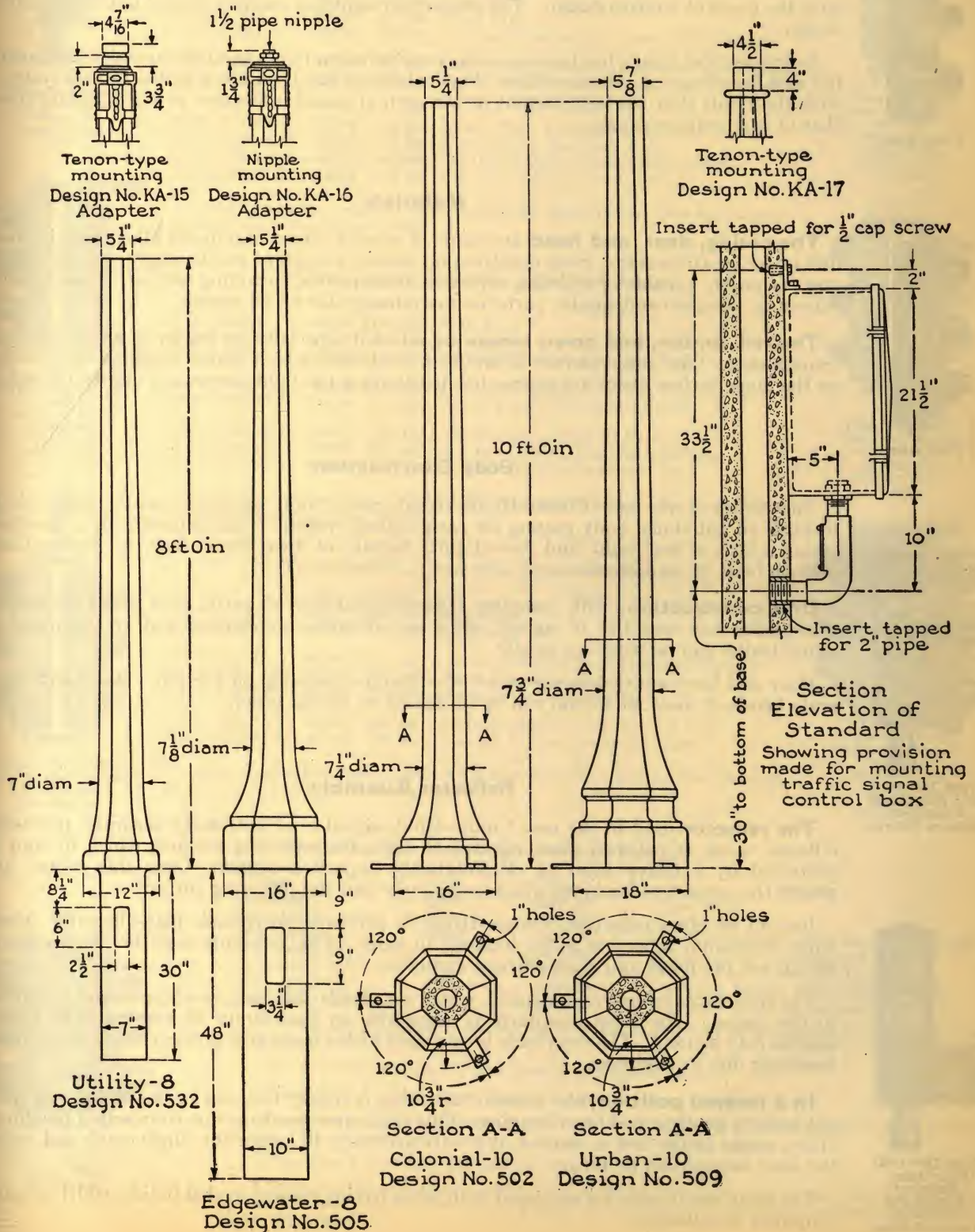
Traffic signal poles are available in a variety of designs constructed of steel or cast iron. One may be chosen which matches or harmonizes with local lighting standards. These poles can have a 4½-inch diameter tenon top to accommodate a slip fitter type of signal or have a pipe nipple mounting.





## American Concrete Traffic Signal Poles

Concrete traffic signal poles are available in a variety of designs. One may be chosen which matches or harmonizes with local lighting standards. These poles can be furnished with 4½-inch diameter tenon top to accommodate a slip fitter type of signal or with a pipe nipple mounting.





## Crouse-Hinds Traffic Signals

## Design



Front View

Crouse-Hinds offers a complete line of newly designed traffic signals which is in keeping with the trend of modern design. The modern straight line motif is carried out in the entire design.

Every detail of design has been carefully considered, not only from the artistic standpoint, but also for efficiency and durability. Particular care has been given to the optical system, with the result that the light output or strength of signal indication is much greater than that of competitive signals.

## Materials

**The casing, door, and hood** are made of special silicon aluminum alloy, cast in steel dies under great pressure. Such construction insures a uniform and homogeneous casting of great strength, capable of resisting corrosive atmospheres, including salt air. Castings are extremely accurate and similar parts are interchangeable on all signals.

**The red, amber, and green lenses** are selected especially for purity of color and high transmission. The outer surface of the lens is smooth, which makes cleaning easy, while on the inner surface there are prisms for distributing the light downward and to the sides.



Rear View

## Body Construction

The bodies of the new Crouse-Hinds signals are of unit sectional construction, which features an individual body casting for each optical system. This insures a rigid, compact casing which is dust-tight and watertight. Signals of two, three, four, or five sections may be built up as desired.

**Unit construction**, with complete interchangeability of parts, is of great benefit to cities using any quantity of signals, since any desired combination and arrangement of signal bodies can be made up locally.

Door and hood are cast in one piece, which saves assembly on the job. Doors with separate hoods of sheet aluminum can be furnished on special order.

## Reflector Assembly

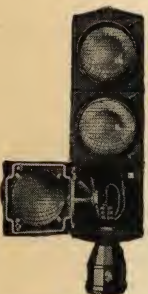
**The reflector** used in the new Crouse-Hinds signal is an extremely accurate, parabolic reflector made of polished glass, silvered to form the reflecting surface, which in turn is protected by a heavy layer of electrolytically-deposited copper. Over this copper are placed the protective backings which completely seal the reflecting surface.

Instead of glass reflectors, Crouse-Hinds is prepared to furnish high-efficiency Alzak finish aluminum reflectors at no increase in price. The reflectors used in Crouse-Hinds signals are the finest and most efficient available.

The reflector is mounted in a spider which also holds the lamp receptacle, and is hinged to the casing. The lamp receptacle is adjustable so that lamps of varying light center lengths may be used. The receptacle is equipped with a lamp grip to prevent the lamps from loosening due to vibration.

**In a normal position**, the reflector assembly is rigidly fastened to the casing and does not have to be disturbed for relamping. This eliminates breakage due to repeated handling. When access to the rear is wanted, it is only necessary to loosen the single catch and swing the door outward on its hinges.

The lamp receptacles are equipped with wires having colored, coded braids, which greatly simplifies installation.

Type TSP-113D  
One Way Signal  
Door Open  
Showing InteriorType TSP-113D  
Door Open,  
Reflector  
Swung Out  
Showing  
Terminal Block



## Crouse-Hinds Adjustable Traffic Signals

## Schedule T

†With Red, Amber, and Green Unlettered Combination Lenses

## \*Three-Section, One-Way Signals

Type	No.	†Each	Mounting
TSO-113D	46404	\$48.00	Without any Mounting Attachments
TSW-113D	42224	53.20	Span Wire
TSM-113D	42225	57.80	Mast Arm
TSV-113D	42230	54.00	Vertical-Bracket Arm, less Pole Clamps
TSH-113D	42231	61.60	Horizontal-Bracket Arm, less Pole Clamps
TSB-113D	42232	69.20	Horizontal-Bracket with Fuse Compartment, less Pole Clamps
TSP-113D UG	42226	54.20	4-Inch Post, Underground Feed
TSP-113D OH	42227	57.60	4-Inch Post, Overhead Feed
TSU-113D UG	42228	49.80	1½-Inch Nipple, Underground Feed
TSU-113D OH	42229	53.20	1½-Inch Nipple, Overhead Feed

\*For two-section signals, deduct \$16 from above prices. For four-section signals, add \$16 to above prices.

## †Three-Section, Two-Way Adjustable Signals

Type	No.	†Each	Mounting
TRW-223D	42286	\$114.00	Span Wire
TRM-223D	42287	118.60	Mast Arm
TRV-223D	42288	116.00	Vertical-Bracket Arm, less Pole Clamps
TTV-223D	42705	116.00	Tandem-Bracket Arm, less Pole Clamps
TRP-223D UG	42289	115.00	4-Inch Post, Underground Feed
TRP-223D OH	42290	119.60	4-Inch Post, Overhead Feed
TRU-223D UG	42293	110.60	1½-Inch Nipple, Underground Feed
TRU-223D OH	42294	115.20	1½-Inch Nipple, Overhead Feed

†For two-section signals, deduct \$32 from above prices. For four-section signals add \$32 to above prices.

## ‡Three-Section, Three-Way Adjustable Signals

Type	No.	†Each	Mounting
TRW-333D	42297	\$169.00	Span Wire
TRM-333D	42298	173.60	Mast Arm
TRV-333D	42299	171.00	Vertical-Bracket Arm, less Pole Clamps
TRP-333D UG	42300	170.00	4-Inch Post, Underground Feed
TRP-333D OH	42301	174.60	4-Inch Post, Overhead Feed
TRU-333D UG	42304	165.60	1½-Inch Nipple, Underground Feed
TRU-333D OH	42305	170.20	1½-Inch Nipple, Overhead Feed

‡For two-section signals, deduct \$48 from the above prices. For four-section signals, add \$48 to above prices.

## §Three-Section, Four-Way Adjustable Signals

Type	No.	†Each	Mounting
TRW-443D	42308	\$224.00	Span Wire
TRM-443D	42309	228.60	Mast Arm
TRV-443D	42310	226.00	Vertical-Bracket Arm, less Pole Clamps
TRP-443D UG	42311	225.00	4-Inch Post, Underground Feed
TRP-443D OH	42312	229.60	4-Inch Post, Overhead Feed
TRU-443D UG	42315	220.60	1½-Inch Nipple, Underground Feed
TRU-443D OH	42316	225.20	1½-Inch Nipple, Overhead Feed

§For two-section signals, deduct \$64 from above prices. For four-section signals, add \$64 to above prices.

Also available in five-way and six-way adjustable signals.

Prices do not include incandescent lamps.

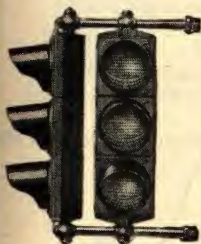
Special detachable hoods not exceeding 8 inches in length will be furnished without extra charge. Hoods exceeding 8 inches in length, add \$3.00 per hood.

¶Price does not include pole clamps.

¶Prices include unlettered lenses in all sections. For each unlettered lens changed to a lettered lens or to an arrow lens, add \$1.00 to the prices. For each lens omitted, deduct \$1.00 from the prices.



Type TSP-113D  
One-Way Signal  
4-Inch Post  
Mounting  
Underground  
Feed



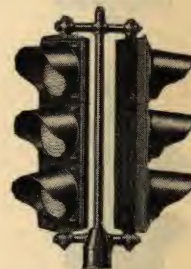
Type TTV-223D  
Two-Way Signal  
Tandem  
Bracket-Arm  
Mounting  
Without  
Wire Outlet



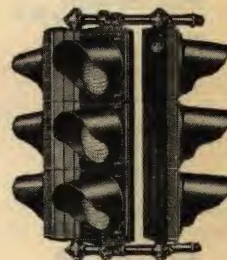
Type TRM-333D  
Three-Way Signal  
Mast-Arm  
Mounting



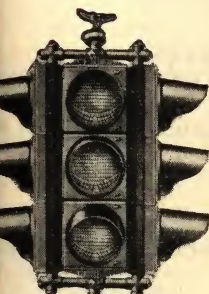
Type TSV-113D  
One-Way Signal  
Vertical  
Bracket-Arm  
Mounting  
Without Wire  
Outlet



Type TRP-223D  
Two-Way Signal  
4-Inch Post  
Mounting  
Underground  
Feed



Type TRV-333D  
Three-Way Signal  
Vertical  
Bracket-Arm  
Mounting  
Without  
Wire Outlet



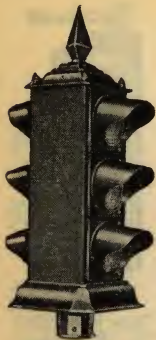
Type TRW-443D  
Four-Way Signal  
Span-Wire  
Mounting



## Crouse-Hinds Non-Adjustable Square Traffic Signals

## Schedule T

§With Red, Amber, and Green Unlettered Combination Lenses



Type TIP-223D  
Two-Way (180°)  
Signal with  
Base Light,  
4-Inch Post  
Mounting,  
Underground  
Feed



Type TSP-443D  
Four-Way Signal  
with 4-Inch Post  
Mounting, Under-  
ground Feed



Type TSW-443D  
Four-Way Signal  
Span-Wire  
Mounting



Type TIM-443D  
Four-Way Signal  
with Base Light,  
Mast-Arm  
Mounting

## \*Three-Section, Two-Way Non-Adjustable Signals

Type	90° No.	180° No.	\$Each	Mounting
TSW-223D	42553	42566	\$114.00	Span Wire
TIW-223D	42554	42567	126.00	Span Wire with Base Light
TSM-223D	42555	42568	118.60	Mast Arm
TIM-223D	42556	42569	130.60	Mast Arm with Base Light
TSV-223D	42557	42570	116.00	Vertical-Bracket Arm, less Pole Clamps
TSP-223D UG	42558	42571	117.20	4-Inch Post, Underground Feed
TSP-223D OH	42559	42572	120.60	4-Inch Post, Overhead Feed
TIP-223D UG	42560	42573	133.20	4-Inch Post with Base Light, Underground Feed
TIP-223D OH	42561	42574	136.60	4-Inch Post with Base Light, Overhead Feed
TSP-223D UG	42562	42575	111.80	1½-Inch Nipple, Underground Feed
TSU-223D OH	42563	42576	115.20	1½-Inch Nipple, Overhead Feed
TSA-223D UG	42564	42577	227.20	Pedestal with Base Light, Underground Feed
TSA-223D OH	42565	42578	230.60	Pedestal with Base Light, Overhead Feed

\*For two-section signals, deduct \$32 from above prices. For four-section signals, add \$32 to above prices.

## †Three-Section, Three-Way Non-Adjustable Signals

Type	No.	\$Each	Mounting
TSW-333D	42579	\$135.00	Span Wire
TIW-333D	42580	147.00	Span Wire with Base Light
TSM-333D	42581	139.60	Mast Arm
TIM-333D	42582	151.60	Mast Arm with Base Light
TSV-333D	42583	137.00	Vertical-Bracket Arm, less Pole Clamps
TSP-333D UG	42584	138.20	4-Inch Post, Underground Feed
TSP-333D OH	42585	141.60	4-Inch Post, Overhead Feed
TIP-333D UG	42586	154.20	4-Inch Post with Base Light, Underground Feed
TIP-333D OH	42587	157.60	4-Inch Post with Base Light, Overhead Feed
TSU-333D UG	42588	132.80	1½-Inch Nipple, Underground Feed
TSU-333D OH	42589	136.20	1½-Inch Nipple, Overhead Feed
TSA-333D UG	42590	248.20	Pedestal with Base Light, Underground Feed
TSA-333D OH	42591	251.60	Pedestal with Base Light, Overhead Feed

†For two-section signals, deduct \$39 from above prices. For four-section signals, add \$39 to above prices.

## ‡Three-section, Four-Way Non-Adjustable Signals

Type	No.	\$Each	Mounting
TSW-443D	42592	\$156.00	Span Wire
TIW-443D	42593	168.00	Span Wire with Base Light
TSM-443D	42594	160.60	Mast Arm
TIM-443D	42595	172.60	Mast Arm with Base Light
TSV-443D	42596	158.00	Vertical-Bracket Arm, less Pole Clamps
TSP-443D UG	42597	159.20	4-Inch Post, Underground Feed
TSP-443D OH	42598	162.60	4-Inch Post, Overhead Feed
TIP-443D UG	42599	175.20	4-Inch Post with Base Light, Underground Feed
TIP-443D OH	42600	178.60	4-Inch Post with Base Light, Overhead Feed
TSU-443D UG	42601	153.80	1½-Inch Nipple, Underground Feed
TSU-443D OH	42602	157.20	1½-Inch Nipple, Overhead Feed
TSA-443D UG	42603	269.20	Pedestal with Base Light, Underground Feed
TSA-443D OH	42604	272.60	Pedestal with Base Light, Overhead Feed

‡For two-section signals, deduct \$46 from above prices. For four-section signals, add \$46 to above prices.

Prices do not include incandescent lamps.

Special detachable hoods not exceeding 8 inches in length will be furnished without extra charge. Hoods exceeding 8 inches in length, add \$3.00 per hood.

§Prices include unlettered lenses in all sections. For each unlettered lens changed to a lettered lens or to an arrow lens, add \$1.00 to the prices. For each lens omitted, deduct \$1.00 from the prices.

||Price does not include pole clamps.



## Crouse-Hinds One-Section Beacons

Without Motor Flashing Switch

Schedule T

†With Amber Unlettered Combination Lenses

## \*One-Section, Four-Way Adjustable Beacons

Type	No.	Each	Mounting
TRW-441D	46237	\$86.80	Span Wire with Top Arm Assembly Only
TRM-441D	46238	91.40	Mast Arm with Top Arm Assembly Only
TRV-441D	46239	98.00	Vertical-Bracket Arm, less Pole Clamps
TRP-441D UG	46240	97.00	4-Inch Post, Underground Feed
TRP-441D OH	46241	101.60	4-Inch Post, Overhead Feed
TRU-441D UG	46244	92.60	1½-Inch Nipple, Underground Feed
TRU-441D OH	46245	97.20	1½-Inch Nipple, Overhead Feed
TRA-441D UG	46246	212.00	Pedestal with Base Light, Underground Feed
TRA-441D OH	46247	216.60	Pedestal with Base Light, Overhead Feed

## \*One-Section, Four-Way Non-Adjustable Beacons

Type	No.	Each	Mounting
TSW-441D	42694	\$64.00	Span Wire
TIW-441D	42695	76.00	Span Wire with Base Light
TSM-441D	42696	68.60	Mast Arm
TIM-441D	42697	80.60	Mast Arm with Base Light
TSP-441D UG	42698	167.20	4-Inch Post, Underground Feed
TSP-441D OH	42699	170.60	4-Inch Post, Overhead Feed
TSA-441D UG	42702	177.20	Pedestal with Base Light, Underground Feed
TSA-441D OH	42703	180.60	Pedestal with Base Light, Overhead Feed

\*Write for additional information on two, three, five, and six-way beacons.

## Crouse-Hinds One-Section, Four-Way Beacons and Signals

Without Motor Flashing Switch

Schedule T

†With Amber Unlettered Type T or Special Lenses

Crouse-Hinds one-way, one section beacons and signals are similar in all respects to standard traffic signals, except that they have only one section instead of the usual three.

All beacons except TSE-111D are regularly equipped with amber, unlettered combination lenses. Type TSE-111D is equipped with WALK or ARROW lenses and is used for mounting beneath existing signals. They are furnished complete with 1¼-inch diameter pipe nipple, lead gasket, and check nuts.

Type TST-111D beacons are equipped with an auxiliary reflector and receptacle for illuminating an information or warning sign mounted on the supporting standard immediately below. Auxiliary reflector is designed to take any lamp not exceeding 3½ inches in diameter or 6½ inches in length. A standard 100-watt lamp is recommended. On the bottom of the type TST-111D beacon, there is a slip fitter for 2-inch pipe, cast as part of the beacon base. Set-screws are provided for fastening it to the 2-inch supporting pipe.

Type	No.	Each	Mounting	Lens
TSO-111D	46402	\$16.00	Without any Mounting Attachments	Amber
TSW-111D	42657	21.20	Span Wire	Amber
TSM-111D	42658	25.80	Mast Arm	Amber
TSP-111D UG	42659	22.20	4-Inch Post, Underground Feed	Amber
TSV-111D	42663	20.20	Vertical-Bracket, with Top Arm Only, less Pole Clamps	Amber
TSE-111D	46372	18.80	1¼-Inch Nipple in Top with Hood	WALK
TSE-111D	46373	18.80	1¼-Inch Nipple in Top with Hood	Vertical Arrow
TSE-111D	46374	18.80	1¼-Inch Nipple in Top with Hood	Right Arrow
TSE-111D	46375	18.80	1¼-Inch Nipple in Top with Hood	Left Arrow
TST-111D UG	46380	30.20	2-Inch Post with Sign Reflector and Glass Door	Amber

Prices do not include incandescent lamps, motor flashing switches, or radio interference suppressors.

If hoods are required, they will be furnished without extra charge.

†Lenses of any standard color can be obtained without extra charge. Lettered lenses can be furnished at an advance of \$1.00 per lens in the price. For each lens omitted, deduct \$1.00 from the prices.

†Beacons for 1½-inch nipple mounting can be furnished, instead of 4-inch post mounting at a decrease of \$5.40 in the prices.



Adjustable



Non-Adjustable



Non-Adjustable





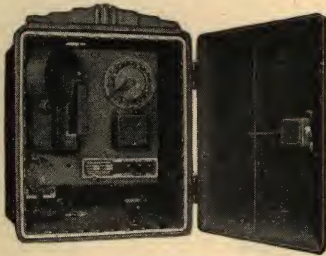
## Crouse-Hinds Automatic Synchronous Controllers

Schedule T

## Jack Mounted—Weatherproof Cabinets

\*With Gear-Shift—Adjustable Time-Cycle, 40, 50, 60, 70, and 80 Seconds

†10 Amperes, 115 Volts, 60 Cycles A.C.—6 to 15 Color Circuits, 16 Intervals



Type KS-1  
Mounted in Size 16 Cabinet



Type GS-4  
Mounted in Size 22 Cabinet

## Types KS-1 and GS-4 Non-Interconnected Synchronous

The non-interconnected type should be used at adjacent isolated intersections. Such controllers will keep in step with each other and provide a limited progressive traffic movement. They can be left running 24 hours a day or can be shut down or turned to flashing by means of time switches. All non-interconnected controllers are equipped with manual reset circuits. At the time of installation of such controllers, it is well to consider the possibility of future interconnection; and, if this is likely, the future-interconnected type should be purchased since the small additional cost would easily be justified.

## Type GS-4 Future-Interconnected Synchronous

Often cities desire to install a signal system, but lack sufficient money for the purchase of cable. The future-interconnected type of controller solves the immediate problem since the signals and controllers may be installed and the interconnecting cable purchased later. Such controllers are similar to the non-interconnected type except that they are designed and wired for interconnection later.

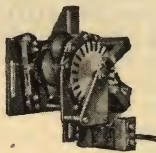
The terminal board is designed for interconnection; fuse clips for the interconnecting cable are furnished and the remote-control relay subbases for signal shut-down and flashing are installed and wired complete. The automatic reset circuit is also added. Only the remote-control relays are not supplied with future interconnected controllers. They may be purchased at the time of interconnection and mounted on the relay subbases.

## Type GS-4 Interconnected Synchronous

The interconnected type GS controller is the one most generally used in the congested portions of cities and on long thoroughfares leading thereto. Such a system permits progressive signal operation and provides all of the necessary features for perfect control except control of the time-cycle from the master.

By running an interconnecting cable between the controllers, the following additional features may be incorporated in the system: automatic reset, remote shut-down, remote flashing, and remote emergency all-red. In addition to the common wire, one positive wire in the cable for each remote-control feature.

### Timing Units For Synchronous Controller



The timing-unit motors of both controllers are of the low-speed, disc type, revolving at approximately 300 revolutions per minute.

All shafts are equipped with ball bearings.

The magnetic circuit of the motors is of laminated construction, and the result is a highly efficient motor, having a very high torque with a low wattage input.

This type of motor has proven successful in traffic signal controller operation for more than 20 years.

The synchronous timing-unit for Type KS-1 and GS-4 is the same.

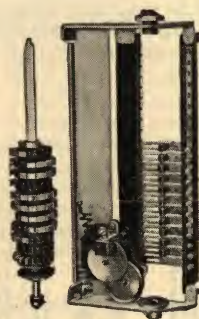
### Cam Units For Color Sequence Flexibility

Features excellent design, simplicity, and accessibility.

The cam-unit motor receives impulses from the dial contacts and drives the cam-shaft forward one position at a time.

Has a powerful, ball-bearing type motor equipped with an electro-dynamic brake to prevent coasting.

Provides a maximum of 16 intervals, but any lesser number may be used by resetting the cam-lobes. This can be done in the field without tools.



Cam-Unit with  
Cam-Shaft Removed.

The cam-unit of KS-1 controller is limited to 6-color circuits while that of the GS-4 controller will accommodate 15-color circuits. These color circuits are in addition to the necessary control circuits for interlock and interval indexing.

If cabinet is not desired, deduct \$25 from the price of complete controller.

Prices include brackets for wood-pole mounting or adjustable pole bands for steel-pole mounting. Standard 4-inch pedestal adapter, \$8.00 additional.

\*May be furnished with gears for other time-cycles.

†For 25, 40, and 50 cycles, add \$10 to the prices. Write for information on special voltages that are available.



## Crouse-Hinds Automatic Synchronous Controllers

## Schedule T

## Jack Mounted—Weatherproof Cabinets

\*With Gear Shift—Adjustable Time Cycle, 40, 50, 60, 70, and 80 Seconds

†10 Amperes, 115 Volts, 60 Cycles A.C.—6 to 15 Color Circuits, 16 Intervals

## Type KS-1 for Non-Interconnected Operation

## With Hand Reset Switch

With 2 vehicle movements. Minimum number of signal circuits, 6.  
Not available in 3, 4, or 5 vehicle movements.

No.	Without Flashing Mechanism	With Flashing Mechanism
Type KS-1.....	46452	46453
.....each	\$160.00	166.00

## Type GS-4 for Non-Interconnected Operation

## With Hand Reset Switch

	NUMBER OF VEHICLE MOVEMENTS							
	2		3		4		5	
	MINIMUM NUMBER OF SIGNAL CIRCUITS							
	6		9		12		15	
	No.	Each	No.	Each	No.	Each	No.	Each
Type GS-4, without Flashing Mechanism.....each	46488	\$180.00	46490	\$192.00	46492	\$204.00	46494	\$216.00
Type GS-4, with Flashing Mechanism.....each	46489	186.00	46491	198.00	46493	210.00	46495	222.00

## Type GS-4 for Future-Interconnected Operation

## With Hand Reset Switch, Automatic Reset Circuit, and Relay Subbases Wired Complete

Type GS-4 with Flashing Mechanism	WITH RELAY Signal Shut-down	Type GS-4 SUBBASES WIRED FOR Flashing Emergency All-Red		NUMBER OF VEHICLE MOVEMENTS							
				MINIMUM NUMBER OF SIGNAL CIRCUITS							
				6		9		12		15	
				No.	Each	No.	Each	No.	Each	No.	Each
X	X	X	..	46620	\$207.00	46624	\$222.00	46628	\$234.00	46632	\$249.00
..	X	..	X	46621	201.00	46625	216.00	46629	228.00	46633	243.00
X	..	X	X	46622	207.00	46626	225.00	46630	237.00	46634	255.00
X	X	X	X	46623	210.00	46627	228.00	46631	240.00	46635	258.00

## Type GS-4 for Interconnected Operation

## With Hand Reset Switch, Automatic Reset Circuit, and Jack Mounted Remote Control Relays Wired Complete

Type GS-4 with Flashing Mechanism	WITH REMOTE Signal Shut-down	Type GS-4 CONTROL RELAYS FOR Flashing Emergency All-Red		NUMBER OF VEHICLE MOVEMENTS							
				MINIMUM NUMBER OF SIGNAL CIRCUITS							
				6		9		12		15	
				No.	Each	No.	Each	No.	Each	No.	Each
No Relays Furnished				46636	\$201.00	46644	\$216.00	46652	\$228.00	46660	\$243.00
..	X	..	..	46637	210.00	46645	225.00	46653	237.00	46661	252.00
X	..	X	..	46638	216.00	46646	240.00	46654	252.00	46662	276.00
..	..	..	X	46639	210.00	46647	234.00	46655	246.00	46663	270.00
X	X	X	..	46640	225.00	46648	249.00	46656	261.00	46664	285.00
..	X	..	X	46641	219.00	46649	243.00	46657	255.00	46665	279.00
X	..	X	X	46642	225.00	46650	261.00	46658	273.00	46666	309.00
X	X	X	X	46643	237.00	46651	273.00	46659	285.00	46667	321.00

If cabinet is not desired, deduct \$25 from the price of complete controller.

Prices include brackets for wood-pole mounting or adjustable pole bands for steel-pole mounting. Standard 4-inch pedestal adapter, \$8.00 additional.

\*May be furnished with gears for other time-cycles.

†For 25, 40, and 50 cycles, add \$10 to the prices. Write for information on special voltages that are available.

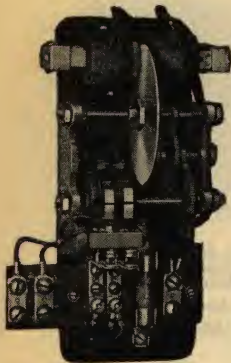


Type TSS-18 Crouse-Hinds Motor Flashing Switches

Schedule T

20 to 60 Flashes per Minute

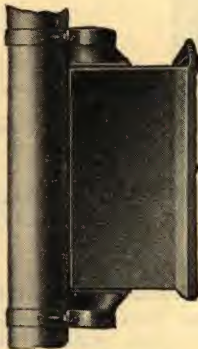
\*10 Amperes, 115 Volts, 60 Cycles A.C.



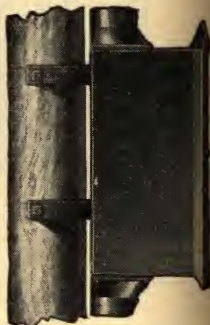
Switch Only



Switch in Size 12 Cabinet  
(Door Open)



Size 12 Cabinet  
Steel-Pole Mounting  
With Adjustable Pole Bands



Size 12 Cabinet  
Wood-Pole Mounting  
With Wood Pole Straps

Type TSS-18 has large diameter, widebreak, non-corrosive metal contacts and will handle an incandescent lamp load of 10 amperes. It is driven by a variable speed induction-disc motor, the magnetic circuit of which is laminated throughout, thus giving high torque at low wattage input.

The speed of flash may be varied between 20 times a minute and 60 times a minute.

In addition to the motor flashing switch itself, a terminal block with properly identified terminals for all field connections is provided. A set of fuse clips for the hot side of the power line is mounted on the terminal block.

The entire switch assembly may be removed as a unit from the cabinet to facilitate installation.

**Cabinet:** Type TSS-18 motoring flashing switch is mounted in a cast aluminum, weather-proof cabinet, equipped with a heavy duty brass lock. The hinged door of the cabinet is equipped with a gasket to exclude dust and moisture.

**Radio Interference Suppressor:** Type TSS-18 motor flashings switches are listed below with and without radio interference suppressors.

	STEEL-POLE MOUNTINGS				WOOD-POLE MOUNTINGS			
	Single-Circuit	Each	Two-Circuit	Each	Single-Circuit	Each	Two-Circuit	Each
Type TSS-18, with Suppressor.....	42719	\$46.00	42720	\$52.00	46411	\$46.00	46413	\$52.00
Type TSS-18, without Suppressor..	42717	38.00	42718	42.00	46412	38.00	46414	42.00

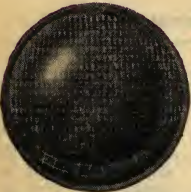
Crouse-Hinds Traffic Signal Lenses

For All Types of Signals

8 3/8-Inch Type T Combination Lenses—Standard

(Meets Specifications of Institute of Traffic Engineers)

No. KL3842, Type T Red Lens.....	each	\$2.00
No. KL3843, Type T Amber Lens.....	each	2.00
No. KL3844, Type T Green Lens.....	each	2.00



Combination Lens  
Green, Amber,  
or Red



Clear WALK Lens  
I. T. E. Standard

8 3/8-Inch Lettered Prismatic Diffusing Lenses

No. KL3185, I.T.E. Arrow, Black Field, Clear Lettering.....	each	\$3.00
No. KL3825, Lettered WALK, Black Field, Clear Lettering.....	each	3.00
No. KL3829, Lettered WAIT, Black Field, Clear Lettering.....	each	3.00

\*Can be furnished for 230-volt, 60-cycle operation without extra charge. Write for information on other voltages and frequencies.

†Prices include straps for wood-pole mounting or adjustable pole bands for steel-pole mounting.



Green Prismatic  
Diffusing Lens  
I.T.E. Arrow



Clear WAIT Lens



## Crouse-Hinds Pedestals and Poles

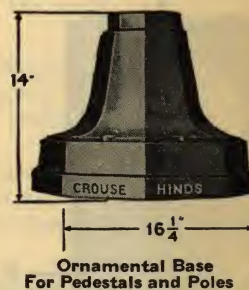
## Schedule P

The poles and pedestals listed on this page consist of an ornamental cast Feraloy base with a shaft of tubular steel.

The short 34-inch pedestal is equipped with a shaft of either 3 or 4-inch diameter pipe, and is designed for mounting control cabinets. The longer poles, for mounting signals, have a tubular steel shaft of 4-inch pipe and are furnished with an overall height of from 5 to 10 feet.

These poles and pedestals should, of course, be mounted on concrete foundations. They require four foundation bolts,  $\frac{3}{4}$ -inch in diameter and 16 to 18 inches long. The foundation bolts are not included in the catalog numbers listed below.

In the ornamental base, there is a door which is fastened to the base with machine screws. The opening of this door is  $8\frac{1}{16}$  inches high,  $2\frac{1}{2}$  inches wide at the top and  $10\frac{3}{4}$  inches wide at the bottom. This large opening provides ample room for making splices.



Height Feet	1½-Inch Nipple Mounting		4-Inch Tenon Mounting	
	No.	Each	No.	Each
5	46091	\$42.40	45670	\$42.40
6	46092	44.40	45671	44.40
7	46093	46.40	45672	46.40
8	46094	48.40	45673	48.40
9	46095	50.40	45674	50.40
10	46096	52.40	45675	52.40

## Control Box Pedestals

No. ....	45870	46391
Each .....	\$38.40	38.40
Size Pipe Shaft.....inches	3	4
Height.....inches	34	34

## No. 45669 Ornamental Bases

No. 45669, Height, 14 Inches.....	each \$34.40
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Pole with Ornamental Base  
and 4-Inch Pipe Shaft



34-Inch Pedestal with  
3-Inch Pipe Shaft

## Crouse-Hinds Pole Clamps and Mounting Attachments

## For Signals and Control Boxes

## Pole Clamps for 1½-Inch Bracket Arms with 1¼-Inch Downward Hub

	DIMENSIONS, INCHES	
	Nominal Inside	Actual Outside
3	3½	
4	4½	
5	5½	$\frac{5}{16}$
6	6½	$\frac{7}{8}$
7	7½	$\frac{7}{8}$
8	8½	$\frac{7}{8}$
9	9½	$\frac{7}{8}$
10	10½	$\frac{7}{8}$

Single Hub	
No.	*Each
KL3134	\$3.20
KL3135	3.60
KL3136	4.00
KL3137	4.40
KL3138	5.00
KL3139	5.80
KL3140	6.80
KL3141	9.00

Double Hub	
No.	*Each
KL3161	\$4.20
KL3162	4.60
KL3163	5.00
KL3164	5.40
KL3165	6.00
KL3166	6.80
KL3167	7.80
KL3168	10.00



Single Hub



Double Hub

## Wood-Pole Plates

## For All Wood Poles

No. KL2428, 1¼-Inch Downward Hub.....	each \$2.00
No. HL9062.....	each 2.00



No. KL2428, For 1½-Inch Arms

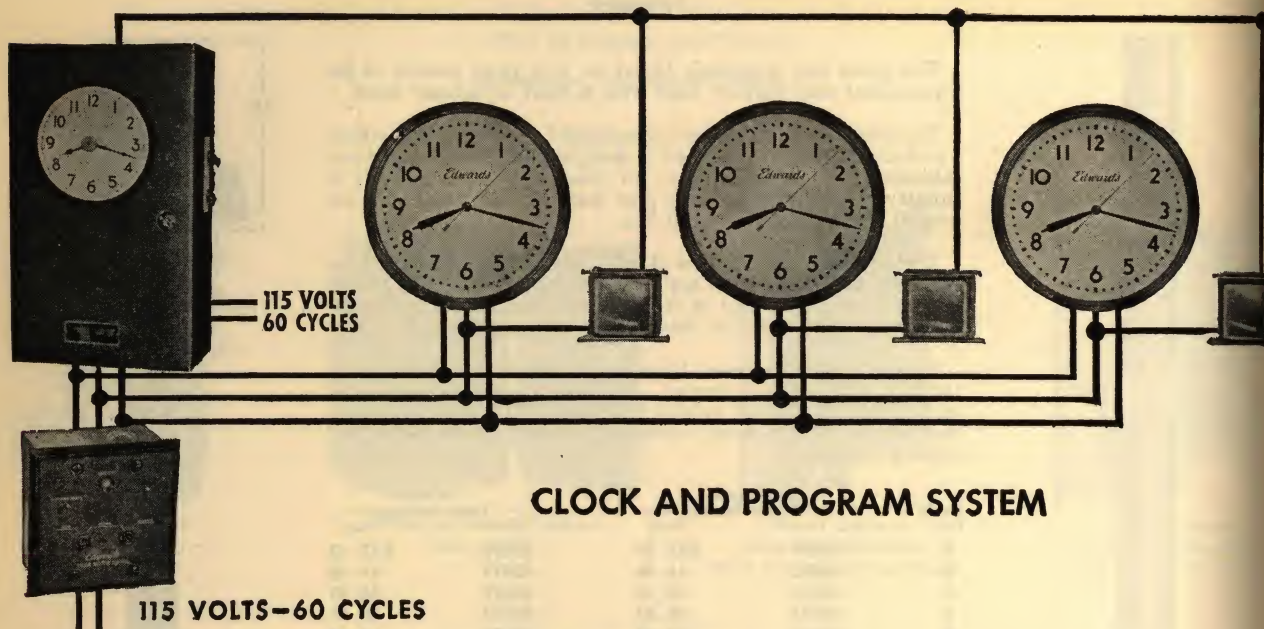


No. HL9062, For 2-Inch Mast Arms

\*For intermediate sizes, use price of next size larger clamp.



## Edwards Centrally Controlled Program Clock Systems



## CLOCK AND PROGRAM SYSTEM

## A Typical System

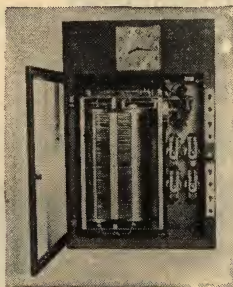
Edwards complete clock systems feature Telechron dual-motored, self-starting synchronous movement which operates without contacts, rectifiers, master clocks, relays, pendulums, keys or switches.

All clocks, program instruments, and signals listed are approved by the Underwriters Laboratories for 115 volts a.c. Edwards units are designed for operation on 115 volts, 60 cycles a.c. operation, but, when specially wound, may be used on other voltages and frequencies.

The clock and program system illustrated consists of a program instrument, for single circuit or multiple circuit as required, and a resetting device (manual or automatic) built with dual-motored clocks and audible signals.

It is important that a resetting device be used in this clock and program system in order to permit convenient time correction after power service failure, daylight saving adjustment, etc.

## Program Instruments



No. 1918

## Multiple Circuit Program Instrument

If every room in the school operates on the same schedule of program every day of the week, a one-circuit program instrument will suffice. An additional circuit is necessary for every day that the schedule differs and when any grade operates a different daily schedule.

When the school that has only daytime sessions operates on any night schedule, a 24 hour program is standard. The multiple circuit program instrument is available in two, four, and six circuit sizes. Program is set by inserting pin in cylinder hole.

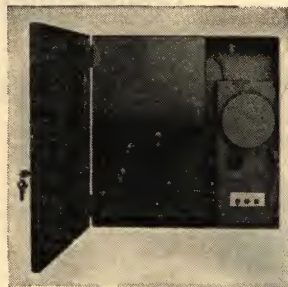
Signal duration is adjustable from two to six seconds.

The multiple circuit device No. 1918 (four circuit) is enclosed in a metal cabinet.

Single circuit program instrument No. 1910 is available for smaller installations.

No. 1910.....each \$255.00  
No. 1918.....each 560.00

## Resetting Units



No. 1902

## Automatic Dual-Motor Reset Unit

When clocks, signals, and instruments operate as a system with common current supply, the central control permits easy, accurate correction for power interruptions. The automatic power control measures length of power interruption and causes clocks to operate from a second motor at an accelerated rate to correct time.

Unit includes manual switches for daylight saving time corrections.

No. 1902 automatic control is enclosed in a metal cabinet with lock and key. Also available in manual control type No. 1900.

No. 1900.....each \$54.00  
No. 1902.....each 430.00



### Edwards Centrally Controlled Program Clock Systems

Edwards & Company manufactures a wide selection of signaling equipment.

The purpose of this listing is to show the best, the most practical, and the most dependable recommendation based on years of research.

In explanation: Synchronous clocks show the correct time at each second of the day and night, are noiseless, and are dependable. They are a logical and modern advance over the old "minute-jumper" clocks which were noisy and only changed time at each minute interval.

Automatic resetting with dual-motored clocks is certainly a modern necessity. It represents a minute fraction of the cost of any up-to-date building. A janitor, traveling from room to room with a step ladder, is a long and undependable process.

Manual correction from a central push button is a poor substitute.

Correction by overspeeding a single-motored clock is an unnecessary strain on wearable parts.

A program instrument is the only way to assure smooth, systematic, and punctual change of classes in any school, no matter how small.

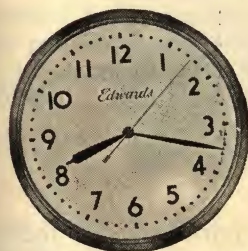
Flush, 12-inch clocks are recommended. They cost no more than surface clocks and a well designed building deserves their neater appearance. The 12-inch size has proved to be best for all locations.

Room signals should be loud enough but not startling. The old idea of very loud corridor signals (and no room signals) is distinctly outmoded, first, because noisy schools are inefficient schools, and, secondly, because all rooms do not change at the same time. A chime is best, a buzzer in the clock case next best.

Loud signals should be used in such locations as gymnasiums, lavatories, swimming pools, vocational rooms, and outdoors. A 6-inch bell is best, a horn second best. Outdoor signals should be watertight and built to stand abuse. For added protection to outdoor signals, a hood is recommended.

Avoid confusion. There is no economy in trying to make one system do three jobs poorly, instead of one job well. Don't try to make program bells call the teacher to the telephone; don't risk lives by having "three rings" on the classroom bells warn a fire instead of having a fire alarm system designed for the job.

**No. 1962 Flush Wall Clock**



Has 12-inch dial for classrooms, corridors, etc.

Furnished with red sweep second hands, clear white dial, convex crystal glass.

Black Arabic numerals permit easy visibility from a distance.

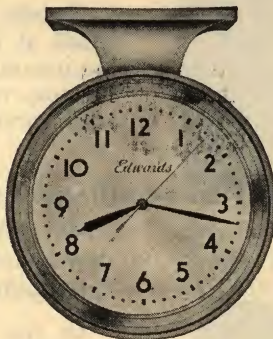
Powered by Telechron synchronous, noiseless dual-motored movement.

Metal case has satin aluminum finish.

Can be used with No. 1900 manual reset or No. 1902 automatic reset control unit.

No. 1962.....each \$30.00

**No. 1978 Double Dial Clock**



Has 12-inch dial and is used in corridors, etc.

Can be suspended from ceiling or side wall as desired.

Especially desirable for use where time is to be seen from opposite direction.

Consists of two round, surface type clocks mounted by standard hangers to a center suspension unit.

Metal case has satin aluminum finish.

No. 1978.....each \$100.00

**No. 1972 Surface Clock**



Has 12-inch dial.

Furnished with red sweep second hands, clear white dial, and convex crystal glass.

Black Arabic numerals permit easy visibility from a distance.

Powered by Telechron synchronous, noiseless dual-motored movement.

Metal case has satin aluminum finish.

Can be used with No. 1900 manual reset or No. 1902 automatic reset control unit.

No. 1972.....each \$30.00

### Edwards Audible Signals

Edwards & Company has pioneered in the development and manufacture of audible signals since 1872.

Audible systems include surface or flush chimes for classrooms; buzzers for classrooms; adaptable for corridors, playrooms, lavatories, vocational rooms, and gymnasiums. For outdoor use, horns in locations where a bell signal is not desirable.



## Edwards Hospital Signaling Systems and Equipment

Hospital signaling systems are an absolute necessity in every modern hospital.

### Nurses' Calling Systems

Nurses' calling systems may be of either one of the following three types:

**LOCKING-BUTTON TYPE** in which the locking push button, suspended from a flexible, rubber-covered cord contains all the mechanism to actuate the audible and visible signals and to reset these when call has been answered.

**PULL-CORD-SWITCH TYPE** consisting of special toggle-type switch installed in the wall and operated by a pull-cord. This system is used in hospitals where low initial cost is a deciding factor; the operation of the pull-cord switch requires more effort on the part of the patient, and is sometimes not favored because of this.

### Psychopathic Alarm Systems

This type system is tamper proof so that the deranged patients cannot operate the system. By means of a switch outside the corridor, the attendant can make the calling station in each room operative before he enters the room. Then he can call for assistance in the event of an unruly patient.

### Doctors' Paging System

The services of the permanent medical staff and of visiting physicians are in constant demand in all hospitals. It is, therefore, important that a doctor be reached as soon as possible. When visiting in a hospital, he may have several patients requiring his attention, during which time a demand for his services may arise elsewhere.

To meet such a condition, the Edwards doctors' paging system enables three doctors to be paged at one time on any number of annunciators without disturbing patients.

### Doctors' In and Out Systems

In both large and small hospitals where the visiting doctors are likely to arrive at all hours of the day or night, it is important to know when a certain doctor is in or out of the building. To accomplish this, an electrical reset annunciator, with the required number of indications, is located in view of the telephone operator. In the main entrance or doctors' cloak room is located a similar annunciator with switches. The doctor, by throwing the switch opposite his name, lights the indicator, showing his name on both annunciators. Throwing the switch in the opposite direction extinguished the lights opposite his name in both instruments.

### Ambulance and Entrance Signaling Systems

Consist chiefly of the necessary push button, located at doors leading out of the building and a lamp-annunciator having a lamp signal for each location with buzzer as audible signal. Useful for night service.

### Nurses' Home-Calling Systems

These systems provide communication between office and the nurses' and attendants' rooms at their homes. Two types of systems may be used, viz.:

#### Return-Call Annunciator Type

#### Intercommunicating Telephone Type

In the return-call annunciator systems, nurses' or attendants' rooms are provided with a combination buzzer and push-button-station while at building office, a combination annunciator and push button board is installed. In this way the office may call the nurse and the nurse may answer the call by operating the corresponding push buttons.

Room stations may be provided with indicating drops which in nurses' absence remains visible until reset, indicating that a call has been made.

In the telephone call system the combination annunciator and push button board is provided with an operator's telephone and the room stations are replaced by telephones. The room telephone may be provided with indicating drop for the same purpose as stated above.

Hospital signaling equipment is approved by the War Department for Army Hospitals; Bureau of Yards and Docks for Navy Hospitals; and Department of The Interior for Indian Hospitals.

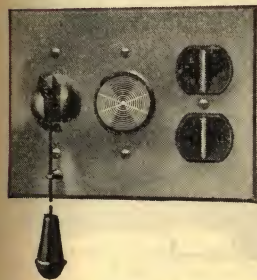
### Engineering Advice

Our engineering department—specialists in this particular field of signaling—will gladly co-operate with architects, engineers, hospital superintendents, etc., in charge of operation to lay out systems and make recommendations.

There is no charge for this service.



## Bryant Hospital Signal Devices



Bedside Calling Station



No. CS56  
Switch



No. CS258  
Switch

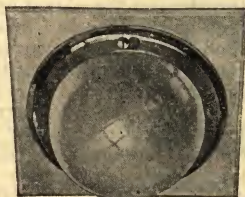
### Bedside Calling Stations

Operated by the patient; calls can only be cancelled at the bedside. Designed for use on 125 volts.

Furnished single gang or in combination with bull's eye, switch, power and radio outlets, etc.

Station switches, Nos. CS56 and CS256 (2 cords) with audible signal contact; and Nos. CS58 and CS258 (2 cords) without audible signal contact.

### No. CS50 Dome Lights



For use over private room or ward doors, corridor intersections, diet kitchens, etc.

Single dome with one light. Dome light has solid brass plate,  $4\frac{1}{2}$  inches square.

Requires one gang box not less than 1 inch deep.

## Edwards Lokator Systems

### Standard Twenty Call Lokator



The Edwards Lokator is an inexpensive, dependable system which through the medium of various signals located throughout a plant, store or office enables the telephone operator to quickly locate any person for a telephone call, etc.

The Lokator is operated entirely by low voltage irrespective of the voltage used to operate the signals. Its mechanism is driven by a small synchronous motor.

Crackled black finish is relieved in dull chromium.

The Lokator may be placed on the key shelf, on top of the switchboard or, preferably, on a shelf or table at the side of the board. It is light and portable. No mechanical or electrical connections to the switchboard. It is not necessary for the operator to remember code numbers. All names are typed on a cellophane protected strip directly above the selector lever.

The easiest, least expensive and most convenient method of wiring the devices may be used. Conduit, molding, etc., are not necessary.

### Power Units



The Power Units are standardized to provide the most desirable voltage operation of the system from either a.c. or d.c. lighting circuit.

A simple chart in the Edwards Lokator bulletin shows the quantity of signals one power unit will operate over a given distance and wire size. The system is unlimited as additional power units may be inserted into the line where needed.

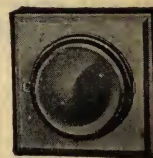
### Sounding Devices



No. 562-6  
Bell Signal



No. 5001  
Chime Signal



No. 5031  
Light Signal

A wide variety of sounding devices is offered to cover all conditions; a soft musical note, a louder note, a sharp tone bell, a silent light flash, a blasting horn. Each one, however, is designed, rated and standardized for operation together. Again, there are no special problems.

The most commonly used of the sounding devices for all systems are the chimes. They have a pleasant musical tone to which the ear responds subconsciously, but which is not annoying.

The light signal is ideal for locations where no noise whatsoever is required and then the call is shown by the flashing light.

The specially designed bells give a clear, crisp tone and will stand many years of hard service.

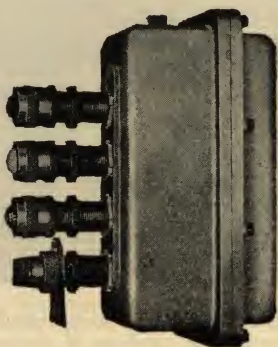




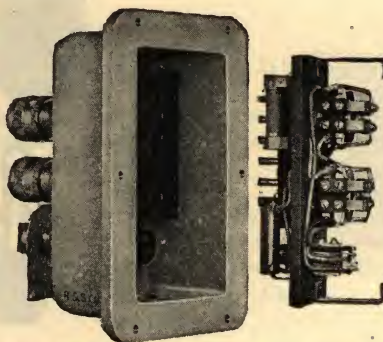
## R&amp;S Unilarm Systems

## Explosion-Proof and Dust-Tight—Class 1, Groups C and D

## Vaportight and General Purpose



No. AEP3 Assembled



No. AEP2, Showing Plug-In Unit Removed

A standardized unit alarm system for the supervision of equipment and process operations. Provides, in one compact enclosure, the many features essential for complete, unfailing supervision.

All contact making devices are assembled on a novel plug-in panel that can easily be removed when relay adjustments or other maintenance problems arise. Spare plug-in unit may be inserted immediately to insure continuous operation.

## What Unilarm Does

1. Eliminates cost of designing and checking alarm circuit and elaborate wiring diagrams. The Unilarm circuit was standardized after exhaustive study and test, making it as simple to connect as wiring a switch.
2. Eliminates back of panel conduit and wiring required between separately mounted indicator lights, relays, reset switches, etc.
3. Eliminates failure to operate. Standard circuit normally is energized; completely supervised. Any failure in circuit causes alarm to operate.
4. Permits instant testing. Operation of test switch gives instant proof of the Unilarm readiness to function under alarm conditions.
5. Saves valuable space. Compact design requires no more space than the conventional pilot light.
6. Reduces installation costs to a minimum. Only one hole in panel per indicating light and switch is required for mounting.
7. Cuts maintenance to a minimum. No need of troubleshooting in cramped back of panel areas. Replace plug-in unit with spare—servicing of unit removed is performed safely and efficiently in the maintenance shop.

## Unilarm Operation

Operation of two and three-light Unilarm systems is fundamentally the same. When conditions are normal, the contacts of the alarm initiating device (thermostat, pressure switch, etc.) are closed\*, Unilarm relays are energized, and normal light is burning. If conditions become abnormal, the alarm initiating contacts open, Unilarm relays are de-energized, and the proper alarm light flashes rapidly on and off; also, an external howler, if used, is sounded.

The operator acknowledges the alarm by turning the acknowledgement switch of the proper Unilarm. This action silences the howler and causes the alarm light to stop flashing and to assume steady-state illumination.

When conditions return to normal, the alarm light goes out, normal light comes on, and Unilarm is reset automatically for another cycle of operation.

The system is primarily designed to indicate departure from a predetermined normal condition of temperature, pressure, level, etc. Many stages of indications can be arranged to suit conditions to be supervised.

Each Unilarm is completely independent. The functioning of one does not affect or impair the subsequent operation of another. Any number may be connected to a single howler circuit without the possibility of feed-backs occurring.

## For Panel Mounting

Description	Standard		3-Light		Three-Stage		Five Stage		Vital Motor Alarm	
	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each
Explosion-Proof.....	AEP2	\$160.00	AEP3	\$190.00	AEP23	\$190.00	AEP35	\$250.00	MAEP24	\$225.00
Vaportight.....	AVT2	140.00	AVT3	165.00	AVT23	165.00	AVT35	225.00	MAVT24	200.00
General Purpose.....	AU2	125.00	AU3	150.00	AU23	150.00	AU35	210.00	MAU24	185.00
Replacement Parts										
Plug-In Unit.....	PU2	\$85.00	PU3	\$95.00	PU23	\$95.00	PU35	\$145.00	MPU24	\$120.00
Lens Assembly:										
Explosion-Proof.....	ELA	2.50								
Vaportight.....	VLA	1.50								
General Purpose.....	LA	1.50								

\*Can also be supplied for initiating devices with normally open contacts.

Standard lens colors are white (normal), green (low alarm), and red (high alarm). Specify color of lenses when ordering. Other colored lenses will be supplied when specified.

Furnished with lamps S6, 6-watt, 120-volt bulbs.

Unilarm can be furnished for surface mounting. Information and prices on request.

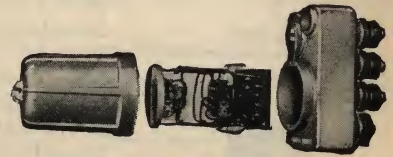


## Type EKP Crouse-Hinds Visularms

Explosion-Proof, Dust-Tight, and Weather Resistant (Raintight)

Class I, Group D (NEMA Type VII); Class II, E, F, and G; and Class III (NEMA Types IX, V and III)

Schedule CE

Three Horizontally Mounted Visularms  
Front View of PanelThree Horizontally Mounted  
Visularms, Back Feed Conduit  
Arrangement. Rear View of Panel.

Separated View

Type EKP Visularm is a complete compact unit used to supervise and control manufacturing processes in chemical plants, oil refineries, synthetic rubber plants and in other locations where constant control is necessary. The Visularm will indicate, by means of pilot lights, normal and abnormal temperature, liquid level, speed, load or any other condition which can be electrically coupled to the circuit. It is desirable to provide an audible indication of abnormal conditions and, therefore, the units listed are arranged to operate a howler signal such as one of the type ETH howlers.

Auxiliary circuits can be furnished to interlock with other devices or control process equipment. The Visularm includes the following electrical features as standard: 1. Jack-mounted panel completely factory wired and tested. 2. High speed flasher on alarm light. 3. Independent howler circuit. 4. Reset switch. Silences howler and changes alarm light from flashing to steady until fault is corrected. 5. Test switch. Permits periodic check of every device in the Visularm insuring proper operation under abnormal conditions.

**Two-Light Two-Position Visularm**  
For Normal and Abnormal Indications

## Signal Indications:

1. Normal—Bottom green light on. Top red light off.
2. Abnormal—Red light flashing. Howler on. Green light off.
3. Reset—Howler silenced. Red light on steady until conditions return to normal.

	Initiating Device Contacts		
	Normally Open	Normally Closed	
	No.	No.	Each

*Description			
†Complete Visularm	EKP32-1-J1-3	EKP32-6-J1-3	\$130.00
Jack-Mounted Panel	EKPU32-1	EKPU32-6	68.00

**Three-Light Three-Position Visularm**  
For Normal and High-Low Abnormal Indications

## Signal Indications:

1. Normal—Center green light on. Top and bottom red lights off.
2. Abnormal Low—Bottom red light flashing. Howler on. Green and top red lights off.
3. Reset—Howler silenced. Bottom red light on steady until conditions return to normal.
4. Abnormal High—Top red light flashing. Howler on. Green and bottom red lights off.
5. Reset—Howler silenced. Top red light on steady until conditions return to normal.

	Initiating Device Contacts		
	Normally Open	Normally Closed	
	No.	No.	Each

*Description			
†Complete Visularm	EKP43-3-J1-3-1	EKP43-7-J1-3-1	\$154.00
Jack-Mounted Panel	EKPU43-3	EKPU43-7	77.00

**Two-Light Three-Position Visularm**  
For Normal, Intermediate and Abnormal Indications

## Signal Indications:

1. Normal—Bottom white light on. Top red light off.
2. Intermediate—White and red lights on.
3. Abnormal—Red light flashing. Howler on. White light off.
4. Reset—Howler silenced. Red light on steady until conditions return to normal.

	Initiating Device Contacts		
	Normally Open	Normally Closed	
	No.	No.	Each

*Description			
†Complete Visularm	EKP32-2-J1-12	EKP32-8-J1-12	\$154.00
Jack-Mounted Panel	EKPU32-2	EKPU32-8	77.00

\*Standard unit arranged for 115 volts a.c., 60 cycles. Visularm can be supplied for other voltages and frequencies or other circuit arrangements. Prices on application.

†Visularm does not include howler. Type ETH howlers recommended. Pilot light jewels of colors other than those listed can be supplied. Information on request.

**Three-Light Five-Position Visularm**

For Normal, High-Low Intermediate and Abnormal Indications

## Signal Indications:

1. Normal—Center white light on. Top and bottom red lights off.
2. Intermediate Low—White and bottom red lights on steady. Top red light off.
3. Minimum Low—Bottom red light flashing. Howler on. White and top red lights off.
4. Reset—Howler silenced. Bottom red light on steady until conditions return to normal.
5. Intermediate High—White and top red lights on steady. Bottom red light off.
6. Maximum High—Top red light flashing. Howler on. White and bottom red lights off.
7. Reset—Howler silenced. Top red light on steady until conditions return to normal.

	Initiating Device Contacts		
	Normally Open	Normally Closed	
	No.	No.	Each

*Description			
†Complete Visularm	EKP43-4-J1-12-1	EKP43-9-J1-12-1	\$170.00
Jack-Mounted Panel	EKPU43-4	EKPU43-9	91.00

**Two-Light Four-Position Visularm**  
For Essential Motor Alarm

## Signal Indications:

1. Motor Off—Bottom green light on. Top red light off.
2. Motor On—Red light on. Green light off.
3. Thermostat on motor indicates high temperature—Red light flashing. Howler on. Green light off. Motor continues to run.
4. Reset—Howler silenced. Red light on steady. Motor running.
5. If motor temperature continues to rise—Magnetic starter trips. Green light flashing. Howler on. Red light off. Motor stopped.
6. Reset—Howler silenced. Green light on steady. Motor stationary until restarted.
7. Motor stopped intentionally—Green light on. Red light off. Howler silent.

	Initiating Device Contacts		
	Normally Open Contacts on Thermostat Extra NC Interlock Contact or Motor Starter		
	No.	No.	Each

*Description			
†Complete Visularm	EKP32-5-31-3		\$185.00
Jack-Mounted Panel	EKPU32-6		92.00



## Viking Type M Pressure and Temperature Controls



Type MPC  
Pressure Control



Type MTC  
Temperature Control

Viking pressure and temperature controls are extremely accurate, dependable, and thoroughly service tested control instruments for general application in connection with fluids not injurious to copper or brass.

Sturdily constructed with a small number of moving parts. Straight line operation insures consistent accuracy. Effectively withstands excessive vibration and shock. Free from damaging effects of corrosion due to special corrosion-resisting treatments.

May be installed in any position without effect on accuracy or certainty of operation.

Factory calibrated in accordance with requirements, and controls are sealed against tampering to prevent any unauthorized changes in the control settings.

Installation is simple. No tools or special parts are needed.

### Electrical Ratings

Non-inductive loads: 1200 watts at 110-460 volts alternating current; 100 watts at 110-220 volts direct current.

Inductive loads: 300 watts at 110-460 volts alternating current; 50 watts at 110-220 volts direct current.

Furnished with single pole double throw switch contacts.

**Type MPC Pressure Control.** Designed for oil, water, and air pressures up to 100 pounds per square inch.

**Type MTC Temperature Control.** Designed for temperatures up to 250°F.

**When ordering,** specify type control desired, voltage of electrical circuit in which control will be connected, circuit current, and the pressure or temperature at which control is to operate.

Type MPC, Pressure Control.....	each \$30.00
Type MTC, Temperature Control.....	each 30.00

## Viking Types M-3-B and M-3-BA Safety Controls

### For Stationary Internal Combustion Engine Installations

Provides an audible and visual signal in case of insufficient lubricating oil pressure or excessive circulating water discharge temperature.

Self-supervising and fully automatic.

Both types include an indicator unit (with lubricating oil pressure control integral); a temperature control (for circulating water temperature); a warning howler; and an automatic throttle switch (if required). All parts are dust, fume, and moisture-proof.

Where warning howler may be mounted close to indicator unit, Type M-3-BA is recommended. Where conditions require that warning howler be mounted some distance from indicator unit, Type M-3-B is recommended.

**Indicator unit includes** pilot light (blue); two trouble source indicator lights (green), one each for oil pressure and water temperature; a pressure control (lubricating oil pressure); a test switch to provide a convenient means for testing warning howler at will; and a cutout switch for de-energizing the system manually to silence the warning howler in cases where it is desired to continue engine operation for a short period despite low oil pressure or high water temperature.

Indicator unit also serves as a junction box, and is furnished with a terminal block for electrical connections to other parts of the system and to the electrical power supply. All terminals are color coded to facilitate identification and to insure that connections are made in accordance with circuit diagram which is part of the installation instructions furnished with all Type M safety controls.

**Temperature control** Type MTC (see above) is installed in engine circulating water discharge line and is electrically connected to terminal block of indicator unit.

**Warning howler** is furnished as a separate unit in Type M-3-B. It may be mounted where convenient and is electrically connected to the terminal block of the indicator unit. In Type M-3-BA, the warning howler is integral with the indicator unit.

The warning howler provides a clear, unmistakable signal in case of low oil pressure or high water temperature.

**For engine-generator sets** having an output voltage of 250 volts or less, fully automatic operation is provided by connecting safety control system directly across generator terminals. Otherwise, fully automatic operation requires the use of an automatic throttle switch to automatically energize safety control system when engine is started up and to de-energize the system automatically when engine is shut down. The automatic throttle switch is mechanically connected to engine throttle control or to some other associated engine part providing the necessary minimum movement of 1/8-inch when engine throttle is advanced from the stop position to any run position. Fully automatic operation is necessary to eliminate the disadvantage and danger of dependence upon a manually operated switch for energizing the safety control system when the engine is started up and de-energizing the system when the engine is shut down.

When engine is in operation, and lubricating oil pressure and circulating water temperature are in the normal range, all lights of indicator unit are on and warning howler is silent. If lubricating oil pressure drops below operating point of pressure control or the circulating water temperature rises above the operating point of the temperature control, the pilot light and trouble source indicator light of affected circuit go out and warning howler sounds simultaneously.

Type M-3-B, With Automatic Throttle Switch.....	each \$144.00
Type M-3-B, Without Automatic Throttle Switch.....	each 121.00
Type M-3-BA, With Automatic Throttle Switch.....	each 148.00
Type M-3-BA, Without Automatic Throttle Switch.....	each 125.00



Type M-3-BA  
Safety Control  
(Indicator and  
Warning Howler)



Type M-3-B  
(Indicator)



Type M-3-B  
(Warning Howler)



Automatic  
Throttle Switch



## Edwards Industrial Fire Alarm Systems

Industrial fire alarm systems are particularly designed and suitable for factories, schools, colleges, public institutions, hotels, theatres, office buildings, department stores, warehouses, apartment houses, etc. in fact for every class of building where life and property should be protected from fire hazard, but with full consideration that such a fire alarm system must be dependable, yet simple and economical, both as to initial cost and maintenance.

Industrial fire alarm systems may be classified in 2 general types:

Electrically-Supervised Closed-Circuit Code and Non-Code Ringing for local drill alarm purpose and for connection to municipal fire alarm systems.

Non-Supervised Open-Circuit Code and Non-Code Ringing Systems.

### Closed-Circuit Systems

Under the closed-circuit systems the following may be furnished:

**PLAIN CODE SYSTEMS** in which the operation of a station lever causes all audible devices such as gongs, horns, etc. to sound a pre-determined code indicating the point of origin of the alarm.

**PRE-SIGNAL CODE SYSTEMS** in which the first operation of a station lever causes a code to be sounded on certain audible signals, known as pilots. The second operation of the station by means of a special key will cause the code to be sounded on all audible devices, both pilots and general.

**POSITIVE NON-INTERFERING CODE SYSTEM** features may be included in either the plain or pre-signal code systems mentioned above. These features prevent the jumbling of the code signal in the event of more than one station being operated at or about the same time.

**MASTER CODE SYSTEMS** in which one standard code is used this code indicating "Fire" but where the exact location of fire is not required.

**INSTITUTIONAL AUXILIARY SYSTEMS** in which the operation of a station lever by a person, equipped with the proper key, causes a code to be sounded on all audible signals within the building for drill purposes. In the event of an actual fire the operation of the station lever will cause an alarm to be sounded on all audible devices within the building, and at the same time will transmit a signal over the municipal fire alarm circuits indicating the building on fire.

**GROUP-TYPE SYSTEMS** are for use where several buildings are to be protected by one system. On such systems the operation of any station lever causes the code-number of that particular station to be sounded 4 times on all local fire alarm signaling devices in that particular building only and also on all pilot signals in that building or any other building in the group. If specified, a general alarm feature arranged to sound all local signals in all buildings can be furnished. Where required, these systems can also be arranged to auxiliariize the Municipal Fire Alarm Systems, through a selective relay, so that, in addition to the signals indicated above, the system will also provide for simultaneously and automatically summoning the Municipal Fire Department.

**THERMOSTATIC TYPE SYSTEMS** in which stations of the thermostatic-type, which operate automatically in case of fire or excessive heat, are used. Such stations normally provide for continuous signal only on all sounding devices until the fire is extinguished, or cause of excessive heat removed, but, when combined with code-ringing boxes of electric-trip type they will, upon operation, trip the code-ringing box-mechanism, thereby causing the predetermined code of that box to be sounded on audible signal devices on the system. Such thermostatic systems or circuits, can be combined with any of the systems outlined in the foregoing paragraphs.

**GENERAL ALARM NON-CODE SYSTEMS** on which the breaking of glass in the station operates all signals continuously until glass is replaced or circuit switch is opened.

### Open-Circuit Systems

Under the open-circuit systems the following may be furnished:

**PLAIN CODE SYSTEMS** in which the operation of a station lever causes all audible devices to sound a pre-determined code indicating point of origin of the alarm.

**MASTER CODE SYSTEMS** in which one standard code is used, this code indicating "Fire" but where the exact location of fire is not required.

**GENERAL ALARM NON-CODE SYSTEMS** in which the breaking of glass in station operates all audible signals continuously until glass is replaced or circuit switch is opened.

**ANNUNCIATOR ALARM SYSTEMS** in which the breaking of glass in station operates a corresponding drop on an annunciator indicating point of origin of alarm and also operating audible signals.

### Fire Alarm Boxes

Fire alarm boxes for industrial fire alarm systems are manufactured in 9 types, to meet all conditions of fire alarm service as follows:

Plain Type Code-Ringing Closed Circuit.

Pre-Signal Type Code-Ringing Closed Circuit.

Double-Code-Ringing Type Closed-Circuit.

Shunt Non-Interfering Code Systems may be included in the Plain or Pre-Signal Systems mentioned above. These features prevent the jumbling of the code signals in the event of more than one station being operated at or about the same time and for the same fire.

Code-Ringing, Electric Trip, Closed-Circuit, Pre-wound Type.

Code-Ringing Electric Trip, Closed-Circuit, Self-Propelling Type.

Closed-Circuit Type, Non-Code Ringing.

Thermostatic Type, Open or Closed Circuit, Non-Code-Ringing.

Open-Circuit Type Non-Code-Ringing.

Code ringing closed-circuit fire alarm boxes are subdivided into the following groups:

Enclosed Pull-Lever Surface and Semi-Flush.

Break-Glass Pull-Lever Surface and Semi-Flush.

Weatherproof Pull-Lever Surface.

Weatherproof Break-Glass Pull-Lever Surface.

### Sounding Devices

Sounding devices for fire alarm systems are designed with the utmost care to afford the maximum of protection through dependable operation. Dependability is the more important as fire alarm sounding devices may remain idle for long periods of time and yet must be so constructed that, when the need arises, they function instantly and satisfactorily.

Sounding devices are divided into 2 general classes, viz.:

Electrical Sounding Devices.

Mechanical Sounding Devices.

Electrical sounding devices are predominant for use in fire alarm systems and comprise:

Straight Electric Signal Gongs—Single Stroke and Vibrating.

Small Electric Sirens.

Motor-Driven Horns and

Vibrating Horns.

Mechanical sounding devices consist of compressed air horns.

### Fire Alarm Control Cabinets

For regular, pre-signal or dual-operated and double code fire alarm systems.

Fire alarm control cabinets are designed for the control and supervision of Fire Alarm Circuits. They consist of ebony asbestos or slate panels having mounted thereon necessary controller-relays. Trouble-relays, time-limit-cut-outs, meters, terminals, fuses, etc., all being enclosed in heavy pressed steel fireproof cabinets with Yale locked doors. Glass windows are provided in doors to permit ready reading of meters without opening the doors.

### Fire Alarm Apparatus

Fire alarm apparatus is steadily being improved in quality and design from year to year and is guaranteed to be electrically and mechanically perfect. Particular attention, however, is called to the necessity of proper installation and maintenance if every day in the year satisfactory service is to be obtained. Installation suggestions are furnished with each system.

### Engineering Advice

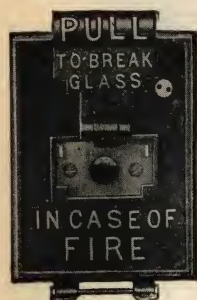
Our engineering department will promptly advise and cordially co-operate with anyone contemplating the installation or use of fire alarm apparatus.



## Edwards Hammerless Break-Glass Non-Code Fire and Emergency Stations

6-125 Volts

Schedule C



First pull of lever breaks glass, allowing plunger to come into alarm position. Lever falls down, displaying arrow danger signal and words, "Replace Glass" on reverse side—immediately indicating which station has been operated and a constant warning to reset it.

Eliminates lost or stolen hammers, marred walls, etc. With hammer type stations, person may not completely break glass. In this station, glass must break completely with first easy pull. Hitting or leaning against lever will not break glass and accidental or mischievous operation is minimized.

Hinged front, unlocked with key, for test or fire drill. Size,  $3\frac{1}{16} \times 4\frac{1}{8}$  inches. Standard finish, red with raised aluminum letters.

Open circuit non-code stations are Underwriters' approved. Laboratories will not grant approval for non-code closed circuit stations.

No. 227, Flush-Open Circuit, Fits Std. Switch Box, Etc., Wt., 3 Lb.....	each	\$13.50
No. 227C, Flush-Closed Circuit, Fits Std. Switch Box, Etc., Wt., 3 Lb.....	each	13.50
No. 228, Surface-Open Circuit, Cast Fitting for $\frac{1}{2}$ -Inch Pipe, Wt., 5 Lb.....	each	16.00
No. 228C, Surface-Closed Circuit, Cast Fitting for $\frac{1}{2}$ -Inch Pipe, Wt., 5 Lb.....	each	16.00

## Perfection Teletypewriter Papers

A sensitized coated paper that copies from pressure without carbon.

It is ideal for duplication; gives more yardage and assures clear, distinct and positive copies.

### $8\frac{7}{16}$ -Inch Teletypewriter

Furnished for single copies, 2, 3, or 4 copies, carbon interleaved and 2, 3 or 4 copies blue carbonless.

Shipped in rolls 5 inches in diameter, weighing approximately 4 pounds, and packed 12 rolls to carton.

### $1\frac{1}{16}$ -Inch Oiled Perforator Tape

Shipped in rolls of 1040 feet, 8 inches in diameter, weighing approximately  $1\frac{1}{8}$  pounds, and packed 50 rolls to carton.

### $\frac{3}{8}$ -Inch Teletype Tape

Gummed or Ungummed

Shipped in rolls of 1050 feet, 8 inches in diameter and packed 50 rolls to carton.

Gummed rolls weigh 0.65 pound, and ungummed rolls weigh approximately 0.54 pound.

### Fire Alarm Tape

Width,  $\frac{1}{2}$  inch,  $4\frac{1}{2}$  to 5 inches diameter, weighs 4 to 5 ounces per roll, 36 rolls to package, 288 rolls to carton.

Width, 1 inch,  $4\frac{1}{2}$  to 5 inches diameter, weighs 8 to 10 ounces per roll, 18 rolls to package, 144 rolls to carton.

### Police Register Tape

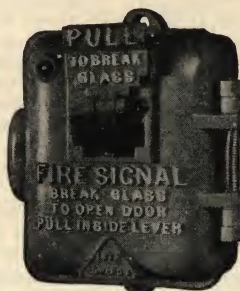
Width,  $1\frac{1}{16}$  inches; 6 inches diameter, weighs  $1\frac{1}{2}$  pounds per roll.

Wrapped 10 or 12 rolls to package, 40 or 48 rolls to carton.

We are also in a position to furnish rolls for any type automatic machines.

## Edwards Fire Alarm Stations

Schedule C



Nos. 1275-2, 1275-2-DO, 1275-2-M



Nos. 1276, 1276-DO, 1276-M

## Closed Circuit Code Ringing Stations

For Systems SS, 110-120 V.D.C.; SSA, 110-120 V. A.C.; EMB, Battery  
Open Door Pull Lever Type

Open door and pull down lever to sound alarm. Lever automatically disengages from mechanism, and subsequent pulling has no effect on proper operation of system. May be run for test without operating system by use of a test key. Finish is red enamel with raised aluminum letters.

**No. 1275.**—Surface type for surface conduit. Overall dimensions,  $7\frac{5}{8}$  inches high,  $5\frac{5}{8}$  inches wide, 5 inches deep. Approximate weight, 10 pounds.

No. 1275.....each \$55.00

**No. 1276.**—Semi-flush for concealed conduit. Overall dimensions,  $8\frac{1}{2}$  inches high,  $7\frac{1}{16}$  inches wide; including wall box,  $7\frac{3}{4}$  inches high,  $5\frac{3}{4}$  inches wide,  $3\frac{3}{8}$  inches deep. Approximate weight, 12 pounds.

No. 1276.....each \$55.00

Approximate weight wall box only,  $3\frac{3}{16}$  pounds.

### Break Glass Pull Lever Type

Breaking glass unlatches door, which springs open and remains so. Pulling down lever causes sounding of alarm. Door may be opened for test without breaking the glass by use of special key, otherwise station is same as Nos. 1275 and 1276.

**No. 1275-2.**—Break-glass surface type for surface conduit. Overall dimensions same as No. 1275. Approximate weight, 10 pounds.

No. 1275-2.....each \$65.00

**No. 1276-2.**—Break-glass semi-flush type for concealed conduit. Overall dimensions same as No. 1276. Approximate weight, 12 pounds.

No. 1276-2.....each \$65.00

Approximate weight wall box only,  $3\frac{3}{16}$  pounds.

## Closed Circuit Pre-Signal Code Ringing Stations

For Systems PSS, 110-120 V. D.C.; PSSA, 110-120 V. A.C.;

PEMB, Battery

Designed and constructed the same as stations described above, except that the pre-signal alarm is sounded four times at pre-determined places only. If upon investigation it is found desirable to sound a general alarm to clear the building, this may be done by inserting a special key in any box and pulling lever.

No. 1275-DO, Same as No. 1275.....each \$65.00

No. 1276-DO, Same as No. 1276.....each 65.00

No. 1275-2-DO, Same as No. 1275-2.....each 72.00

No. 1276-2-DO, Same as No. 1276-2.....each 72.00

## Special Features for Code Stations

220-240 volts operation, when specified, no extra charge. Two sets of contacts, 1 code wheel, add, \$2.75. Two sets of contacts, 2 code wheels, add \$8.00. Shunt type arrangement, add, \$9.50.



## Federal Pull Lever Type Alarm Boxes



Automatically sounds the siren up and down the scale a predetermined number of times and then cuts out at the conclusion of the alarm.

Pulling down the lever winds a clockwork mechanism which rotates a cam (or code wheel). This cam opens and closes the circuit a given number of times on each revolution or round.

The box is set at the factory, usually to give two or three blasts per round.

It may be quickly adjusted in the field to repeat this signal two, three, or four times, as desired. Special signals can be blown by use of the telegraph key in the box.

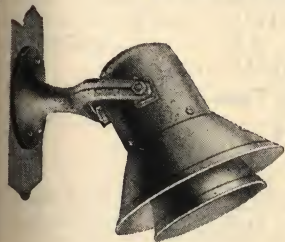
Where fire alarm boxes are to be mounted outside, exposed to the weather, the weatherproof type is recommended.

## Controls for A.C. Only

Remote Control for No. 2 Siren.....	each	\$25.00
Remote Control for No. 3 Siren.....	each	35.00
Remote Control for Nos. 5 or 7 Siren.....	each	50.00
Push Button Switches.....	each	5.00
Push Button in Break Glass Weatherproof Box.....	each	15.00
Fire Alarm Box (As Illustrated).....	each	45.00
Fire Alarm Box, Weatherproof.....	each	55.00
Standard General Alarm Control.....	each	40.00
Predetermined (Automatic Stop) General Alarm.....	ea.	55.00

Specify voltage and type of current when ordering.

## Federal Industrial Sirens



Type A

For many applications, such as start-and-stop signal for workers, fire alarm, emergency warning, buglar alarms, etc. Used in factories, warehouses, yards; on ships, cranes, drawbridges, and other harbor services; on large construction projects, plantations, and ranches; at public and private institutions; and in mines and quarries.

**Type A Weatherproof Siren.** Equipped with a specially constructed siren motor to provide  $\frac{1}{3}$  hp. performance with minimum current consumption. Has swivel bracket for mounting at any desired angle.

Red lacquer finish.

**Type L Weatherproof Siren.** Similar in general detail to Type A but is larger, more powerful, and with lower tone. Especially designed for unusually heavy duty applications particularly on higher voltages. Swivel bracket.

Red lacquer finish.

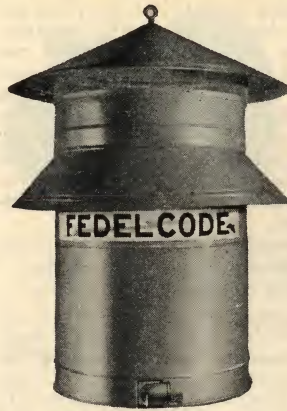
**Type A Weatherproof Code Siren.** A modification of standard Type A siren, for code signals. A time saver for calling key employees. Short up-scale blasts permit distinctive penetrating signals. Coding controlled by control of air supply and not by reversal or destructive braking. Has swivel bracket. Red lacquer finish.

Type.....	A	L	A-Code
Each.....	\$46.00	60.00	75.00
Voltage.....	*6 to 110	*110, 220, 250	*110
Current and Cycle.....	Universal	Universal	†
Length.....inches	11	13	12 $\frac{3}{4}$
Diameter.....inches	10 $\frac{1}{2}$	11 $\frac{1}{2}$	7 $\frac{1}{2}$
Height.....inches	12 $\frac{3}{4}$	13 $\frac{1}{2}$	11
Weight.....pounds	13	16 $\frac{1}{2}$	14

\*Specify definite voltage; Universal motors operate on d.c. or any cycle a.c. from 25 to 60.

†Specify definite voltage, cycle, and type of current.

## Federal Vertical Electric Sirens



Vertical general alarm and code sirens provide effective signals for industries and municipalities. The vertical design distributes the sound equally in all directions over a radius of from  $\frac{3}{4}$  to 3 miles. Grease sealed ball bearings and heavy duty construction assure maximum durability and performance. The heavy galvanized sheet metal housing makes the siren completely weatherproof but does not muffle tone.

Large sirens should be operated through a remote control to which any number of push buttons, or pull lever boxes may be connected.

Hp.	Each	Remote Control	Volts	Motor Current	Cycles Phase	Ship. Wt. Lb.
2	\$225.00	\$25.00	110-220	A.C., D.C.	Any 1	90
3	360.00	35.00	220-440	A.C.	60 3	385
3	450.00	35.00	220	A.C.	60 1	450
5	400.00	50.00	220-440	A.C.	60 3	485
5	500.00	50.00	220	A.C.	60 1	505
7 $\frac{1}{2}$	425.00	50.00	220-440	A.C.	60 3	515
7 $\frac{1}{2}$	525.00	50.00	220	A.C.	60 1	525

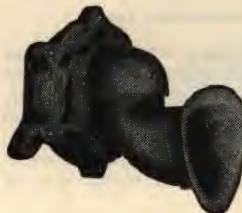
Specify definite voltage on order.

## Federal Vehicle Sirens

A complete line of powerful sirens, with or without flashing lights for fire apparatus, ambulances, police cars, and other emergency vehicles, ranging in price from \$19 to \$130.

Write for complete bulletins.

## Federal Standard Vibratory Horns



Ideal for use in mills, mines, yards, warehouses, public buildings, and in any location where a distinct code signal or long warning blast is desired. Whether for interior or exterior use, this horn is weatherproof and watertight. Constructed throughout of non-corrodible materials.

The housing is tapped at top and bottom for  $\frac{1}{2}$ -inch conduit.

Die cast from special non-corrodible alloy.

Projectors on Models, 30, 40, 50 and 51 can be rotated.

Gray lacquer finish. Packed 1 to a carton.

## Surface Type

No.	Each	*Voltage	Current	†Cycles	‡Length Inches	Finish	Ship. Wt. Lb.
30A	\$14.00	6 to 250	A.C.	60	4 $\frac{3}{8}$	Gray	4 $\frac{1}{4}$
40A	17.00	6 to 250	D.C.	..	4 $\frac{3}{8}$	Gray	4 $\frac{1}{4}$
30	18.75	6 to 250	A.C.	60	8 $\frac{1}{2}$	Gray	6 $\frac{1}{2}$
40	21.75	6 to 250	D.C.	..	8 $\frac{1}{2}$	Gray	6 $\frac{1}{2}$
50	25.00	6 to 250	A.C.	60	8 $\frac{1}{2}$	Gray	7
51	28.00	6 to 250	D.C.	..	8 $\frac{1}{2}$	Gray	7

## Flush Type

No.	Each	*Voltage	Current	†Cycles	‡Watts	Description	Ship. Wt. Lb.
F30B	\$22.75	6 to 250	A.C.	60	18	Wall Box	6 $\frac{1}{2}$
F30H	17.25	6 to 250	A.C.	60	18	Housing	6 $\frac{1}{2}$
F40B	25.50	6 to 250	D.C.	..	18	Wall Box	6 $\frac{1}{2}$
F40H	20.00	6 to 250	D.C.	..	18	Housing	6 $\frac{1}{2}$

Available for concealed conduit mounting, if specified, at no extra cost.

\*Definite voltage must be specified on order.

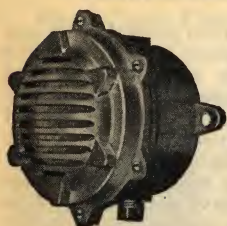
†Also available for 25 cycle at no extra charge.

‡Dimensions given are for overall length; mounting diameter between bolt hole centers is 6 inches.

§Average wattage for estimating line loads and power requirements.



# Federal High Power Vibratory Horns



Similar in all details to the standard model, but provides almost double the sound volume. Where maximum volume is required, it has an advantage over motor driven units because it can be coded much more rapidly. This horn which is also weatherproof, watertight, and non-corrodible fills a definite need in applications where an ordinary horn is not satisfactory.

Die cast from special non-corrodible alloy. Projector on Models 32, 42, 33 and 43 can be rotated. Lacquer finish. Packed 1 to a carton.

## Surface Type

No.	Each	Voltage	Current	Cycles	Length Inches	Ship. Wt. Lb.
31	\$18.00	6 to 250	A.C.	60	4 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>
41	21.00	6 to 250	D.C.	..	4 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>
32	22.00	6 to 250	A.C.	60	9 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>
42	25.00	6 to 250	D.C.	..	9 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>
33	27.00	6 to 250	A.C.	60	9 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>4</sub>
43	30.00	6 to 250	D.C.	..	9 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>4</sub>

## Flush Type

No.	Each	Voltage	Current	Cycles	*Watts	Description	Ship. Wt. Lb.
F31H	\$27.00	6 to 250	A.C.	60	30	Wall Box	7
F31H	21.00	6 to 250	A.C.	60	30	Housing	7 <sup>1</sup> / <sub>4</sub>
F41H	30.00	6 to 250	D.C.	..	30	Wall Box	7
F41H	24.00	6 to 250	D.C.	..	30	Housing	7 <sup>1</sup> / <sub>4</sub>

Available for concealed conduit mounting at no additional charge. Also available in any specified voltage from 6 to 250 with no increase in price for 25 cycle.

Dimensions given are overall lengths; mounting diameter between bolt hole centers is 6 inches.

\*Average wattage for estimating line loads and power requirements.

# Model AX Federal Explosion-Proof Sirens

## For Service in Hazardous Locations

Approved by Underwriters' Laboratories, Inc.



Used as time or start and dismissal signaling. Also used as positive alarm in mines, on tankers, at refineries, and in grain elevators, arsenals, and chemical plants.

Equipped with a high speed universal motor suitable for either a.c. or d.c. current.

Available for 110, 220, or 250 volts as specified.

Mounting diameter between bolt hole centers is six inches.

Shipping weight, 19<sup>1</sup>/<sub>4</sub> pounds.

Each..... \$140.00

# No. 318 Edwards Lightweight Horns

For general use in schools, factories, warehouses, and all other interior locations where a loud signal may be used.

Tests show a range of 102 to 105 decibels on d.c. and 98 to 100 decibels on a.c.

Cover and mounting rings are made of aluminum.

Case is made of sheet steel.

Diaphragm is made of a special formula steel.

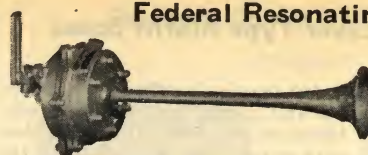
Has grey finish.

For low voltage only. Can be furnished in any voltage from 6 to 48 volts a.c. or d.c. Specify when ordering.

No. 318, Weight, 8 Ounces..... each \$6.75



# Federal Resonating Horns



A powerful electric horn with pleasant but penetrating trumpet tone. Overcomes unusual noise levels.

Horn is of die cast non-corrodible alloy with a projector of spun metal, complete with swivel bracket. Weatherproof and watertight. Specify definite voltage and cycle desired.

Packed one to a carton. Shipping weight, 11 pounds.

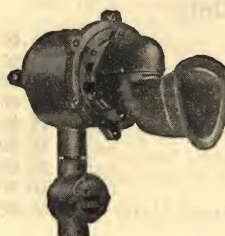
No.	Each	Voltage	Current	Cycles	Housing Dimensions Inches	Length Inches
55	\$56.00	12 to 250	A.C.	60	7 <sup>1</sup> / <sub>2</sub> x7 <sup>1</sup> / <sub>2</sub> x4	20 <sup>1</sup> / <sub>2</sub>
55	56.00	12 to 250	A.C.	25	7 <sup>1</sup> / <sub>2</sub> x7 <sup>1</sup> / <sub>2</sub> x4	20 <sup>1</sup> / <sub>2</sub>
56	56.00	6 to 250	D.C.	..	7 <sup>1</sup> / <sub>2</sub> x7 <sup>1</sup> / <sub>2</sub> x4	20 <sup>1</sup> / <sub>2</sub>

Specify voltage and cycle when ordering.

# Federal Motor Driven Horns

No.	Each	Voltage	Projector	Current	Cycles	Overall Dimensions Inches	Ship. Wt. Lb.
20	\$50.00	110,220,250	Single	A.C.	25 to 60	7 <sup>1</sup> / <sub>2</sub> x6 <sup>1</sup> / <sub>4</sub>	12
21	53.00	24,110,220,250	Single	D.C.	.....	7 <sup>1</sup> / <sub>2</sub> x6 <sup>1</sup> / <sub>4</sub>	12
60	53.00	110,220,250	Double	A.C.	25 to 60	19 <sup>3</sup> / <sub>4</sub> x6 <sup>1</sup> / <sub>4</sub>	15
61	56.00	24,110,220,250	Double	D.C.	.....	19 <sup>3</sup> / <sub>4</sub> x6 <sup>1</sup> / <sub>4</sub>	15

Specify voltage and cycle when ordering.



# Federal Explosion-Proof Horns

## For Hazardous Locations

Meets all Underwriters' requirements.

Wires extend to a splicing conduit tapped for 3/4-inch conduit.

Available in Standard or Hi Power types with grille, single, or double projectors.

## Standard Type

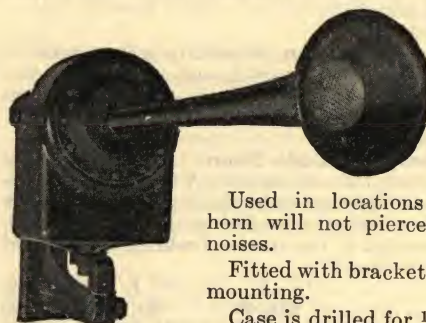
No.	Description	Each
30-AX	With Grille Front, A.C.....	\$42.50
40-AX	With Grille Front, D.C.....	52.50
30-X	With Single Projector, A.C.....	45.00
40-X	With Single Projector, D.C.....	55.00
50-X	With Double Projector, A.C.....	49.50
51-X	With Double Projector, D.C.....	59.50

## Hi Power Type

No.	Description	Each
31-X	With Grille Front, A.C.....	\$59.50
41-X	With Grille Front, D.C.....	69.50
32-X	With Single Projector, A.C.....	62.00
42-X	With Single Projector, D.C.....	72.00
33-X	With Double Projector, A.C.....	67.50
43-X	With Double Projector, D.C.....	77.50

# No. 5420 Edwards Screech Horns

120 Volts, 60 Cycles



Used in locations where ordinary horn will not pierce loud machinery noises.

Fitted with bracket for wall or ceiling mounting.

Case is drilled for 1/2-inch conduit.

When used on a signal circuit of 120-volt units, watt rating must be figured at 144 watts. Where all other signal units are on 24-volt a.c. signal circuit, No. 5304 relay, drawing 2 watts, must be inserted into the signal circuit. From the relay, two wires are taken to the 120-volt a.c. lighting circuit and two wires to the screech horn.

No. 5420..... each \$50.00



## Edwards Industrial Horns

Schedule S



No. 311



No. 312

A backplate mounts directly on wall for non-conduit wiring, or on 4-inch square box, standard switch box, any outlet box with single gang cover, any single gang conduit or wiremold type fitting. An envelope containing all the necessary mounting screws is supplied with each horn. For open wiring, washers are supplied to raise back plate from wall enough for wires to pass underneath it. Wires are brought through entrance holes in plate and connections made to binding posts in front of plate where there is plenty of room to work. The horn is then hung on two strong lugs and pressed home, where it snaps solidly into place and is held securely. To prevent tampering, a few turns on a set screw at bottom of each device locks it in place.

### Indoor Types

**No. 311.**—Powerful signal for all indoor uses. Grille front affords pleasing appearance which recommends it for schools and better buildings. Easily installed flush. Size of horn, 5½ inches diameter, 3½ inches deep.

**No. 310.**—Equipped with megaphone projector to allow greater volume than grille type. Adaptable for indoor use where machinery noises must be overcome. Size, 6 inches high, 6 inches deep, 10¾ inches long.

**No. 314.**—Indoor 2 direction type. Size, 6 inches high, 7½ inches deep, 18 inches long.

### No. 312 Weatherproof—Outdoor Types

Powerful signal, for average outdoor uses. Single megaphone. Thoroughly weatherproofed. Equipped with cast iron back box. Size, 5½ inches high, 5½ inches deep, 10¾ inches long.

No.	24 V., A.C. 60 Cy. Each	115 V., A.C. 60 Cy. Each	240 V., A.C. or D.C. Each	Approx. Weight Pounds
310	\$15.60	\$15.60	\$18.75	8
311	14.00	14.00	17.15	7
312	18.75	18.75	21.75	8

Standard frequency 60 cycles; 25 cycles supplied at no extra charge if specified.

Series Operation: Divide full available voltage by number of horns per circuit to find voltage per horn for pricing. Give full details when ordering. D.C. horns cannot be operated in series.

## No. 309 Edwards Flush Horns

24, 115, 240 Volts, A.C., 60 Cycles

Schedule S



For flush installations particularly in new buildings such as schools and other public institutions.

Tone adjustment may be made after horn is installed in wall.

Standard face is steel, finished black.

Size of faceplate, 6½x6½ inches. Wall cut size, 5⅞x5⅞x2¼ inches deep.

No. 309, 24 or 115 Volts, A.C., Specify ..... each \$22.75  
No. 309, 240 Volts, A.C. .... each 25.50

Price includes steel wall box with combination ½ and ¾-inch knockouts on 4 sides. Sprayed bronze or prime white no extra charge, if specified. Bronze plate add \$3.25.

The 25 to 40 cycles can be supplied at same price when specified. For d.c. specify No. 309D, add \$2.75 and specify voltage.

## Benjamin Motor Driven Signals

Listed by Underwriters' Laboratories



No. 8175

A weatherproof signal of unusual tone and penetration. Used indoors or out where service requirements are exacting. For use in steel mills, railroad shops, foundries, and all locations where noise is excessive.

Pitch of signal is correct for cutting through conflicting noise. Suited for coding as

there is no lag or coasting of motor to blur the coded signal.

Signal has heavy cast body, weatherproof rubber gaskets, drop-forged, heat-treated alloy steel ratchet and diaphragm anvil, phosphor bronze armature bearings, and automatic wick-feed lubrication. Motor is series wound for starting power, and has correct r.p.m. to produce penetrating tone. A set screw at rear of housing controls volume and pitch.

Standard voltage: 110 and 220 volts, 60 cycles a.c. or 110 and 250 volts, d.c. Power consumption, 55 watts.

The double projector type motor-driven signal is used where sound is to be projected in opposing directions from a central location.

Conduit connection, ½ inch.

Finished in battleship gray enamel. Red enamel furnished at an advance of \$1.25.

Weight, 15¼ pounds.

### With 8½-Inch Single Bell Type Projector

*A. C.			†D. C.		
No.	Each	Volts	No.	Each	Volts
8175-110V	\$50.00	110	8176-110V	\$53.00	110
8175-220V	50.00	220	8176-250V	53.00	250

### With Double Bell Type Projector

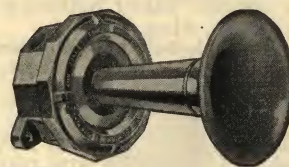
8180-110V	\$53.00	110	8181-110V	\$56.00	110
8180-220V	53.00	220	8181-250V	56.00	250

\*Also operates on 50, 40 or 30 cycles.

†Also operates on 25 cycles, a.c.

## Benjamin Weatherproof Fire Alarm Howlers

Listed by Underwriters' Laboratories



For use on fire alarm systems operating under stringent regulations.

The threaded ring separable construction, and plug-in type of wiring connection assures quick, simple installation.

D.c. howler has interrupter with coin silver contacts protected by condensers against arcing. A.c. howler has no contact; vibrations follow cycles of a.c.

The horn assembly consists of a 7½-inch seamless bell type steel projector permanently attached to a pressed steel cover on which is mounted the horn mechanism.

Baked red enamel finish.

Shipping weight, 6¾ pounds.

D. C.			*A. C., 60 Cycles		
No.	Each	Volts	No.	Each	Volts
8560-110V	\$21.75	110	8564	\$18.75	8
8560-220V	21.75	220	8565	18.75	14
.....	.....	.....	8566-110V	18.75	110
.....	.....	.....	8566-220V	18.75	220

\*Standard, 60 cycles, 25 cycles furnished when specified.



## Benjamin Heavy-Duty Weatherproof Howlers

Listed by Underwriters' Laboratories

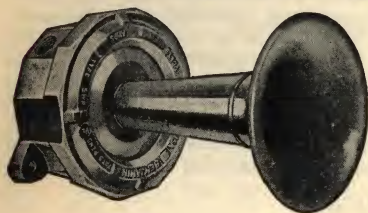
Ideal for effective calling or warning in industrial and commercial locations.

The threaded ring separable construction and plug-in type of wiring connection assures quick, simple installation. Operates on either series or multiple circuits.

Housings are regularly tapped on one side only for 1/2-inch conduit entrance but can be tapped for 3/4-inch conduit, when specified. Housings can also be tapped straight through for either 1/2 or 3/4-inch conduit at an advance of 5 cents in list price.

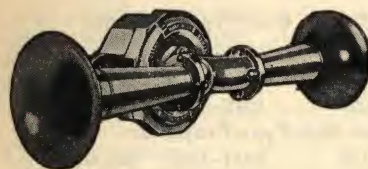
Baked battleship gray enamel finish; red enamel finish, when specified.

### With 7 1/2-Inch Bell Type Projector



*A.C., 60 Cycles		
No.	Each	Volts
8546-12V	\$18.75	†12
8546-24V	18.75	†24
8546-110V	18.75	110
8546-220V	18.75	220
D.C.		
8526-6V	\$21.75	6
8526-110V	21.75	110
8526-220V	21.75	220
8526-250V	21.75	250

### With Double Bell Type Projector



*A.C., 60 Cycles		
No.	Each	Volts
8590-12V	\$25.00	†12
8590-24V	25.00	†24
8590-110V	25.00	110
8590-220V	25.00	220
D.C.		
8599-6V	\$28.00	6
8599-110V	28.00	110
8599-220V	28.00	220
8599-250V	28.00	250

\*Supplied 25 cycles when specified.

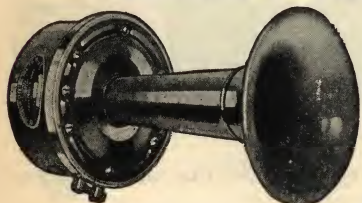
†When used with low voltage signals, transformers required.

## Benjamin Factory Non-Weatherproof Howlers

Listed by Underwriters' Laboratories

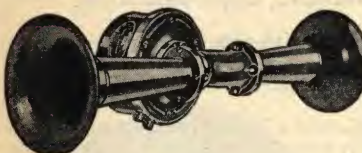
Housing has one 1/2-inch size conduit knockout at the back and one at the side and two sets of mounting holes, spaced on 2 3/4 and 3 1/2-inch centers. Baked battleship gray enamel finish; red enamel finish, when specified.

### With 7 1/2-Inch Bell Type Projector



*A.C., 60 Cycles		
No.	Each	Volts
8755-12V	\$15.60	†12
8755-24V	15.60	†24
8755-110V	15.60	110
8755-220V	15.60	220
D.C.		
8726-6V	\$18.60	6
8726-110V	18.60	110
8726-220V	18.60	220
8726-250V	18.60	250

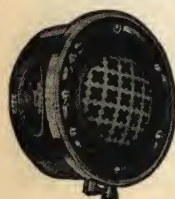
### With Double Bell Type Projector



*A.C., 60 Cycles		
No.	Each	Volts
8795-12V	\$21.75	†12
8795-24V	21.75	†24
8795-110V	21.75	110
8795-220V	21.75	220
D.C.		
8794-6V	\$24.75	6
8794-110V	24.75	110
8794-220V	24.75	220
8794-250V	24.75	250

Use with No. 8731 adapter plate.

### Projector-Less Type with Grille Front



*A.C., 60 Cycles		
No.	Each	Volts
8741-12V	\$14.00	†12
8741-24V	14.00	†24
8741-110V	14.00	110
8741-220V	14.00	220
D.C.		
8740-6V	\$17.00	6
8740-110V	17.00	110
8740-220V	17.00	220
8740-250V	17.00	250

\*Or 25 cy. †Transformer needed with low voltage signals.

## Benjamin Industrial Buzzers

Listed by Underwriters' Laboratories

Recommended for use on calling and warning systems where the volume of competitive noise is not excessive.

The buzzer mechanism is attached directly to the removable metal cover of the case and it is the armature striking this metal cover which produces the sound.

### Heavy Duty Mine Type Buzzer—Tapped 1/2 Inch



For use in tunnels, subways and etc.

Separable construction, with heavy cast metal housing and a steel cover, held in place by a metal threaded union ring.

Housings regularly tapped 1/2-inch, one side only.

Baked battleship gray enamel finish.

*A.C., 60 Cycles			D.C.		
No.	Each	Volts	No.	Each	Volts
8699-12V	\$15.60	†12	8698-6V	\$18.60	6
8699-24V	15.60	†24	8698-110V	18.60	110
8699-110V	15.60	110	8698-220V	18.60	220
8699-220V	15.60	220	8698-250V	18.60	250

### Mine Type Buzzer—8-Inch Leads



Weatherproof, with separable construction. Has pressed steel casings with gasketed steel cover, held in place by a metal clamping band.

Sealed assembly, with 8-inch insulated wire leads which feed through a water tight bushing.

Casings have two sets of gasketed attaching holes spaced on 2 3/4 and 3 1/2-inch centers.

Baked battleship gray enamel finish with sprayed aluminum band.

*A.C., 60 Cycles			D.C.		
No.	Each	Volts	No.	Each	Volts
8679-12V	\$11.25	†12	8678-6V	\$14.25	6
8679-24V	11.25	†24	8678-110V	14.25	110
8679-110V	11.25	110	8678-220V	14.25	220
8679-220V	11.25	220	8678-250V	14.25	250

### Office and Factory Type Buzzer



Non-weatherproof. Separable construction, with pressed steel housing and steel cover, held in place by a metal clamping band.

Housing has one 1/2-inch size knockout at the back and one on the side; attaches to 3 1/4 and 4-inch standard outlet box. Supplied with No. 8731 adapter plate for attachment to 4-inch square or standard switch boxes, when specified. Baked battleship gray enamel finish, sprayed aluminum band.

*A.C., 60 Cycles			D.C.		
No.	Each	Volts	No.	Each	Volts
8797-12V	\$9.05	†12	8796-6V	\$12.05	6
8797-24V	9.05	†24	8796-110V	12.05	110
8797-110V	9.05	110	8796-220V	12.05	220
8797-220V	9.05	220	8796-250V	12.05	250

\*Supplied 25-cycles, when specified.

†Signal transformers to be used with this type.



## Benjamin Signaling Single Stroke Bells and Chimes

For Series or Multiple Operation

Listed by Underwriters' Laboratories, Inc.



3-Inch Bell



8-Inch Bell



Chime

Simple in design and positive in operation.

Mechanism is of the solenoid type with only one moving part, the plunger, which responds instantly when the coil is energized. This type of construction practically eliminates maintenance costs and assures operation with a minimum current consumption.

The tone volume of both bells and chimes is adjustable. Soft, medium, or loud tones may be obtained by turning the set screw at the bottom, which regulates the plunger stroke.

Installation is simplified by a special mounting plate which provides a means of direct attachment to Gem type outlet boxes or to any switch or outlet box cover having mounting holes space on  $3\frac{1}{4}$ -inch centers. In installation, the mounting plate is first attached to the outlet box or cover by two screws. The wires are then brought through the large center hole in the plate, and looped around the binding screws, which are easily accessible with ample space for wiring. After wiring, the device is securely attached by two screws threading into the mounting plate.

The plunger is of magnetic iron with a bakelite tube.

The magnet coil is layer wound, impregnated.

Chimes are identical in construction to the bells except that a metal chime bar with a metal resonating chamber is provided in place of a gong.

Bell housings are cast iron.

Bells are highly polished; housings are battle-ship gray.

Housings for chimes are cast iron, finished in crackle lacquer.

Chime bar and resonating chamber are chromium plated.

Standard cycles, 60. When specified, 25-cycle bells and chimes are available in all voltages at no extra cost.

Type	Current	*24 Volts		*110 Volts		*220 Volts	
		No.	Each	No.	Each	No.	Each
3-Inch Bell	A.C.	8110	\$9.40	8110	\$11.95	8110	\$14.10
3-Inch Bell	D.C.	8111	9.40	8111	11.95	8111	14.10
4-Inch Bell	A.C.	8112	10.25	8112	12.85	8112	15.00
4-Inch Bell	D.C.	8113	10.25	8113	12.85	8113	15.00
6-Inch Bell	A.C.	8115	12.85	8115	16.25	8115	18.35
6-Inch Bell	D.C.	8116	12.85	8116	16.25	8116	18.35
8-Inch Bell	A.C.	8117	16.25	8117	19.65	8117	21.80
8-Inch Bell	D.C.	8118	16.25	8118	19.65	8118	21.80
Chime	A.C.	.....	.....	†8120	18.45	8120	20.50
Chime	D.C.	.....	.....	8121	18.45	8121	20.50

\*Bells up to 48 volts take 24-volt prices; from 48 to 110 volts take 110-volt prices; and bells and chimes over 110 volts take 220-volt prices.

†Chimes up to 110 volts take 110-volt prices.

For series operation, prices are determined by dividing full line voltage by number of signals in circuit to find voltage of each signal.

## Edwards Vibrating Adaptabels

For All A.C. and D.C. Voltages

Schedule S



This is a compact bell of the Underdome, Turtle or Monitor type.

As the electrical connections are made to the mounting plate only, the whole electrical installation can be made, tested and completed before painting and finishing.

The maintenance problem in hard service work, like traffic signals, railroads, etc. is simplified with a few spare Adaptabels. The Adaptabel is easily detached and a new one attached—instead of repairing on the job or installing a new bell.

The movement is completely enclosed in a cast aluminum housing. Protected against dirt, bugs, etc. When weather-proof is specified, it is protected with gaskets.

The a.c. vibrating mechanism is the polarized, no contact type. The d.c. vibrating mechanism is also of the straight line plunger type. Gongs are hot pressed steel, Parkerized to prevent rust.

All 6- and 10-inch Adaptabels mount directly on wall, 4-inch square box, standard switch box or any outlet box with single gang conduit or Wiremold type fitting.

All 4-inch Adaptabels have separable plate for mounting same as above and will also fit  $3\frac{1}{4}$ -inch octagon boxes.

In ordering, specify voltage desired.

### For A.C. Operation

Size Inches	24 Volts		115 Volts		For Other Voltages Up to 250 Volts	
	No. 560 Each	No. 562 Each	No. 560 Each	No. 562 Each	No. 560 Each	No. 562 Each
4	\$15.00	\$13.60	\$20.00	\$18.00	\$23.00	\$21.00
6	20.00	18.00	25.00	22.75	28.00	25.45
10	30.00	27.25	35.00	31.80	38.00	34.50

### For D.C. Operation

Size Inches	9 Volts		24 Volts		115 Volts		For Other Voltages Up to 250 Volts	
	No. 561 Each	No. 563 Each	No. 561 Each	No. 563 Each	No. 561 Each	No. 563 Each	No. 561 Each	No. 563 Each
4	\$15.00	\$15.00	\$17.50	\$17.50	\$20.00	\$20.00	\$23.00	\$23.00
6	20.00	20.00	22.50	22.50	25.00	25.00	28.00	28.00
10	30.00	30.00	32.50	32.50	35.00	35.00	38.00	38.00

## Edwards Single Stroke Bells

For Approved Coded Fire Alarm Systems

No. 23 for D.C., No. 24 for A.C.

Schedule C



Solenoid construction approved by State, Insurance and Underwriters' Boards for closed circuit fire alarm systems. Mounts on wall or 4-inch square box, or standard switch box, or any outlet box with single gang switch cover, or on any single gang conduit or wire-mold type fitting. Prices for series operation on 110 volts from control panel.

Size.....inches	4	6	10
Each.....	\$20.00	25.00	35.00
Approximate Weight.....pounds	3	6	9



## No. 17 Edwards Economy Bells

## Schedule S



A covered two-magnet bell for low cost burglar alarm and similar work.

Adjustable.

Bakelite insulation.

Black finish.

Standard package, 5. May be assorted.

Size.....	inches	4	6
No. 17, Std. 8-10 V. A.C., 6-8 V. D.C.....	each	\$8.60	\$10.20
Other Voltage to 48 V.....	each	10.30	12.50
Approximate Weight.....	pounds	3	5

## No. 55 Edwards Bells

## Schedule S



Designed for burglar alarm and other work of that character.

Has a single magnet bell.

Adjustable, non-weatherproof.

Finished in black with nickel gong.

Standard package, 5. May be assorted.

Size.....	inches	4	6
Std. 8-10 V. A.C., 6-8 V. D.C.....	each	\$4.10	\$5.20
Other Voltage to 48 Volts, Specify When Ordering.....	each	5.80	7.50
Approximate Weight.....	pounds	2	4

## No. 156 Edwards Monitor Bells

## Schedule S



An entirely self-contained bell that presents a neat appearance.

The hammer rod moves on a straight line and strikes the inside of the gong. This allows the bell to be made bug and dust proof.

The springs are phosphor bronze, the contacts pure

hard-drawn silver. Has a 3-inch gong.

Cadmium finished gong with black base.

Standard package, 1; approximate weight, 2 pounds.

Standard 8-10 V. A.C., 6-8 V. D.C.....	each	\$2.25
Other Voltage to 48 Volts (Specify When Ordering).....	each	3.85
For 24 V., D.C. or A.C.....	each	3.00

## Edwards Doorbells and Buzzers

Standard 8-10 Volts 60 Cycle A.C., 6-8 Volts D.C.

## Schedule S

Bell movement has straight hammer rod and solid hammer ball, giving more power and smoother action on battery or transformer.



No. 730

Arranged for surface or concealed wiring.

The Dixie doorbell and the Buzabel combined bell and buzzer are enclosed. Cover snaps on with a slight pressure, with no screws necessary. These models are only 1 inch deep to allow for mounting in out-of-the-way places where other models will not fit. The Nubel has enclosed binding posts and the snap-on type cover and exposed gong.

Large magnet, correctly designed phosphor-bronze springs, silver contacts, and fine workmanship.

Buzzer case is  $1\frac{3}{4} \times 2\frac{3}{4}$  inches, fully insulated.

## Dixie Bell

No.	Each	Description	Approx. Std. Wt., Lb. Pkg. Std. Pkg.
720	\$ .75	Aluminized, Covered, Non-Adjustable	12 6

## Buzabel

730	\$1.20	Aluminized, Covered, Non-Adjustable Combination Bell and Buzzer.....	12 6
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## Nubel

740	\$ .67	Aluminized, Enclosed Binding Posts, Non-Adjustable, $2\frac{1}{2}$ -Inch Gong....	12 5
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## Dixie Buzzer

725	\$ .63	Aluminized, Covered, Non-Adjustable	12 3
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## Large and Fancy Type Bells

Standard 8-10 Volts 60 Cycles A.C., 6-8 Volts D.C.

744	\$1.20	4-Inch Type, Non-Adjustable.....	1 1
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## No. 13 Edwards Lungen Bells

## Schedule S



Designed for use in offices, residences, hospitals, etc., where a device for harder service than the ordinary iron box type is desired. Covers fit tightly making them bug and dust proof. Phosphor bronze springs and double adjustment, pure hard-drawn silver contacts. Surface types available in five sizes varying in tone and volume to meet all conditions.

Rust-proof, polished chrome finish.

Standard package, 10 assorted sizes.

Size.....	inches	1	$1\frac{3}{4}$	$2\frac{1}{2}$	3
Std. 8-10 V. A.C., 6-8 V. D.C. each		\$3.10	\$2.85	\$3.00	\$3.10
24 V., 60 Cycles or D.C. .... each		3.50	3.25	3.40	3.50
Other Voltages up to 48 V.... each		4.80	4.50	4.70	4.80
Approx. Wt. Std. Pkg.....lb.		$\frac{3}{16}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{16}$

Specify voltage when ordering.

## No. 115 Edwards A.C. Lungen Buzzers

## Schedule S



Volume of sound increases and pitch of tone lowers in each size from Size No. 1 and up. Sound volume may be adjusted over a 100 per cent range.

Completely insulated with internal binding posts, bug and dust proof. Wire entrances provided for concealed or surface wiring. Polished chrome finish. Standard package, 100 assorted.

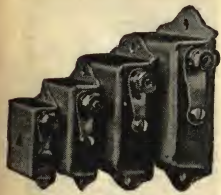
Size No.....	1	2	3	4
Std., 8-12 V., A.C. .... each	\$2.20	\$2.35	\$2.50	\$3.40
24 Volts, A.C..... each	2.35	2.50	2.60	3.50
Other Voltages to 48V., 60 Cycles..... each	3.90	4.00	4.15	5.00
Size.....inches	$2\frac{1}{8} \times 1\frac{1}{16}$	$2\frac{9}{16} \times 1\frac{3}{4}$	$3 \times 2$	$3\frac{1}{2} \times 2\frac{1}{4}$
Weight.....pounds	$1\frac{1}{16}$	$2\frac{1}{16}$	$3\frac{1}{4}$	$4\frac{3}{8}$





## No. 15 Edwards Lungen Buzzers

## Schedule S



Designed for use in offices, residences, hospitals, etc., where a device for harder service than the ordinary iron box type is desired. Covers fit tightly making them bug and dust proof.

Phosphor bronze springs and double adjustment, pure hard-drawn silver contacts. All types available in five sizes varying in tone and volume to meet all conditions.

Rust-proof, polished chrome finish.

Standard package, 10 assorted sizes.

Size No.	0	1	2	3
Std. 8-10 V. A.C., 6-8 V. D.C.				
each	\$2.50	\$2.35	\$2.50	\$2.60
24 V., 60 Cycles or D.C.				
each	2.90	2.70	2.90	3.00
Other Voltages to 48 V.				
each	4.20	4.00	4.20	4.30
Size.....inches	1½x1⅞	2½x1⅞	2⅞x1¾	3x2

Specify voltage when ordering.

## No. 503 Edwards Bus Signaling Equipment

6-12 Volts D.C.

## Schedule T



No. 503

Precision made, adjustable sturdy and dependable. Rust-proof throughout, insulated. Most dependable for hard service transportation work.

No. 503.....each \$8.20

## No. 504 Edwards Bus Door Step Light Switches

## Schedule C



No. 504 Switch and Bumper Plate

A ruggedly constructed door switch for operating step lights.

Built to stand up under the constant operation found in bus service.

Face plate is of heavy gage brass with polished nickel finish. Head of plunger is stainless steel.

Contacts are enclosed in bakelite base.

Operates on battery voltage.

Bumper plate and mounting screws supplied with each switch.

Approximate weight, 1 pound.

No. 504.....each \$3.15

## Edwards Flushcall Signaling Devices



Flushcall Device



Buzacall



Togelpush

Signaling and calling devices for residence, apartment, or any place old-fashioned bells, buzzers, and transformers were heretofore used. Each device fits standard gang boxes and takes standard switch or receptacle plates. Can be ganged together with 110-volt receptacles, etc., in standard box and finished with standard plate.

Each device is designed and built for a.c. operation only on 8 to 12 volts—with absolutely no adjustment before, during, or even after installation. The uncertainty as to proper resistance, voltage, etc., for various uses has been eliminated.

CONSTRUCTION DETAILS: Large, accessible binding posts. frame and louvre front plate combine to completely surround and protect gong and mechanism from wires in box. Inclined construction of frame and shallow design leaves ample room for lock nuts and wires. Elliptical hole permits a plumb adjustment. Mechanism completely insulated from frame. Rust-proof metals or finish throughout.

## Ringcall

No.	Each	Schedule	A.C. Volts	Cycles	Std. Pkg.	Approx. Wt. Lb.
660	\$1.06	S	8-10	60	6	2
760	1.20	C	24	60	6	..
1060	5.45	C	115	60	6	1

## Melocall

663	\$1.25	S	8-10	60	1	..
763	1.48	C	24	60	1	..

## Buzacall

661	\$1.02	S	8-10	60	6	2
761	1.15	C	24	60	6	..
1061	5.30	C	115	60	6	1

## Togelpush

664	\$ .25	S	...	..	6	..
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## Tucall

662	\$1.52	S	8-10	60	6	2
762	1.75	C	24	60	6	..

## Powacall

Underwriters' approved. Fits any standard box or outlet box with cover, 2⅞ inches deep if placed in second gang of any combination, taking 110 volts from same line as receptacle, switch, etc., in first gang. Binding posts for easy installation.

666	\$1.30	S	10V.-5W.	..	6	12
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## Push, Bell, Buzzer Combination

For walk-up apartments, a two-gang box is used with the Tucall for front door and rear door or dumbwaiter signals, and the Togelpush for door opener operation, using a standard two-gang toggle plate. For narrow spaces, however, several different combinations for this type installation can be furnished to fit a single gang box. A special brushed brass plate is included.

Standard package.

Approximate weight per standard package, pounds.

No.	Each	Description	Use	A.C. Volts
770	\$2.60	Ring and Push.....	General	8-10
771	2.60	Buzz and Push.....	General	8-10
772	2.75	Ring, Buzz and Push...	General	8-10

Complete engineering data on application.



## Edwards Door Chimes

Schedule F



No. 1605, Captain



No. 1606, Major



No. 1608, Empress Eugenie

## No. 1620, Colonial

Light ivory finish on metal with bright brass eagle on blue ground.

Sonoscope tested 1-inch diameter brass tubes.

Sounds two-note signal for front entrance and a single note for rear entrance.

Standard package, 6.

Overall dimensions: length, 43 $\frac{5}{8}$  inches; width, 8 $\frac{1}{4}$  inches; depth, 2 $\frac{1}{4}$  inches.

No. 1620.....each \$7.95

## No. 1605, Captain

A neat attractive metal case, finished in light ivory with contrasting chrome decoration.

The tone bars are Sonoscope tested for perfection of tone.

Sounds the two-note melody for front entrance and the single note for rear entrance.

Standard package, 10.

Overall dimensions: height, 6 $\frac{3}{4}$  inches; width, 3 inches; depth 2 $\frac{1}{4}$  inches.

No. 1605.....each \$3.50

## No. 1606, Major

Polished chrome shield flanked on either side by white resonators.

The Sonoscope tested tone bars have the improved tone that comes with individual resonators.

Standard package, 10.

Overall dimensions: height, 7 $\frac{3}{4}$  inches; width, 6 inches; depth, 2 $\frac{1}{4}$  inches.

No. 1606.....each \$4.95

## No. 1608, Empress Eugenie

Antique white bracket shelf enclosing individual resonators and Sonoscope tested bars.

The Sylvite case reproduces the depth and tone of old wood.

Sounds the two-note melody for front entrance and the single note for the rear entrance.

Standard package, 6.

Overall dimensions: height, 6 $\frac{7}{8}$  inches; width, 8 $\frac{5}{8}$  inches; depth, 5 inches.

No. 1608.....each \$7.95

## No. 1600 Edwards Non-Electric Door Knocker Chimes

Schedule F

Designed by Lurelle Guild.

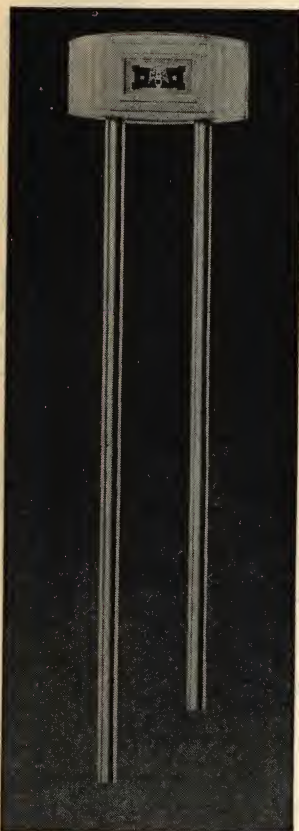
Outside door knocker is made of bright, weather-resistant solid brass with an ivory knob. Complement to any style of architecture.

Inside unit has beveled, hand-polished mirror and is framed in light ivory. Mirror conceals the compact chime mechanism, which is accurately tested for perfect tone-pitch and tone quality on the Sonoscope.

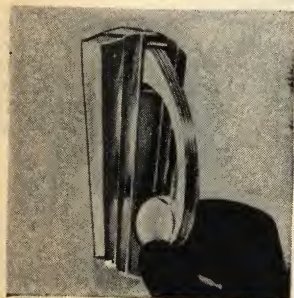
Standard package, 6.

Shipping weight, 17 pounds per standard package.

No. 1600.....each \$6.95



No. 1620, Colonial



Outside



Inside



## Kirkland Indicating Lamps

All units on this page are for single-hole panel mounting. All lens caps are removed from the front of the panel, permitting lamp bulb servicing. For 220-440-volt service see resistor recommendations.

### No. 590 Indicating Lamps

Underwriters' approved unit for 120-volt service. Uses T4 tungsten or T4½ neon candelabra base bulb. Smooth plastic lens, in small lens cap 1½ inches in diameter. Mounts in 7⁄8-inch diameter hole. Overall depth behind front of panel, 2½ inches.

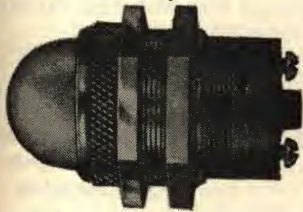
No. 590.....each \$ .90

### No. 600 Indicating Lamps

Underwriters' approved unit for 120-volt service. Uses S6, 3 or 6-watt tungsten bulb, with candelabra screw base. Smooth cupped lens, interior sand-blasted. Mounts in 1¾-inch diameter hole. Overall depth behind front of panel, 2¼ inches. Special flat lens for letters or numbers; three letters or numbers, 15 cents.

No. 600.....each \$1.65

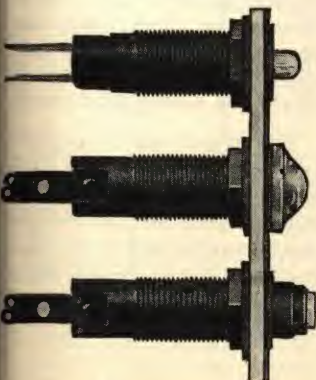
### No. 659 D/E Deluxe Indicating Lamps



A unit of extra heavy duty construction for use with 120-volt S6 tungsten or T4½ neon candelabra screw base bulbs. Extremely shallow depth, only 1¼ inches behind the front of the panel. Mounts in 1¾-inch diameter hole. Heavy glass deeply cupped lens. Chrome finish on hexagon holding lip, (1⁄8-inch wide), with black finish on metal lens cap.

No. 659 D/E.....each \$2.20

### No. T2 Indicating Lamps



No. T2 lampholder molded of bakelite. Mounts in 3⁄4-inch diameter hole. Overall depth behind front of panel, 2¾ to 2¼ inches. Uses T2 slide base low current bulb, .038 maximum amperes on 24 volts. Resistors for 120-220-440 volts. Slip-fit lens caps used; No. T2PC plastic cap, No. T2MC glass lens in metal cap, or No. T2WE cap (a metal cap housing No. 2 WE caps). An ideal unit where panel space is limited.

No. T2 Lamp-holder.....each \$ .50  
No. T2PL Cap..... .20  
No. T2MC Cap..... .50  
No. T2WE caps quoted on request.

### No. 555 Indicating Lamps

No. 555 LV for low voltage G6 bulb and No. 555 HV for S6-120-volt bulb. Double-contact bayonet type. Mounts in 7⁄8-inch diameter hole. Overall depth behind front of panel, No. 555 LV, 1¾ inches, No. 555 HV, 2½ inches.

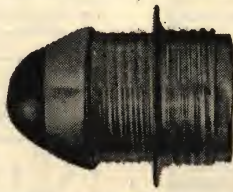
No. 555.....each \$1.25

### No. 170 SP Indicating Lamps

Underwriters' approved unit for 120-volt service. Uses the S6 candelabra screw base bulb. Flat glass 2-inch diameter lens for letters and numbers. Any color effect. Mounts in 1¾-inch diameter hole. Overall depth behind front of panel, 2½ inches. Chrome lens cap.

No. 170 SP, less markings.....each \$2.00

### No. G10 and G11 Indicating Recessed Lamp Receptacles



Units that so house the bulb that the effect of a lens is created. Standard screw socket. No. G10 uses G10 neon bulb, No. G11 uses 7-watt tungsten G11 bulb, both on 120 volts. Ideal when lights are on constantly, due to good ventilation. Mounts in 1¾-inch diameter hole. Overall depth behind front of panel, 1¾ inches. Highly polished chrome finish.

No. G10 and G11.....each \$1.80

### No. T2SLC Indicating Lamps

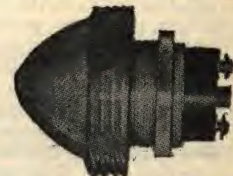
A super-fine unit for use with the low current T2 slide base bulb, .038 maximum amperes on 24 volts. A molded bakelite lamp holder in a lathe-machined metal housing. Screw type lens cap of metal with plastic lens. Mounts in 1½-inch diameter hole. Overall depth behind front of panel, 2½ to 2 inches. Resistors for 120-220-440-volt service. No. T2SLC, Black Finish.....each \$1.65

### No. 590 D/E Indicating Lamps

Underwriters' approved unit for 120-volt service. Uses S6 tungsten or T4½ neon candelabra base bulb. Deeply cupped glass lens. Interior sand-blasted. Mounts in 7⁄8-inch diameter hole. Overall depth behind front of panel, 2½ inches. Lamp protrudes into lens providing wide range of visibility.

No. 590 D/E.....each \$1.25

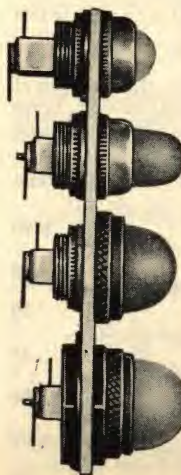
### No. 180 SP Indicating Lamps



Underwriters' approved unit for 120-volt service. Uses S6 tungsten candelabra screw base bulb. Has 2-inch diameter beehive lens, deeply cupped. Wide visibility range. Ideal for panels, with heavy apparatus. Overall depth behind front of panel, 1¼ inches. Mounts in 1¾-inch diameter hole. Chrome plated metal lens cap.

No. 180 SP.....each \$2.00

### Series S/C Indicating Lamps



For use with single-contact miniature bayonet base bulbs. Type T3¾ S/C low voltage bulbs and NE51 neon bulbs.

No. S/C 59 P/L. Overall diameter, 1½ inches. Mounts in 7⁄8-inch diameter hole. Overall depth behind front of panel, 1¾ inches.

No. S/C 59 P/L.....each \$ .80

No. S/C 59 G/L. Overall diameter, 1½ inches. Mounts in 7⁄8-inch diameter hole. Overall depth behind front of panel, 1 inch.

No. S/C 59 G/L.....each \$1.00

No. S/C 59 D/E. Overall diameter, 1½ inches. Mounts in 7⁄8-inch diameter hole. Overall depth behind front of panel, 1 inch.

No. S/C 59 D/E.....each \$1.25

No. S/C 65 D/E. Overall diameter, 1¾ inches (tips of hexagon nuts). Mounts in 1¾-inch diameter hole. Overall depth behind front of panel, 7⁄8 inch. No. S/C 65 D/E.....each \$2.20



## Kirkland Indicating Lamps

## No. 170SW Low Wattage Switchplate Units

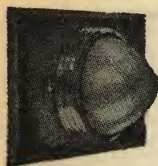


Has 2-inch diameter flat lens for markings. The plate fits a standard outlet box. Uses the S-6 120-volt, 3 or 6-watt bulb.

Overall depth behind front of plate,  $2\frac{1}{4}$  inches.

No. 170SW, Less Markings.....each \$2.20

## No. 180SW Low Wattage Switchplate Units

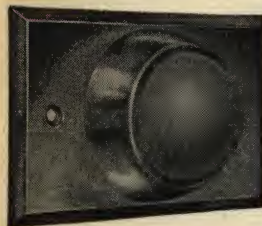


An ideal over-door light, closet light, and elevator signal. Has 2-inch beehive lens. Furnished with plate for single gang box. Uses the S6 120-volt, 3 or 6-watt bulb.

Overall depth behind front of panel,  $1\frac{1}{4}$  inches.

No. 180SW.....each \$2.20

## Exit Lights—Neon Type



These units use neon bulbs in such a manner that the lamp effects the appearance of a lens. Reduces lamp theft and breakage to a minimum. Neon lamps have 3000 hours or more lamp life.

**No. G10-SW.** A switchplate unit using the G10 neon bulb. Overall depth,  $1\frac{3}{4}$  inches.

**No. S14-SW.** A switchplate unit using the S14 neon bulb. Overall depth,  $2\frac{1}{2}$  inches.

## Special Lamp Bulbs for Signaling Service

As long life is the prime requisite of an indicating lamp bulb, care must be taken in the choice of the bulb. Ordinary lamp bulbs are made to produce illumination, whereas brilliant light is not required in use with Kirkland Bulls-I-Units. Kirkland signal lamp bulbs are designed especially for indicating light service.

It is recommended that a bulb be of a higher rated voltage than that it is to be operated on; for example, it is wise to use a 150-volt lamp for 120-volt service, or a 32-volt lamp for 24-volt service, etc. The actual results of this practice will be a satisfactory visibility with a greatly increased lamp life.

No.	Type	Rated Voltage	Type of Lamp Base	Each	No.	Type	Rated Voltage	Type of Lamp Base	Each
SA	S6	12	Candelabra	\$.55	TA	T4	12	Candelabra	\$.60
SB	S6	18	Candelabra	.55	TB	T4	18	Candelabra	.60
SC	S6	24	Candelabra	.55	TC	T4	24	Candelabra	.60
SD	S6	32	Candelabra	.55	TD	T4	32	Candelabra	.60
SE	S6	40	Candelabra	.55	TE	T4	40	Candelabra	.60
SF	S6	55	Candelabra	.70	TF	T4	55	Candelabra	.75
SG	S6	150	Candelabra	.45	TM	T4	150	Candelabra	.50
					TN	T2	24	Friction	.50

Other Low Voltage T2 Bulbs.....each \$.60

Bayonet base, double or single contact lamps (U. S. Automobile standard base) available in S6 and T4, (T4 $\frac{1}{2}$ ) types at same prices as above.

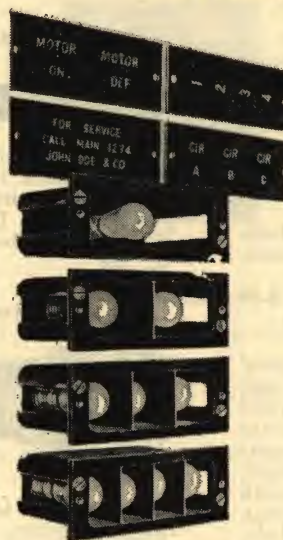
## Signal Lamp Resistors

A resistor is used in series with a lamp, for the purpose of operating 120-150-volt lamp on 220-440 volts; 32-volt lamp on 120 volts, etc. These resistors are of the highest quality and made with this particular service in view.

Type No.	Description	Each
220	120-150-Volt Lamps on 220-Volt Service (S6-T4-C7 Type Lamps).....	\$.60
440	120-150-Volt Lamps on 440-Volt Service (S6-T4-C7 Type Lamps).....	.80
120	32-Volt Lamps on 120-Volt Service (T4-T3 Type Lamps).....	.70
TDR	For Use with T2 24-Volt Lamp on 120-Volt Service, with Assembly.....	.50
TER	For Use with T2 24-Volt Lamp on 220-Volt Service, with Assembly.....	.50
TFR	For Use with T2 24-Volt Lamp on 440-Volt Service with Assembly (2).....	1.50
DB	Dim-Brite Split Resistor, for 120-220 Volts with Assembly (T2 Type).....	.80

## Type ML Multiple Lamp Holder Units

With Illuminated Message Plates



This unit is molded of bakelite, and is provided with slots to hold removable light barriers when two, three, or four S6 120-volt bulbs are used. The message plates are of laminated plastic, with a black opaque front, the inner core is of a translucent white material. When the bulb behind the plate is lighted, the message is brilliantly indicated. The message can be produced in any color. Size of light chamber,  $1\frac{1}{2} \times 3$  inches. Overall size of unit,  $3\frac{3}{4} \times 1\frac{1}{2}$  inches. Overall depth behind front of panel to wire terminal,  $2\frac{3}{4}$  inches.

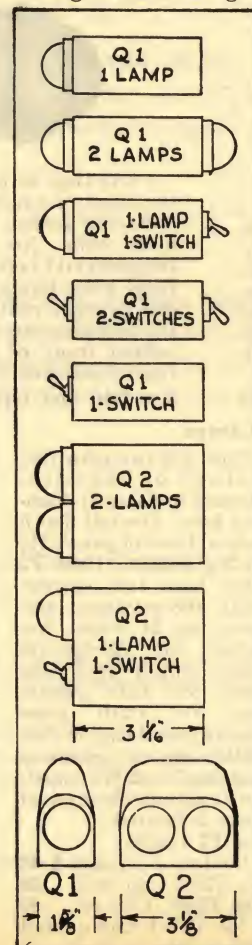
Provided with a V-tip and an inverted V-slot to permit easy alignment, when used one over the other for lamp annunciators and for large groups of messages, such as

used on automatic control devices, etc.

If it is necessary to have extreme side visibility, small bulls-eyes can be placed as required on the plates.

Requires only a small space for installation. For instance, a 40-lamp annunciator, using ten ML4 units would measure only 17x5 inches.

Special units can be furnished with plates for mounting on single and double-gang standard boxes.



## Quonset Fittings for Use with Indicating Lights and Toggle Switches

Quonset Q1—Single Unit  
Quonset Q2—Double Unit

Modern in appearance and ideal for use on machine shop bench legs, desks, etc. Also affords protection against breakage when used on posts for indicating light service, etc.

A die casting base with a brass slip-over cover, permits easy mounting and wiring. The Q1 and Q2 units can be wired through the bottom of the base or on order through the base end. They can be mounted on single and double gang plates.

The Q1 unit can be furnished with Nos. 590 and 590 D/E units for 120-volt service. No. S/C 59 P/L for low voltage service can be used on each end for elevator floor signals. Stock toggle switches can be used on one end or on both ends.



**Edwards Return Call Annunciators****Electromanual Reset**

No. 412 Flush Type with Metal Face Plate and Wall Box  
No. 410 Surface Type with Metal Case  
8-12 Volts A.C. or 6-8 Volts D.C.

**Schedule C**

For return call systems. Resets all drops at once from a remote point. Individual reset of drops not possible. Also manual, mechanical reset in case of emergency.

Rooms may be called from the office or central station, or vice versa, and the call may be acknowledged.

Needs only one transformer.

Standard black finish. Special finishes, features, etc., complete installation data upon application.

**No. 410 Surface Type**

No.	Each	No. of Drops	ARRANGEMENT Across	Down	Ht. In.	Width In.	Depth In.
410-25	\$270.00	25	9	3	11	12	3 1/2
410-30	305.00	30	8	4	13 3/8	11	3 1/2
410-36	350.00	36	9	4	13 3/8	12	3 1/2
410-42	405.00	42	11	4	13 3/8	14	3 1/2
410-49	460.00	49	10	5	15 3/4	13	3 1/2
410-56	510.00	56	12	5	15 3/4	15	3 1/2

**No. 412 Flush Type**

No.	Each	No. of Drops	ARRANGEMENT Across	Down	Ht. In.	Width In.	Depth In.
412-25	\$295.00	25	9	3	13 1/8	14 1/8	4 1/8
412-30	330.00	30	8	4	15 1/2	13 3/8	4 1/8
412-36	375.00	36	9	4	15 1/2	14 1/8	4 1/8
412-42	430.00	42	11	4	15 1/2	16 1/8	4 1/8
412-49	490.00	49	10	5	17 7/8	15 3/8	4 1/8
412-56	535.00	56	12	5	17 7/8	17 1/8	4 1/8

For overall of trim, add one inch to height and width.

Mahogany, walnut or oak finish, no extra charge.

For up to 24 volts a.c. or d.c. no extra charge.

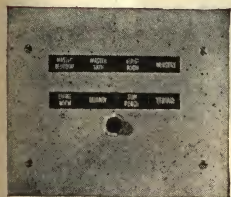
Larger sizes, prices upon application.

**Edwards Flush Annunciettes**

8-12 Volts A.C.

**Schedule T****No. 672 Manual Reset Type**

With Wall Box



Drops and reset mechanism will stand up indefinitely under most severe service. Mounts easily in wall box allowing plumb adjustment. Front connectors in full view allow complete installation, test, and operation before face plate is fastened.

Buzz audible signal with marked connectors for adding extension

signals if desired. Furnished with 100 separate name and number cards.

No. of Drops	Each	ARRANGEMENT Across	Down	WALLCUT DIMEN. Height Inches	Width Inches	Approx. Wt., Lb.
4	\$20.75	4	1	4 3/8	5 7/8	6
8	29.50	4	2	4 3/8	5 7/8	7
12	42.00	6	2	4 3/8	7 7/8	9
16	54.00	6	3	6 1/4	7 7/8	10
20	67.00	5	4	7 1/8	7 7/8	12
24	79.00	6	4	7 7/8	7 7/8	13

For each additional 6 drops, add \$30.

Depth, 3 inches for all sizes. Add 3/8 inch all around for overall size of trim. Standard: Wrinkle grey finish and for 8-12 volts a.c. operation. Any solid spray finish, add 10%.

For up to 24 volts a.c. or d.c., no extra charge.

Special finishes, etc.; installation data on application.

**Wall Boxes Only for No. 672**

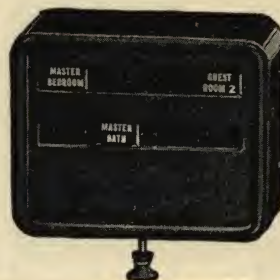
For satisfactory installation wall boxes should be used.

No. 671A, For 4-8 Drop Annunciettes.....	each	\$1.25
No. 671B, For 12 Drop Annunciettes.....	each	1.25
No. 671C, For 11 Drop Annunciettes.....	each	6.25
No. 671X, For Larger Sizes (Specify Size)....	each	6.25

When wall box has been shipped and annunciette without wall box is desired, specify No. 670 instead of No. 672.

**Edwards Surface Annunciettes**

8-12 Volts A.C.

**Schedule S****No. 82 Manual Reset Type**

Drops and reset mechanism are thoroughly reliable, and will stand up indefinitely under most severe service. Buzz audible signal with marked connectors for adding extension signals if desired.

Envelope included with 100 separate name and number cards for drops allowing definite, correct indications in residence, bank, office or any installation.

No. of Drops	Each	ARRANGEMENT Across	Down	Over-all Ht. In.	Over-all Width In.	Approx. Wt. Lb.
4	\$16.75	4	1	4 3/8	5 1/4	1 1/16
8	25.50	4	2	4 3/8	5 1/4	1 15/16
12	38.00	6	2	5	7 3/16	2 5/8
16	50.00	4	4	7 1/16	7 3/16	7 3/16
20	63.00	5	4	7 1/16	7 1/8	5 1/8
24	75.00	6	4	7 1/16	8 3/8	6

For each additional 6 drops add \$30.

Standard: Wrinkle grey finish and for 8-12 volts a.c. operation.

Special finishes, features, etc., complete installation data on application.

**No. 673 Edwards Desk Manual Reset Annunciettes**

8-12 Volts A.C.

**Schedule C**

Smooth, positive reset push on top of case assures efficient operation. Base is felt covered to prevent scratching. Buzz audible signal is standard. For convenience in installation, a complete assortment of 100 name and numerical indications for drops is furnished with each annunciette.

Furnished complete with 6-foot cord and connector block.

No. of Drops	Each	ARRANGEMENT Across	Down	Overall Height Inches	Overall Width Inches	Approx. Weight Pounds
2	\$34.00	2	1	2 1/2	4	4
4	47.25	4	1	2 1/2	5	4
6	60.00	6	1	2 1/2	7	5
8	75.00	8	1	2 1/2	9	8

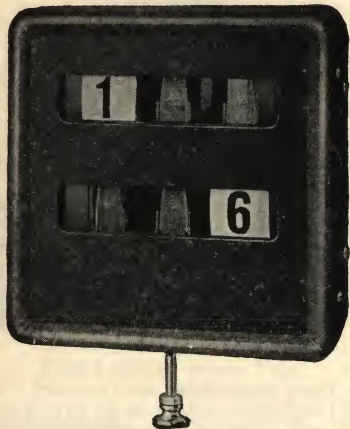
For each additional 6 drops add \$40.

Standard: Mahogany, walnut, or oak finish and for 8-12 volts a.c. operation. Special finishes, features, etc., complete installation data on application.



No. 81 Edwards Dixie Surface Annunciators

Schedule S  
8-10V. A.C. or 12V. A.C.



All metal case, finely finished. The No. 80 drop which is used, is locked in place and cannot be released by shaking or jarring. Indications are black on white background and cards are changeable. Buzz audible signal is standard.

Standard finish: wrinkle grey.

Special finishes, features, etc., installation data on application.

No. of Drops	Each	ARRANGEMENT		Height Inches	Width Inches	Approx. Wt. Lb.
		Across	Down			
4	\$16.75	4	1	5	7 <sup>3</sup> / <sub>16</sub>	1
8	25.50	4	2	7 <sup>3</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	1
12	38.00	6	2	7 <sup>3</sup> / <sub>16</sub>	9 <sup>7</sup> / <sub>8</sub>	1
16	50.00	6	3	9 <sup>3</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>	1
20	63.00	7	3	9 <sup>3</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>4</sub>	1
24	75.00	8	3	9 <sup>3</sup> / <sub>8</sub>	12 <sup>5</sup> / <sub>8</sub>	1

For each additional 6 drops, add \$30.

No. 403 Edwards Electric Reset Surface Annunciators

12-14 Volts A.C. or 8-10 Volts D.C.  
Schedule C



All metal case. No. 4 drop uses less current for indicating and resetting and gives a far better indication. The audible signal is a double adjustment buzzer. One reset button regularly furnished on case for every 10 drops. Connectors also provided for remote resetting as

Standard. All drops reset at once.

Standard finishes are black, mahogany, oak or walnut.

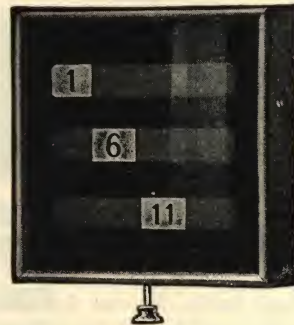
Special finishes, features, etc., complete installation data on application.

No. of Drops	Each	ARRANGEMENT		Height Inches	Width Inches	Approx. Wt. Lb.
		Across	Down			
4	\$29.50	2	2	6 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	6
8	43.00	4	2	6 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>8</sub>	9
12	59.00	4	3	8 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>8</sub>	10
16	77.00	6	3	8 <sup>1</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>8</sub>	12
20	95.00	5	4	10 <sup>1</sup> / <sub>4</sub>	9 <sup>5</sup> / <sub>8</sub>	14
24	115.00	6	4	10 <sup>1</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>8</sub>	16

For additional 6 drops, add \$35.00.

No. 807 Edwards High Voltage Surface Manual Reset Annunciators

115 Volts A.C. or 115 Volts D.C.  
Schedule C



Has a metal case with double Micarta backboard on which are mounted No. 80 drops. Care has been given to the insulation of all current-carrying parts, eliminating all materials affected by heat or moisture.

A 3-inch bell is included which may be installed adjacent to the annunciator or where desired. The annunciator is wired with marked connectors for this purpose.

Standard black finish. Any solid spray finish no extra charge.

No. of Drops	Each	ARRANGEMENT		Ht. In.	Width In.	Depth In.	Approx. Wt. Lb.
		Across	Down				
4	\$70.00	4	1	5 <sup>1</sup> / <sub>4</sub>	7 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	9
6	85.00	3	2	7 <sup>3</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	10
8	105.00	4	2	7 <sup>3</sup> / <sub>4</sub>	7 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	12
10	115.00	5	2	7 <sup>3</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>	12
12	140.00	6	2	7 <sup>3</sup> / <sub>4</sub>	10 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	16

Larger sizes, add \$14.00 per drop. For 230 volts, add \$2.25 per drop.

For flush type, add \$25.00.

No. 813 Edwards Railway Annunciettes

8-12 Volts A.C. or 6-8 Volts D.C.  
Schedule C



All metal case. For flush types, details on application. Shallow design especially adaptable to sleepers, parlor and dining cars, and is standard equipment with many railroads.

No. 156 monitor bell is furnished as the audible signal for mounting anywhere desired. Also available with chime signal. Details on application.

Mahogany, oak, walnut or any solid spray finish. Special finishes, features, etc. on application.

No. of Drops	Each	ARRANGEMENT		Height Inches	Width Inches	Approx. Wt. Lb.
		Across	Down			
10	\$50.00	5	2	3 <sup>3</sup> / <sub>4</sub>	7 <sup>9</sup> / <sub>16</sub>	7
12	58.00	6	2	3 <sup>3</sup> / <sub>4</sub>	8 <sup>9</sup> / <sub>16</sub>	9
14	68.00	7	2	3 <sup>3</sup> / <sub>4</sub>	9 <sup>9</sup> / <sub>16</sub>	10
16	78.00	8	2	3 <sup>3</sup> / <sub>4</sub>	10 <sup>9</sup> / <sub>16</sub>	10
18	88.00	9	2	3 <sup>3</sup> / <sub>4</sub>	11 <sup>9</sup> / <sub>16</sub>	11
20	98.00	10	2	3 <sup>3</sup> / <sub>4</sub>	12 <sup>9</sup> / <sub>16</sub>	12
22	108.00	11	2	3 <sup>3</sup> / <sub>4</sub>	13 <sup>9</sup> / <sub>16</sub>	14
24	118.00	12	2	3 <sup>3</sup> / <sub>4</sub>	14 <sup>9</sup> / <sub>16</sub>	14

Larger sizes, add \$6.25 per drop.

Depth, 2<sup>1</sup>/<sub>2</sub> inches.



## Edwards Surface Elevator Manual Reset Annunciates

8-12 Volts A.C. or 6-8 Volts D.C.

### Schedule S

Buzz audible signal.

Smooth, sturdy, reliable reset.

Up and down type equipped with reset push for each column of indications.

Standard black finish.

Special finishes, features, etc. on application.

Order and price by number of drops not by number of floors.

For up to 24 volts a.c. or d.c., no extra charge.



No. 130

No. of Drops	Each	ARRANGEMENT	Across	Down	No. 130—Single Row			No. 130-D—Up and Down Type		
					Over-all Ht. In.	Over-all Width In.	Approx. Wt. Lb.	Over-all Ht. In.	Over-all Width In.	Approx. Wt. Lb.
3	\$23.00	1	3		7 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	4	.....	.....	.....
4	24.25	1	4		7 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	4	.....	.....	.....
5	26.75	1	5		9 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	6	.....	.....	.....
6	29.00	1	6		9 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	6	\$33.50	2 3	7 <sup>3</sup> / <sub>8</sub> 4 8
7	31.50	1	7		12 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	7	.....	.....	.....
8	34.00	1	8		12 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	7	40.25	2 4	7 <sup>3</sup> / <sub>8</sub> 4 9
10	39.00	1	10		14 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	8	45.25	2 5	10 <sup>1</sup> / <sub>8</sub> 4 10
12	43.75	1	12		17 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	9	53.00	2 6	10 <sup>1</sup> / <sub>8</sub> 4 11

For larger sizes, add \$5.00 per drop. Depth, 2<sup>1</sup>/<sub>2</sub> inches.

## Edwards Annunciator Drops

### Schedule C



No. 8

### No. 8 Manual Reset Drop

An efficient drop used in all annunciates. Its compact design gives just as clear an indication but allows smaller, neater annunciators.

Positive Locking.

No. 8.....each \$4.50



No. 80

### No. 80 Manual Reset Drop

The older design used in all hand reset annunciators except the new annunciates.

Positive locking.

No. 80.....each \$4.50



No. 4

### No. 4 Electric Reset Drop

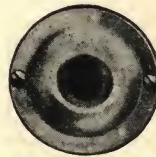
Used in all electric reset annunciators. Uses much less current for both indicating and resetting. The indication is a white arrow which points directly at the name card. When reset, the arrow drops out of sight behind the name card.

The front is of plain glass and as the arrow is between the glass and a dull black background, it can be seen from any angle. Cannot shake or jar out of adjustment. Locked in normal position and cannot indicate until current is passed through magnets.

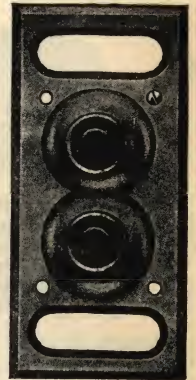
No. 4.....each \$6.80

## Edwards Bronx Entrance Push Buttons

### Schedule S



Nos. 600 & 603



No. 602



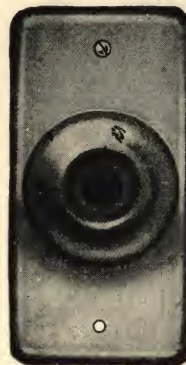
No. 605



No. 606



No. 607



No. 608



No. 609

One piece type entrance push designed to cover all general needs. Sturdy mechanism is fully insulated. Binding posts and screws are large enough for No. 14 wire.

Standard finish satin brass.

Packed with screws in individual boxes for convenient shelf use.

No.	Each	Size Inches	Std. Pkg.	Approx. Wt. Lb. Std. Pkg.
600	\$.20	2 <sup>5</sup> / <sub>16</sub>	2	1
602	.45	2 x 4 <sup>9</sup> / <sub>16</sub>	6	1
603	.20	1 <sup>3</sup> / <sub>4</sub>	12	1
605	.35	1 <sup>1</sup> / <sub>4</sub> x 3 <sup>1</sup> / <sub>2</sub>	12	1
606	.25	1 <sup>9</sup> / <sub>16</sub> x 2 <sup>3</sup> / <sub>8</sub>	12	1
607	.30	2 <sup>1</sup> / <sub>16</sub> x 2 <sup>5</sup> / <sub>8</sub>	12	1
608	.40	2 <sup>1</sup> / <sub>16</sub> x 4 <sup>1</sup> / <sub>2</sub>	12	2
609	.40	2 <sup>1</sup> / <sub>16</sub> x 4 <sup>1</sup> / <sub>2</sub>	12	2



## Benjamin Heavy Duty High Voltage Push-Buttons

### Non-Locking Type, Watertight

Listed by Underwriters' Laboratories  
5 Amperes, 125 Volts

Recommended for use with industrial signals but suitable for most any kind of electrical signaling.

Has quick make-and-break mechanism, positive acting, mounted on base of high heat molded insulating material for use with circuits carrying inductive loads.

Plunger is normally below the surface of the cap so the button cannot be operated accidentally. Waterproof rawhide gasket seals the plunger opening. All joints are watertight. Natural brass finish.

Furnished with unmarked name plate.



### Single Button

Has cast brass casing, with two mounting lugs, and one end boss tapped  $\frac{1}{2}$  inch.

Casing will be tapped for  $\frac{1}{2}$  or  $\frac{3}{4}$ -inch pipe one way or two way if specified, without extra charge.

No.	Each	Description	Wt., Lb.
8493	\$4.25	Open Circuit Type.....	2
8874	4.25	Closed Circuit Type.....	2
6998	1.00	Mechanism Only (Open Circuit).....	$\frac{1}{2}$
6627	1.00	Mechanism Only (Closed Circuit).....	$\frac{1}{2}$



### 2-Gang Button

Has cast brass casing with four mounting lugs and one end boss tapped  $\frac{1}{2}$  inch. Casing will be tapped for  $\frac{1}{2}$  or  $\frac{3}{4}$ -inch pipe one way or two way if specified, without extra charge.

Brass cover fastened to casing with No. 6-32 brass screws.

Name-plate is unmarked and regularly positioned as shown in illustration. Specify position of name-plates in relation to conduit entrance.

No.	Each	Description	Wt., Lb.
8495	\$6.00	Open Circuit, Both Buttons.....	3
8884	6.00	Open Circuit, One Button; Closed Circuit, One Button.....	3

### Locking Type—Watertight

For use in round-houses, mines, etc.



No. 8734

Has brass casing with two mounting lugs, and one end boss tapped  $\frac{1}{2}$ -inch.

Casing will be tapped for  $\frac{1}{2}$  or  $\frac{3}{4}$ -inch pipe one way or two way if specified, without extra charge.

Cover supplied with watertight stuffing box for plunger key.

Weight, 2 pounds.

No. 8733, Closed Circuit Type.....	each \$5.00
No. 8734, Open Circuit Type.....	each 5.00

## Edward Screwless Pushes

Schedule S



No. 630



No. 631



No. 632



No. 633

Hole can be drilled, wires connected and the flat subplate can be fastened to the surface with screws. Finished plate snaps firmly to subplate with no screws to mar the appearance.

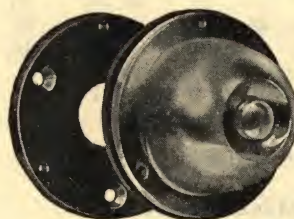
Fully insulated; the contact is pure phosphor bronze, self cleaning in operation. The finished plate is heavy brass. Not sprayed, but brushed and lacquered.

No. 630 makes an attractive feature for all colonial type doorways. No. 631 is decorative but conservative. It is ideal for plaster walls as well as front entrances. No. 632 is smart and conservative and particularly adapted to narrow spaces. No. 633 is for dentists offices, etc.

No. ....	630	631	632	633
Each.....	\$ .37	.37	.27	.45
Style.....	Eagle	Oval	Rectangular	Indicator
Standard Package.	6	6	6	6

## No. 1786 Edwards Surface Type Weatherproof Push Button

Schedule S



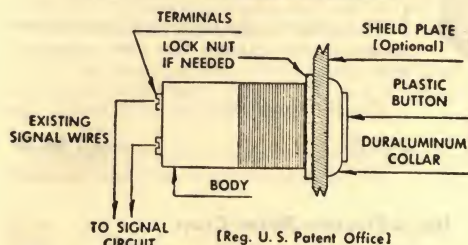
Standard package, 1.

A neat solid brass push button absolutely dependable for use outside of buildings, residences, etc.

Also recommended for marine work, ice plants, chemical plants, and all places where dampness, exposure, or fumes will corrode and destroy the mechanism of an ordinary push button.

No. 1786.....	each	\$4.40
No. 1786C, With Plate Threaded for $\frac{1}{2}$ -Inch Conduit.....	each	6.80

## Philip and Lee Viza-Nite Illuminated Push-Button



BUILT WITHIN PROVISIONS OF NATIONAL ELECTRIC CODE

For chimes, door bells, horns, buzzers, and signal lights. Electrically illuminated by the same safe voltage used to ring the door bell or door chimes.

Simple to install. Requires no additional wiring; uses existing door bell wiring.

Packed 30 to a carton.

Each.....	\$1.50
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When ordering, specify whether for buzzer (6-8 volts) or chimes (10-12 volts).



### Edwards Cast Entrance Pushes

Solid Brass—Screwless  
Schedule S



No. 640



No. 641



No. 642

Solid brass casting, highly polished to a mirror-like finish; lacquered. Construction permits push to be mounted in any hole  $\frac{5}{8}$  inch and larger. Shell white rectangular center is easily depressed giving positive contact directly on to large terminal screws. Molded shell containing mechanism insulates this push button.

One-piece mechanism screws into door jamb or molding (screws are furnished) and cast escutcheon snaps firmly in place, being held by two extra strong fasteners. Cast escutcheon cannot be removed or mechanism tampered with without inserting screwdriver into slot in bottom and prying apart.

**No. 640 Rectangular Type.** Particularly adapted for narrow door jambs, etc. Escutcheon plate—width,  $1\frac{1}{16}$  inch; height,  $2\frac{1}{4}$  inches; thickness,  $\frac{3}{8}$  inch.

**No. 641 Octagonal Type.** An ideal design for most types of architecture. Escutcheon plate—width,  $1\frac{1}{16}$  inches; height,  $2\frac{1}{2}$  inches; thickness,  $\frac{3}{8}$  inch.

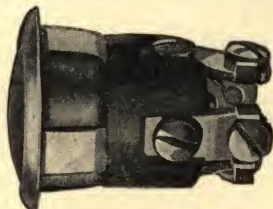
Standard package, 6.

No. ....	640	641	642
Each .....	\$1.50	1.50	1.50

**No. 642 Oval Type.** Represents the smart adaptation of the conventional front entrance push button. Escutcheon plate—width,  $1\frac{1}{16}$  inches; height,  $2\frac{1}{2}$  inches; thickness,  $\frac{3}{8}$  inch.

### No. 265 Edwards Low Voltage Return Call Push Buttons

Schedule C



For 3-wire return call systems. Also used where a number of pushes are installed, one for each bell, with one push to ring all bells.

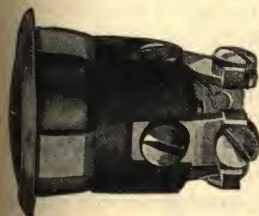
Standard finish, nickel; brush brass when specified.

Standard package, one; approximate weight, 2 ounces.

No. 265. Insulated, Fits  $\frac{3}{4}$ -Inch Hole.....each \$2.15

### Edwards Low Voltage Multiple Contact Push Buttons

Schedule C



Has four insulated contact springs on which a plunger contacts when depressed. The contacts may be connected to provide three circuits with one common or strapped together to close two circuits with double contact capacity. Phosphor-bronze, wiping contacts.

Standard finish, nickel; brush brass when specified.

Standard package, one; approximate weight, 2 ounces.

No. 260, For Open Circuit, Fits  $\frac{3}{4}$ -In. Hole....each \$1.60  
No. 260C, For Closed Circuit, Fits  $\frac{3}{4}$ -In. Hole..each 2.35

### Edwards Flush Push Buttons

Schedule S  
For Low Voltage  
Flat Pearl Center Types



No. 620

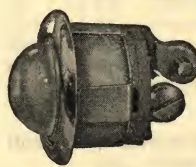


No. 59

For general utility purposes. Stamped shell, phosphor bronze springs, self-cleaning contacts, self-forming binding posts. Spring clips hold push firmly in mounting hole.

No.	Each	Description	Std. Pkg.
620	\$ .40	Insulated, Fits $\frac{5}{8}$ -Inch Hole.....	12
59	.80	Insulated, Fits $\frac{3}{4}$ -Inch Hole.....	6

### No. 625 Raised Center Types



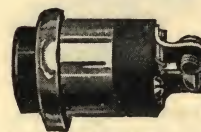
This push has a raised white glass center but is otherwise exactly the same as 620. Can also be furnished with black, red, blue, yellow and other color centers at no extra charge. White center is standard and furnished unless otherwise specified. Standard finish, nickel; brush brass when specified.

No.	Each	Description	Std. Pkg.
625	\$ .60	Insulated, Fits $\frac{5}{8}$ -Inch Hole.....	6

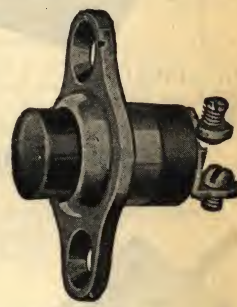
### Protruding Center Type



No. 621



No. 116



No. 622

With solid turned brass shell. Phosphor-bronze springs, self-cleaning contacts.

No. 621 has spring clips to hold push firmly in  $\frac{5}{8}$ -inch mounting hole. No. 622 has escutcheon for wood screw mounting in  $\frac{1}{2}$ -in. hole. No. 116 is for forced fit in  $\frac{1}{2}$ -in. hole.

No.	Each	Description	Std. Pkg.
621	\$ .85	Insulated, With Spring Clips, Fits $\frac{5}{8}$ -Inch Hole	6
622	1.15	Insulated, With Escutcheon, Fits $\frac{1}{2}$ -Inch Hole	6
623	1.05	With Lock Nut, $\frac{5}{8}$ -Inch Hole.....	6
116	1.70	Insulated, Forced Fit, $\frac{1}{2}$ -Inch Hole.....	1

### No. 850 Edwards High Voltage Push Button

125-250 Volt  
Underwriters' Listed  
Schedule S



Recommended for panel boards, plates, etc. Has only one moving member and two coil springs. Contacts are phosphor bronze of ample area, self-cleaning.

Ratings: 6 amperes at 125 volts a.c.; 3 amperes at 125 volts d.c.; 3 amperes at 250 volts a.c. and 1 ampere at 250 volts d.c.

Low voltage ratings by test: 10 amperes at 48 volts a.c., 32 volts a.c., 24 volts a.c. and d.c., 12 volts a.c. and d.c.; 8 amperes at 32 volts d.c.; 7 amperes at 48 volts d.c.

Standard finish, nickel; brushed brass when specified.

No. 850.....each \$3.30



## No. 146 Edwards Push Button Blocks With Numbered Pushes

### Schedule S



Of genuine molded bakelite, with a removable weighted base and a sponge rubber pad. Flush, numbered, midget pushes are supplied with block. Can be mounted on the side of a desk with the use of a concealed mounting hole provided for that purpose. Will not mar or deteriorate.

Standard finish, black, mahogany or walnut. Std. pkg. 1.

No. of Buttons.....	1	2	4	6
Without Cord.....each	\$2.75	3.25	4.75	6.85

## No. 197 Edwards Bakelite Directory Desk Pushes

### Schedule S



Has phosphor bronze scraping contacts and is fully insulated.

Base is covered with soft sponge rubber.

Has changeable name cards.

Standard color, black. Mahogany, oak or walnut, no extra charge.

Standard package, 1.

No. of Buttons.....	1	2	4	6
Without Cord.....each	\$3.25	3.90	5.60	9.50
Weight.....ounces	1	1	1	2

## Edwards All-Metal Desk Pushes

### Schedule S



A fine desk push for neat appearance and convenient usage.

Heavy gaged steel body, Bonderized. A smaller and neater unit, taking less space on the desk. Molded centers. Completely insulated. One row of buttons for up to 10 buttons. Over 10 buttons, double rows.

Names are almost flush with top plate thus preventing dust ridden crevices and allowing easily readable names.

One complete directory card which is easier to handle than individual cards.

Transparent celluloid keeps names clean.

Black finish is standard with brushed nickel top plate.

Specify exact number of buttons when ordering.

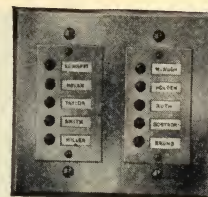
No. of Buttons	Without Buzzer		With Buzzer	
	No. 192 without Cord Each	Approx. Wt. Oz. Push Only	No. 194 without Cord Each	Approx. Wt. Oz. Push Only
1	\$7.30	1	\$12.40	1
2	9.10	1	13.75	1
4	12.60	1	19.75	2
6	16.00	2	28.10	2
8	19.60	2	37.50	2
10	23.00	2	.....	..
12	31.80	2	.....	..
Add per Button.	2.50	...	3.00	..

## No. 107 Edwards Push Button Panels

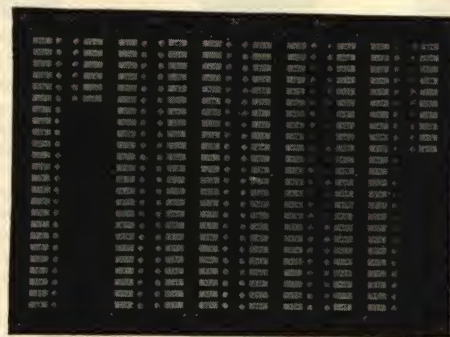
### Schedule C



5-Button



10-Button



240-Button

Designed to meet the requirements of small schools, public buildings, offices, etc., where no All or Master push button is required. This panel is ideal where space is limited and where economy is a factor.

Sizes 6 to 10 buttons inclusive are mounted on a plate which fits a 2-gang switch box; 11 to 15 buttons are mounted on a plate to fit a 3-gang switch box. Price does not include back boxes. Larger sizes are provided with a steel wall box for flush mounting. Terminal board is provided suitable for mounting in back box and is wired to panel on sizes 16 buttons and larger. A panel 17½x13 inches accommodates 240 buttons.

Brushed brass finish is standard.

3 to 15 Buttons.....	per button	\$2.75
16 Buttons and up.....	per button	4.10

## No. 650 Edwards Solid Forged Brass Push Buttons

### Schedule S



Recommended for better grade apartment and residence work.

Sturdy mechanism is entirely insulated and securely riveted to the solid brass case, making the push all one-piece.

Connections are easily made direct to two large screws on back of the push.

Can be mounted on metal trims without fear of short circuiting.

Oval head wood screws ¾-inch No. 6 are furnished standard to match finish.

Overall dimensions: Height, 3¼ inches; width, 1½ inches; depth, ½ inch.

Standard finish, brush brass with antique (black) mat.

Standard package, 1.

No.	Description	Each
650	Brush Brass with Antique (Black) Mat.....	\$1.45
650G	Chromium, Polished or Dull as Specified....	2.30



## No. 60 Edwards Flush Type Screwless Push Escutcheons

### Schedule E



For  $\frac{5}{8}$ -inch pushes. For use on plaster or where larger than the midget push is required. Iron sub-plate is first secured to the wall. There being a number of screw holes, it is always possible to engage a lath. The brass plate is then placed over the iron plate and push button pressed into place. Spring clips on side of the push button grip iron plate securely and hold button and top plate in place.

Standard finish, nickel; brush brass or cadmium, when specified.

Standard package, 10. Weight, 5 ounces.

No. 60.....each \$ .40  
Push buttons not included in price of escutcheons.

## Edwards Flat Push Button Escutcheons

### Schedule E



No. 62



No. 62D

For  $\frac{5}{8}$ -inch pushes. Used with either flat pearl center, round glass center or protruding bakelite center push button. Spring clips on side of pushes hold them securely in place. Plates are solid brass.

**When ordering**, state size of push to be used.

Standard finish, nickel; brush brass or cadmium, when specified.

Standard package, 10. Assortment permitted to make standard package.

No. ....	62	62D
Each.....	\$ .35	.35
Type.....	Rectangular	Diamond
Width.....inches	1 $\frac{1}{4}$	1 $\frac{1}{2}$
Height.....inches	2	2 $\frac{1}{4}$
Approx. Weight, Std. Pkg.....oz.	8	8

Push buttons not included in price of escutcheons.

## Edwards Bakelite Pendant Pushes

### Schedule S



Suitable for residence and hospital work. Bakelite finish will not become scratched or marred like wood. Light in weight, but exceedingly strong and will not warp, crack or chip off.

No. 67 has a flat pearl center.

Standard package, 6 of one color. Approximate weight, 1 pound.

No. 67, Black or Mahogany.....each	\$ .80
No. 67W, White Enamel.....each	1.00

## No. 206 Edwards Table Pushes

### Schedule S



Clamps on table without scratching. Used in connection with floor push or wall plug. Self-contained with button and contact built into spring clamp base. Self-cleaning, phosphor bronze contacts.

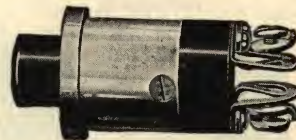
Standard nickel finish. Standard package, 6. Weight, 1 pound each.

No. 206.....each \$1.65

## Edwards Quick-Break Push Buttons

### 110-220-Volt

### Schedule S



No. 85

Sturdy mechanism and heavy contacts so designed that no matter how slowly the finger pressure is released the contact breaks quickly.

Standard finish, nickel; brush brass when specified.

Standard package, one.

No.	Each	Description	Voltage
85	\$3.00	Forced Fit in $\frac{3}{4}$ -In. Hole.....	110
85A	7.75	Forced Fit in $1\frac{1}{8}$ -In. Hole.....	220
85L	3.30	Locknut Type, Fits $\frac{7}{8}$ -In. Hole.....	110
85C	9.75	Closed Circuit, Forced Fit in $1\frac{1}{8}$ -In. Hole.....	110

## No. 235 Edwards Receptaplug

### For Non-Carpeted Floors or Rugs

### Schedule S



A compact attachment plug for use where No. 290 floor tread is used beneath floor covering and can be reached to change its position.

Receptacle mortises into floor. Rubber capped plug is inserted flush into receptacle leaving no bulge.

Plug will not fit standard lighting receptacles, thus preventing the possibility of shorting the line.

Satin brass finish with brown rubber cap.

Furnished without cord and push.

Weight, 2 pounds.

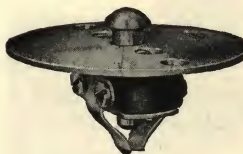
Standard package, 6.

No. 235.....each \$1.25  
Pin Only.....each .50

## No. 237 Edwards Floor Pushes

### For Uncarpeted Floors

### Schedule S



Provides a means of closing a signalling circuit at a fixed location on the floor.

Receptacle mortises into floor and allows pin only to extend above floor line. Slight pressure on pin causes contact.

Standard package, 6. Weight, 2 pounds.

No. 237, Floor Push with Pin.....each \$1.00  
Pin Only.....each .20

## No. 290 Edwards Dixie Floor Tread

### Schedule S



Recommended as a dining room push for calling servant during meals. Contact easily made by pressure at any point. Rubber covered base prevents push from sliding. The connectors are firm and reliable and whole device is designed for quick, easy installation. Cord enters through brass strap which holds it securely. Standard finish is satin brass.

Standard package, 10.

No. 290, Approx. Wt., 2 Pounds Each.....each \$1.50



**Edwards Answercalls**  
**For Return Call Push Button Stations**  
 8-12 Volts A.C. Standard  
*Schedule C*



No. 139



No. 140

It fits any standard single gang switch box  $2\frac{3}{8}$  inches deep and takes any standard push button switch plate.

**No. 139** has buzz audible signal with no contacts or pivots and requires no adjustment. May be varied after installation, from loud low tone to a soft high tone through hole in sub-plate. Marked binding posts easily accessible.

**No. 140** has annunciator type drop, which leaves a visual signal. Operation of push button, when call is answered, automatically resets drop. Recommended for use in Y.M.C.A. buildings, dormitories, and other places where it is desirable to leave an indication that a call has been made to the room during the occupant's absence.

No. 139, Flush Non-Indicating, Wt., 1 Pound.....each \$5.50  
 No. 140, Flush Indicating, Wt., 1 Pound.....each 11.40

**No. 136 Edwards Surface Type Return Call Push Button Stations**

D.C. or A.C.  
*Schedule C*



Designed particularly for installation in existing buildings.

Provides a neat appearing plate mounted on a shallow cast box, which provides entrance for conduit or open wires as desired.

The audible signal is an Edwards Double Adjustment Lungen Buzzer, and station is completely wired for installation with Edwards Return Call Push.

The cast box is rubberoid black, the plate brushed brass or nickel.

Standard package, 1; approximate weight,  $1\frac{1}{2}$  pounds.

No. 136, With Metal Plate.....each \$7.30  
 No. 136, With Bakelite Plate, If Specified.....each 7.70

**No. 137 Edwards Flush Type Return Call Push Button Stations**

D.C. or A.C.  
*Schedule C*



A flush plate for mounting on a standard single gang switch box.

The audible signal is an Edwards Double Adjustment Lungen Buzzer, and the station is completely wired for installation with Edwards Return Call Push.

Standard finish, brushed brass or nickel.

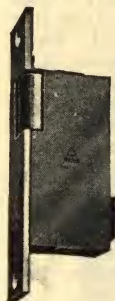
Standard package, one.

Approximate weight per standard package, 1 pound.

No. 137, With Metal Plate.....each \$6.15  
 No. 137, With Bakelite Plate, If Specified.....each 6.50

**No. 9 Edwards Door Openers**  
**Economy, Mortise Type**  
*Schedule S*

$4\frac{1}{2}$ -6 Volts D.C. or 8-12 Volts A.C.



Face plate and nosing made of solid brass. Used extensively for low cost apartment jobs.

Fits same size mortise as same shape openers of other manufacturers. Height,  $3\frac{3}{8}$  inches; depth,  $2\frac{1}{8}$  inches; thickness, 1 inch; nosing opening,  $1\frac{1}{16}$  inches; face plate,  $5\frac{1}{8} \times 1\frac{1}{4}$  inches.

May be used on either right or left hand doors.

Standard package, 6.

Approximate weight, 9 pounds.

No. 9.....each \$3.10

**No. 152 Edwards Door Openers**  
**Commercial, Rim Type, Solid Nose**

*Schedule S*

$4\frac{1}{2}$ -6 Volts D.C. or 12-16 Volts A.C.



For surface locks, thin frames, etc. Frame is cast iron with brass finish face plate and solid brass nosing.

Height, 2 inches; depth, 3 inches; thickness,  $1\frac{1}{8}$  inches; nosing opening,  $1\frac{1}{4}$  inches.

Approximate weight 2 pounds.

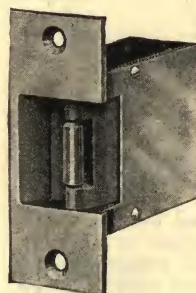
No. 152.....each \$7.50

**No. 154 Edwards Door Openers**

**Mortise Type, Roller Nose**

*Schedule S*

$4\frac{1}{2}$  Volts D.C. or 12-16 Volts A.C.



Height,  $3\frac{3}{8}$  inches; depth,  $2\frac{7}{8}$  inches; thickness,  $1\frac{1}{4}$  inches. Nosing opening,  $1\frac{1}{4}$  inches. Face plate,  $1\frac{1}{4} \times 3\frac{3}{8}$  inches. Brass finish.

May be used on either right or left hand doors.

Approximate weight, 2 pounds.

No. 154.....each \$7.00





## Edwards Burglar Alarm Springs

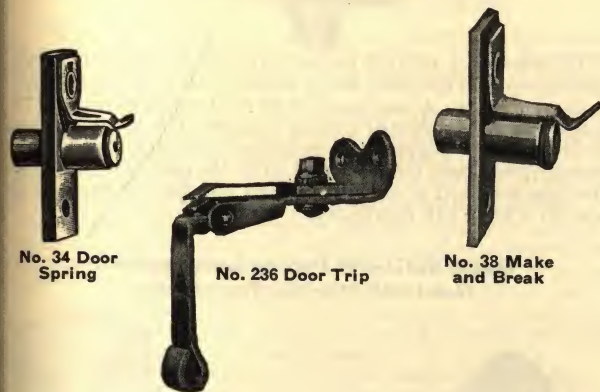
*Schedule S*

Placed in the frame several inches above the lower end of the upper sash—and the same distance below the upper end of the lower sash. Each Sash should be mortised so that the nosing of the spring will be set in the recess when the window is closed. Mortise should be continued (beyond the necessary point) to permit opening of window for ventilation. Without mortise, any one trying to enter house and knowing of window springs, can easily open window gradually, and hold spring depressed with the finger.

Edwards Springs, when used properly as described, are classified as follows:

Open circuit window springs—nosing depressed contact is closed. Closed circuit window springs—nosing depressed contact is open. Open circuit window springs—nosing depressed contact is open. Open circuit door springs—plunger depressed contact is open. Closed circuit door springs—plunger depressed contact is closed.

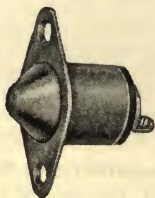
### Open Circuit Spring



No.	Each	Description	Size Plate Inches	Std. Pkg.
34	\$.45	Door.....	2 x 5/8	12
38	.45	Make and Break.....	2 x 5/8	6
236	1.40	Door Trip.....	2 1/4 x 1 1/4	6
<b>Closed Circuit Spring</b>				
39	\$.45	Door.....	2 x 5/8	6

## Edwards All-Purpose Contactors

*Schedule S*



Designed so pressure from any direction will depress the nosing. The contactor fits a 3/4-inch hole. Ideal for use on doors, windows, drawers, etc. Vulcoid insulation, phosphor bronze contacts of ample capacity for all low voltage work.

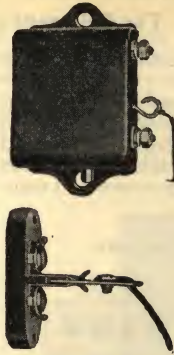
No. 44—Pressure on nosing opens the circuit. No. 45—Pressure on nosing closes the circuit. No. 46—Momentary contact; pressure on nosing makes, then breaks the circuit and repeats the operation in returning to normal.

Standard package, 6.

No.	44	45	46
Each.....	\$.80	.80	.80

## Edwards Burglar Alarm Traps

*Schedule S*



Installed with cord or wire stretched across entrances, open spaces or attached to doors, windows, etc. Slightest movement of cord or wire operates trap which makes and holds contact causing continuous ringing of bell without additional devices.

### Covered Type

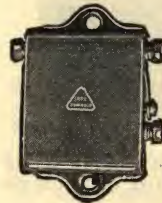
Standard package, 6. Can be assorted.  
No. 27, For Open Circuit.....each \$2.00  
No. 27-C, For Closed Circuit.....each 2.00

### Uncovered Type

Standard package, 6. Can be assorted.  
No. 29, For Open Circuit.....each \$.50  
No. 29-C, For Closed Circuit.....each .50

## No. 26 Edwards Constant Ringing Drops

*Schedule S*

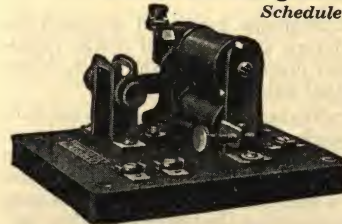


Especially designed for use in burglar alarm systems. With momentary closing of protective circuit this device causes bells to ring continuously, irrespective of subsequent opening of protective circuit. Plunger resets mechanism.

Recommended for battery systems where alarm may ring for several hours. Cuts own magnet out of circuit. Standard up to 16 V. a.c. or 12 V. d.c. Exact voltage must be specified. Standard package, 1.  
No. 26.....each \$3.50

## Edwards Burglar Alarm Relays

*Schedule S*



### No. 1238 Open Type For D. C. Only

Adjustable for open or closed circuit operation. Pure hard drawn silver contacts. Contacts 1 ampere; 250 ohms recommended for closed circuit systems. Standard package, 1.

20 Ohms (Allows 10 Ohm Line Resistance on 1.5 V. d.c. Supply).....	each	\$7.50
250 Ohms (Allows 175 Ohm Line Resistance on 6 V. d.c. Supply).....	each	8.75
251 to 600 Ohms. Specify Exactly.....	each	10.00

### No. 1239 Enclosed Type For A.C. or D.C.



A small, compact, open or closed circuit type as specified. Contacts 3 amperes 110 volts a.c., 6 amperes up to 48 volts a.c. Contacts 1 ampere, 110 volts d.c., 2 amperes up to 48 volts d.c.

Standard package, 1.	
8-24 Volts.....	each \$7.50
25-48 Volts.....	each 8.50
110 Volts.....	each 10.00

## No. 95-B Edwards Burglar Alarm Lock Switches

*Schedule T*



Lock switch to be mounted outside the door so persons having key may enter without giving alarm. Polished brass finish.

Approximate weight, 1/2 pound per standard package of 1.  
No. 95-B, With Rod to Go through Door, Fastened by Nuts Inside.....each \$7.95  
Extra Keys.....each .80



## Webster Electric Telespatch Systems

### For Railroads and Other Industries

Quick, convenient, dependable intercommunication is often the measure of industrial efficiency.

Provides instant voice-to-voice contact from a central point with individuals in the most remote sections of large railroad yards, ship yards, steel mills, or other widespread industrial operations. Their use makes possible the ready transmission of orders and reports, the coordination of processes and complete control of operations at all times.

#### Model S6357 Master Control Stations



Extremely rugged construction, housed in a gray metal cabinet and so designed as to allow the control operator an unimpeded view of the traffic area.

The standard system provides a maximum of 20 intercommunicating circuits, ten paging circuits and one paging "all-call" circuit.

Keys are of the sturdy telephone type and designed for rough service. Indicating lamps are of special design developed for intercommunication units supplied the U. S. Navy for shipboard use under actual battle conditions.

**Upper Keys.** Twenty individual speaker stations are contacted by switching these ten keys to an up or down position. The annunciator lights operate to indicate that contact button has been pushed at speaker station. An annunciator buzzer also gives warning of such a call. Ten of these speakers may be paged simultaneously by switching the ten keys to the "on" position.

**Lower Keys.** The ten paging areas are contacted by the three keys at the left and the two left-hand keys at the right. The key at the far right is the "all-call" key in both up (locking) or down (momentary) positions. The meter (center) is a gauge of outgoing volume and indicates when voice is at most effective speech level. Volume is controlled by knob below meter. Selector switch (left) provides for shifting from No. 1 to No. 2 amplifiers if necessary.

#### Model S6280-1 Microphone Units



Consists of a dynamic microphone mounted on a heavy steel desk stand. A push button is provided for operation of the talk-listen relay circuit.

Where desired a foot switch may be used in conjunction with this circuit.

The microphone is plugged into the small steel box and shielded wires are run to the amplifier unit.

Railroads find these systems ideal to speed up loading, unloading and handling freight, the making up of trains, and control of switching operations in large classification yards.

To meet rugged requirements of severe industrial service, many special features are incorporated in this equipment. Metal, weatherproofed housings are provided, and all parts are carefully selected for sturdy construction and long life operation.

#### Model S6358 Intercommunicating Speakers



Voice-to-voice contact between the master control station and individuals is carried on by means of these intercommunicating speakers. A maximum of 20 of these speakers may be connected to a standard control station. The speakers have a threaded pipe coupling for mounting on a pipe standard. A weatherproof push button, supplied by the user, is mounted on the pipe standard to actuate a buzzer and light at the control station when a call is initiated.

#### Model S6471-PM Paging Loudspeakers Model S6437 Matching Transformers



Model S6471-PM



Model S6437  
With Cover



Model S6437  
Cover Removed

Ten paging speaker circuits are provided for connecting to any combination of speakers within the limits of the power handling capacity of the paging amplifiers.

Designed for operation with high power amplifiers. Made with an anodized aluminum diaphragm and special weather-proofing for long life under severe weather conditions.

#### Model S6375 Amplifier and Relay Cabinets

Provided to deliver 50, 100, or 300 watts of audio power. A driver amplifier feeds the output amplifier from the 20-ohm dynamic microphone.

Standard master control units, with 20 intercommunicating speakers, require three relay panels with a total of 21 sensitive telephone type relays. These are used in the operation of annunciator lights and buzzers. A talk-listen relay switches circuits from "listen" to "talk" by means of the microphone push switch, or an added foot switch.

A load resistor panel contains mounts for standard 10-watt wire wound resistors. These provide proper loading of amplifiers regardless of the number of selector keys used. A 24-volt d.c. power supply is provided to operate talk-listen relay, annunciator relays, and "B" supply cutoff relays in the amplifiers. The steel cabinet in which these are housed is 74 inches high, 22 inches wide, and 16 inches deep.



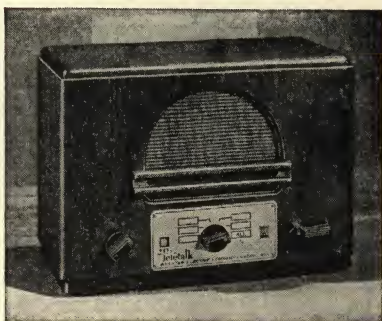
### Webster Electric Teletalk Amplified Intercommunication Systems

Teletalk is amplified voice intercommunication. It is adaptable to every size and type of business. It is available in six basic models, each obtainable with special features to suit specific conditions. Capacities of individual models range from 5 to 24 stations. Systems based on any one model may be used for departmental operations or they can be combined to provide complete intercommunication for an entire office, plant or building operation.

Teletalk eliminates the countless, unnecessary and time-wasting steps and time consuming conferences that are inherent in any organization activity.

Three series available are M or Master, S or selective and SS or super selective.

**Models 105 and 110**



Particularly suited for use in small offices, service organizations, retail stores or factory groups, where intercommunication between a small group of executives or employees is desired.

Used for the purpose of securing information quickly, handling will-calls and alteration requests; information regarding credits, shipments and for similar purposes. Also used in large homes and apartments and on large estates for convenient and instant communication with servants.

Available in the M series in which the basic unit has complete control of the intercommunication and is not secretive, but speaker microphones can be used for two-way conversation. Also available in the SS series which is secretive and in which each station uses a basic Teletalk unit, each can select stations, call any other station or reply to calls with full secrecy. Available with earphones.

Cabinet is two-tone, solid walnut, hand-rubbed finish.

Size, 11½ inches wide, 8½ inches high, 6¼ inches deep. Power supply, 110-125 volts a.c. or d.c., 50-60 cycles. Station capacity, Model 105, 5 stations, Model 110, 10 stations. Power consumption, approximately 35 watts.

**Models 206 and 206-A**



Ideal for executives of small businesses; advertising agencies, lawyers' offices, architects and consulting engineers, and others, where appearance as well as the utmost operating convenience are the dominating factors.

For in a system made up of these models it is easy to select a station. Simply trip up the key of the station for instant communication. Has a telephone handset for confidential use. A broader service is supplied in the Model 206-A through the annunciator system, which identifies the station that has called in the event the person called was not at his desk at the time of the call.

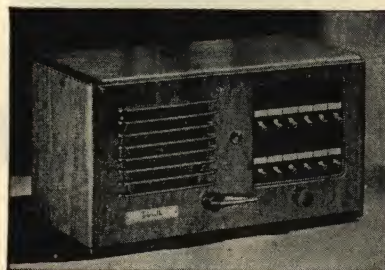
Available in the M and S series. (See Model 105.)

Cabinet is two-tone solid walnut, with hand-rubbed finish and bronzed speaker grill. Model 206-A has bronzed annunciator panel with indicators of contrasting aluminum finish.

Size, 13½ inches wide, 7½ inches high, 6¾ inches deep. Power supply, 110-125 volts a.c., 50-60 cycles. Station capacity, 6 stations.

Send for catalog containing complete information on Teletalk Amplified Intercommunication Systems

**Models 212, 212-A and 224**



Ideal for professional and service organizations, Models 212, 212-A and 224 offer a wide range of service for executive and inter-department communication in the larger types of business.

Provide just the type of service demanded in larger organizations. For example, the conducting of conferences without any executive leaving his desk. This is particularly desirable. It means that a conference can be called by simply tripping the Teletalk selector keys bearing the name or number of each executive. As each one trips up the keys of those who are to be a part of the conference, every man listens to the words of the speaker and each one can speak as thoughts occur to him. All the time consumed in going to one office or waiting for the group to gather is eliminated. Has a telephone handset for confidential use.

Available in the M and S series. (See model 105.)

Cabinet is two-tone solid walnut, with hand-rubbed finish and bronzed speaker grills.

Size, 13½ inches wide, 7½ inches high, 6¾ inches deep. Power supply, 110-125 volts a.c., 50-60 cycles. Station capacity, 12 stations with or without annunciators, 24 stations without annunciators.

**Models 512, 512-A and 524**



Designed for the business executive who desires the utmost in convenience, appearance, simplified operation, maximum secrecy and the widest possible range of service.

With separate microphone on top of the cabinet. The speaker is for reception only. Has a telephone handset for confidential use. No manual operation of a Talk-Listen switch is required. The user need only trip the keys in the panel to talk with one or a number of stations. If any one of these stations is busy, the amber pilot light goes out. The light will go on again as soon as the line is clear. Then proceed to talk. In the event the station with which you wish to communicate is located in a noisy location, the volume can be greatly increased by pushing the extra-volume knob located under the speaker.

Available only in S series.

Cabinet is two-tone burl walnut with hand-rubbed finish and bronzed speaker grill and inbuilt microphone.

Size, 13½ inches wide, 7½ inches high, 6¾ inches deep. Power supply, 110-125 volts a.c., 50-60 cycles. Station capacity, 12 stations with and without annunciators, 24 stations without annunciators.



## Webster Electric Teletalk Amplified Intercommunication Systems

### Speaker-Microphones



No. 5A-45B

Many buyers who install a Teletalk Intercommunication System—particularly an M series system—find there are some locations at which complete intercommunication service is not necessary.

To meet this requirement and reduce expense for the purchaser, we recommend the use of Speaker-Microphones. However, where paging only is required, Speaker-Microphones will be used at all stations except where the paging originates.

**Model 5A-45** will prove highly satisfactory wherever the noise level is low and the room or department is small. This unit can be used with all models in M series for two-way communication; in the S series, for one-way communication and with all paging models.

**Model 5A-45B** is intended for use only with annunciator models.

**Model 10B-45** is a large, powerful unit which can be used in both M and S series. It is primarily intended for use where the area to be covered by either intercommunication or paging is

large or where the noise level is higher than can be overcome by the power of the No. 5A-45 unit.

**Model 8C-45** serves the same purposes as the No. 10B-45 except that it is required where the air has a high moisture content, or where the speaker must be located out-of-doors.

Equipped with button to call in to master station.

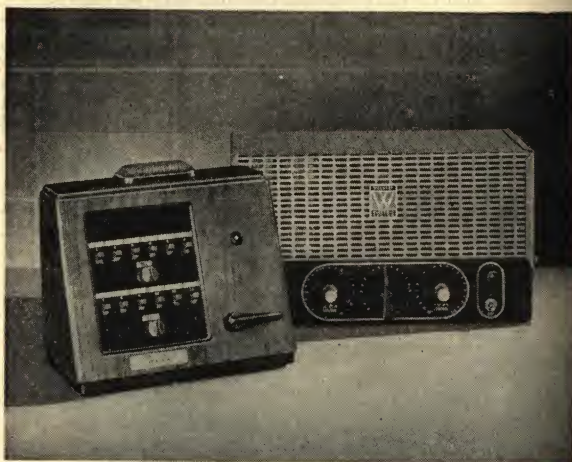
### Webster Electric Paging Systems

#### Models 1006 and 1012



#### Models 10112, 10212, 10124 and 10224

With Amplifier



It is an established fact that in paging, an individual responds much quicker to a voice calling his name than he does to a signal which has been assigned to him.

Many people whose places of business are now equipped with Teletalk Intercommunication Systems find that they are not getting maximum benefit from them because of the tendency to use the system to too great an extent for paging. These two models—for paging only—are the answer. They are particularly designed for office paging.

Operation is simple and the scope of service is broad.

**Model 1006** has a capacity of six stations. Each station may be paged individually, or by the use of the all-call feature, all stations can be paged at one time.

**Model 1012** has a capacity of twelve stations. It also has the all-call feature.

Cabinet is two-tone solid walnut, with hand-rubbed finish and bronzed speaker grille.

Size,  $13\frac{1}{8}$  inches wide,  $7\frac{1}{8}$  inches high,  $6\frac{3}{4}$  inches deep. Power supply, 110–125 volts a.c., 50–60 cycles.

Designed to bring Teletalk's fine design and excellent tone as an answer to the many requests for a satisfactory system for paging for factories, warehouses and in other locations where the noise level is high.

Features are the inbuilt microphone in the instrument panel, all-call or group-call provisions, a separate, remotely located, beam power amplifier of either 12 or 50 watts output with tamperproof adjustments for tone and volume. The control cabinet, which can be placed on the operator's desk is the only part of the system that need be visible.

Any of the Teletalk speakers or special speakers, if required, can be used with these models.

Cabinet is two-tone solid walnut with hand-rubbed finish. Amplifier is metal enclosed with three-tone, modernistic finish.

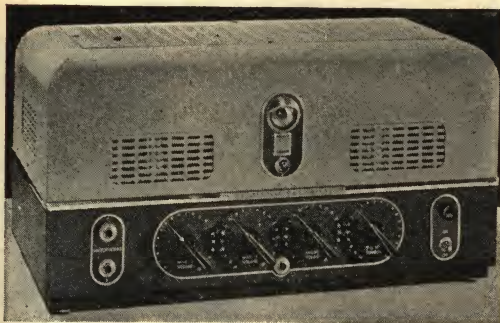
Cabinet size,  $9\frac{3}{8}$  inches wide,  $7\frac{1}{2}$  inches high,  $5\frac{1}{4}$  inches deep; 12-watt amplifier size,  $13\frac{3}{4}$  inches wide, 8 inches high, 7 inches deep. Power supply, 110–120 volts a.c., 50–60 cycles. Station capacity, Model 10112, 12 stations with all-call switch; Model 10212, 12 stations with 2 group-call switches; Model 10124, 24 stations with all-call switch; Model 10224, 24 stations with 2 group-call switches.

Send for catalog containing complete information on Teletalk Amplified Intercommunication and Paging Systems.



## Webster Electric Teletalk Public Address Equipment

### Model 18-50 50-Watt Amplifiers



Specifically designed for use in a sound system requiring high volume levels. It has all of the features necessary to provide maximum efficiency and value. A full selection of output impedances is available on four speaker plug receptacles. It has the further advantage of allowing booster amplifiers to be added to make up a sound system of 500 watts total power output. A maximum of nine Model 19-50 booster amplifiers may be connected, with interconnecting cables furnished.

All necessary amplifier connectors are furnished and are plainly marked. A minimum of controls are employed to simplify operation. All components are operated well below their ratings. Separate volume and mixing controls are provided for each of two high impedance microphone inputs and one dual tone control provides attenuation of bass or treble response. Inverse feedback is incorporated to provide maximum power output with minimum distortion. A cathode ray "eye" tube is used as an amplifier overload indicator to permit the amplifier to be operated up to its full power output without danger of overload distortion.

### Model 50 TN 50-Watt Portable Sound Systems



Consists of:

- 1—Model 18-50 amplifier,
- 1—Model S4659 carrying case for Model 18-50 amplifier,
- 1—Model S4546-1 crystal microphone with 20 feet of shielded cable and plug,
- 1—Model S4549 microphone floor stand,
- 2—Model S4368 heavy duty 12-inch permanent magnet dynamic loudspeakers, each equipped with 50 feet of rubber covered flexible cord and plug,
- 1—Model S4637 speaker carrying case.

All of this equipment except the microphone and stand is contained within two portable carrying cases, one hinged top type for the amplifier and one split type which forms the loudspeaker baffles when open. Cases are of heavy plywood construction with metal braced corners and are finished in black Fabricoid.

Catalog Information on Other Models Available on Request

## Guided Radio Portable Electric Megaphones

Amplifies 2500 Times



Used wherever it is necessary to lift the human voice above the tumult of traffic, conflagration, storms, industrial noises or sport spectators.

Equipped with batteries for self-operation and portability. Light in weight.

Has weatherproof case and is furnished with combination handle and shoulder strap.

### No. A126 Chief Amplifier

Provides more than 1000 ten-second messages without recharging batteries. Equipped with internal storage battery. Output, 20 watts. Furnished with self-contained charger for operation from 120 volts, 60 cycles.

Length, 12 $\frac{5}{16}$  inches. Width, 7 inches. Height, 8 $\frac{1}{4}$  inches. Weight, 23 pounds.

### No. A127 Deputy Amplifier

Provides more than 5000 ten-second messages without battery replacement. Has standard radio dry batteries. Output, 5 watts.

Length, 12 $\frac{5}{16}$  inches. Width, 5 inches. Height, 8 $\frac{1}{4}$  inches. Weight, 14 pounds, including batteries.

### Megaphone

Range: (under normal conditions) with No. A126 amplifier, 1 mile or more distinctly. With No. A127 amplifier,  $\frac{1}{2}$  mile or more distinctly.

Dimensions: length, 20 inches; maximum diameter, 13 $\frac{1}{2}$  inches. Weight, 9 pounds.



## Inter-Communication Phone Systems

## Without Exchange Trunks

This system has gained universal recognition for providing reliable telephone communication in installations requiring limited local service and not requiring outside or city connections.

Ideal for offices, factories, stores, schools, apartments, institutions.

## No. 1-A Systems

Features selective ringing and selective talking service and provides as many separate simultaneous conversations as there are pairs of phones installed. The total number of stations which may be connected is 25

## No. 6240-C Telephones

## Desk and Wall

The No. 6240-C comes in two styles, desk and wall. When ordering, specify the style of instrument desired.



No. 6240-C 12

Code No.	No. of Buttons	Station Capacity	Description
6240-C6	6	7	Sel. Ring, Sel. Talk
6240-C12	12	13	Sel. Ring, Sel. Talk
6240-C16	16	17	Sel. Ring, Sel. Talk
6240-C24	24	25	Sel. Ring, Sel. Talk

## Accessories

The No. 1-A system requires the following material for completing an installation:

**Cable.** With suitable conductors, (2 pairs No. 18 gage for battery supply, and 1 pair No. 22 gage, for each station in the system). Lead covered cable is recommended for all locations where moisture is present or where cable may be exposed to mechanical injury.

**Stranded Flexible Cable.** Used where it is necessary to move the desk telephone about upon a desk. Conductors required depend upon number of buttons in the key box.

**Cable Terminals.** Cable terminals should be provided wherever there is a junction between cables, and, usually, at desk mountings.

**Rectifier.** Recommended in place of dry cells wherever reliable 110 volt a.c. is available.



No. 6240-C 24

## No. 11 Systems

Provides selective ringing and common talking operation. Adaptable to establishments where conversations can be limited to one at a time. Used extensively in residences, banks, warehouses, and stores.

## No. 2527 Telephones



No. 2527-C 8

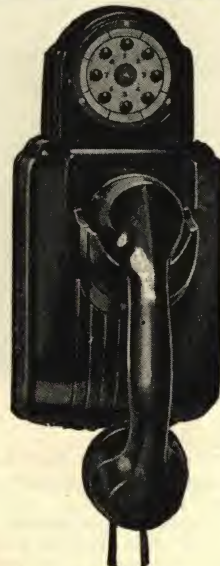
Selective ringing and common talking type.

Suitable for surface wall mounting.

No. 2539-C is a flush type wall telephone which is combined with a metal outlet box and a set of outlet box hangers.

Code No.	Code No.	No. of Buttons	Station Capacity
2527-C2	2539-C2	2	3
2527-C3	2539-C3	3	4
2527-C4	2539-C4	4	5
2527-C6	2539-C6	6	7
2527-C8	2539-C8	8	9

## No. 6347-C Telephones



No. 6347-C 8

A surface mounting wall type instrument.

The housing is of molded phenol compound with the push button unit mounted at the top. The transmitter and receiver are made up in the form of a handset.

Code No.	No. of Buttons	Station Capacity	Description
6347-C4	4	5	Sel. Ring, Com. Talk
6347-C8	8	9	Sel. Ring, Com. Talk



## Inter-Communication Phone Systems

## Without Exchange Trunks

## No. 11 Systems (Continued)

## No. 6345-C Telephones



Consists of a handset telephone desk set with push buttons mounted in the base together with an apparatus box containing a bell and connecting block.

## No. 6345-C8 Handset

Code No.	No. of Buttons	Station Capacity	Description
6345-C4	4	5	Sel. Ring, Com. Talk
6345-C8	8	9	Sel. Ring, Com. Talk

## Accessories

The following material is necessary to complete the installation of a No. 11 System:

**One No. 51-H Retardation Coil.** Installed near battery.

**Cable.** Three common wires, No. 18 gage, and one individual wire, No. 22 gage, for each station.

**Dry Cells.** Five cells required. If 110 volt a.c. current is available, a 6-volt rectifier may be used.

## No. 6339-C Telephones



## No. 6339-C Handset

Consists of a handset hook switch box, push button block and apparatus box.

The hook switch box can be mounted at the side of a desk, on a wall or any vertical surface.

Code No.	No. of Buttons	Station Capacity	Description
6339-C4	4	5	Sel. Ring, Com. Talk
6339-C8	8	9	Sel. Ring, Com. Talk

## No. 12 System

## Master Station—Common Talking

This system provides for communication from a central point, master station, to several outlying stations.

The master station is equipped with push buttons, one for each outlying station. By operating these buttons, each outlying station may be rung separately.

The outlying stations are each equipped with one ringing button only, by which they are able to signal the master station.

Only one conversation can be carried on at one time.

The capacity of this system permits the operation of one master station and from 2 to 16 outlying stations.

## Instruments

**Master Stations.** Any of the instruments described under system No. 11 may be used as master stations in system No. 12 up to the capacities indicated. The No. 2527-C type telephone may be furnished with 10 to 16 push buttons to secure greater capacity.

**Outlying Stations.** The same type of instruments described in system No. 11 may be provided for outlying stations. These single button instruments are indicated by the following codes:

Code No.	Type	Code No.	Type
2527-C1	Surface Wall	6345-C1	Cradle
2527-C1	Flush Wall	6339-C1	Suspended
6347-C1	Surface Handset		

## Accessories

The following material is required for completing a No. 12 system:

**One No. 51-H Retardation Coil.** Installed near battery.

**Wire.** Three common wires are required throughout the system, No. 18 or No. 19 gage. In addition, one individual wire between each outlying station and the master station, No. 22 gage. It will be found economical to use cable when there are long runs or a large number of wires.

**Cable Terminals.** Terminals are desirable at junction points and distribution centers.

**Dry Cells.** Five cells are required when the more distant outlying station is 750 feet or less distant from the master station.



Inter-Phone Systems  
Without Exchange Trunks  
No. 14 and No. 14C Systems  
Two-Station—Private Line



Two-station private line telephones are used extensively for communication between rooms in a residence, between offices, between shipping room and warehouse, and to fill other similar requirements.

The No. 14 system requires two wires for connecting the two telephone instruments and one set of three or four dry cells at each telephone.

The No. 14C system requires three wires for connecting the two telephones and one set of five dry cells connected at one station only. Requires retard coil.

In either system, one station can ring the other by simply depressing the button on the set. Wall or desk sets may be used interchangeably.

Code No.....	2527-C1	2539-C1	6345-B1	6339-B1	6347-C1
No. of Buttons	1	1	1	1	1
Description..	Surface Wall	Flush Wall	Handset Desk	Suspended Wall	Wall Handset

No. 15 System  
Code Ringing—Common Talking



No. 6345-B1  
Handset Desk Telephone

Each station is equipped with one push button, which, when depressed, signals every other station.

The various stations are called by signalling each one with a different code ring. Thus two rings signals station No. 2, three rings signals station No. 3, etc.

Capacity of system, 2 to 6 stations.

The No. 15 system may be used to advantage where telephone service is limited and where code ringing is not extensive enough to cause annoyance. Stockroom and associated warehouses, grouped green houses, guard stations, and similar installations are well served by No. 15 system.

The instruments used have the same general appearance as those shown under system No. 14. They are indicated in the following table:

Code No.....	2527-C1	2539-C1	6345-B1	6339-D1	6347-C1
No. of Buttons	1	1	1	1	1
Description..	Surface Wall	Flush Wall	Handset Desk	Suspended Wall	Wall Handset

Accessories

Installing material as follows is required for the No. 15 system:

- One No. 51-H Retardation Coil.** Installed near battery.
- Wires.** Four wires are needed for connecting the phones.
- Dry Cells.** No more than 5 dry cells connected in series are used for this system.

Inter-Phone Cable



For Interior Use



For Outside Use

The conductors are provided with a single acetate yarn and single cotton insulation, which is colored in such a way that each pair and each single wire can be identified. The cable core is then impregnated with a wax compound and is covered with servings of paper and a heavy cotton braiding. In the case of lead covered cable, a lead sheath is placed over the core instead of the cotton braiding.

Three General Types of Cable are Provided

1. **INTERIOR CABLE** with outside braiding treated with gray fireproofing paint. Use only in dry places.
2. **INTERIOR CABLE** with brown glazed cotton outside braiding. Use only in dry places where exposed to view.
3. **OUTSIDE CABLE**, lead covered. Always use this cable outside, and inside where there is apt to be moisture even in a small degree. In conduit installations lead covered cable should be used.

No.	*No. of Con- ductors	PAIRS		SINGLES	Covering	Approx. Diam. Inches
		No.	Gage	No. Gage		
142B	8	..	..	8 22	Glazed Braid Painted Gray	.32
161B	8	..	..	7 22	Cotton Braid Painted Gray	.23
161BS	8	..	..	7 22	Lead Sheath	.27
162B	12	..	..	11 22	Cotton Braid Painted Gray	.32
162BS	12	..	..	11 22	Lead Sheath	.30
164B	12	2	18	6 22	Cotton Braid Painted Gray	.35
164BS	12	2	18	6 22	Lead Sheath	.33
244B	22	8 22	2 18	..	Cotton Braid Painted Gray	.38
244BS	22	8 22	2 18	..	Lead Sheath	.41
245B	22	8 22	2 18	..	Brown Cotton Unpainted	.38
246B	34	14 22	2 18	..	Cotton Braid Painted Gray	.42
246BS	34	14 22	2 18	..	Lead Sheath	.45
247B	34	14 22	2 18	..	Brown Cotton Unpainted	.42
248B	42	18 22	2 18	..	Cotton Braid Painted Gray	.45
248BS	42	18 22	2 18	..	Lead Sheath	.48
249B	50	22 22	2 18	..	Cotton Braid Painted Gray	.48
249BS	50	22 22	2 18	..	Lead Sheath	.51
250B	58	26 22	2 18	..	Cotton Braid Painted Gray	.52
250BS	58	26 22	2 18	..	Lead Sheath	.55
251B	72	33 22	2 18	..	Cotton Braid Painted Gray	.56
251BS	72	33 22	2 18	..	Lead Sheath	.60

\*Quantity included under the heading "Conductors" includes spares.



## Brach WJZ Potheads for Pedestals

In pedestal locations and other places where space is extremely limited it is desirable to have a terminal pothead that is extremely small and at the same time offers the advantages of high insulation, accessibility and a number of circuits.

The design includes a bakelite panel mounted on a heavy cast zinc box. Cable enters through a rubber sealed stuffing box. Provision is made for completely filling the pothead with pitch after cable is installed.

Bakelite panel on front of pothead and back cover are both removable. Panel is backed with waterproof paper.



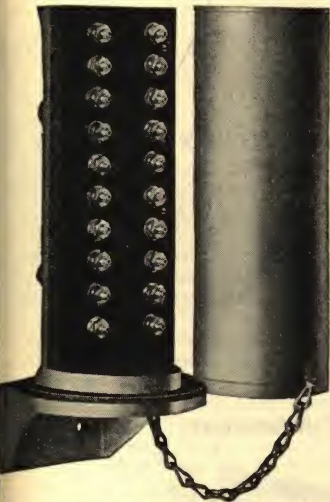
8-Wire

Size, width and depth approximately 2 7/8 inches. The height depends upon the number of wires.

No. ....	WJZ-8	WJZ-10	WJZ-12	WJZ-19
No. of Terminals.....	16	20	24	38

NOTE: It is important to advise the diameter of the lead cable so that we can furnish the correct size watertight gland bushing.

## Brach Pole Top Potheads



No. PT-20

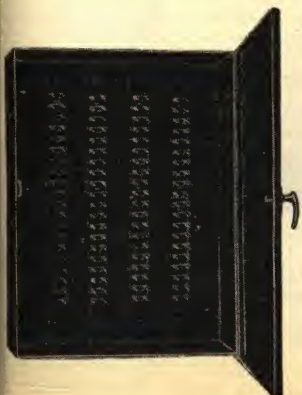
The purpose of this pothead is to provide either a sealed cable end with accessible terminals for testing and interconnecting, or a junction terminal to facilitate the connecting of cables to cables and open wires.

Cables brought up behind the terminal panel are skinned and passed out through the hollow studs of the binding posts and soldered. The enclosed chamber behind the terminal panel can then be entirely filled with compound. Cables or wires brought up in front of the terminal are connected to the binding posts in the

usual manner and can be sealed with compound in a well provided for this purpose. Compounding chamber, compounding well, base, and mounting bracket are castings. Panel is of solid 3/8 inch bakelite. Solid copper cover is permanently chained to base.

No. ....	PT-10	PT-20
No. of Terminals.....	10	20
Height.....inches	8	12
Diameter Overall.....inches	4 1/2	4 1/2

## Brach Terminals In Sheet Metal Cabinets



Terminals in sheet metal cabinets are furnished to order.

Specify the type of terminal and the number of circuits required.

Be sure to advise size and location of entrance holes.

## Brach Universal Terminal Strips

### Type 2500



Each terminal strip is made in ten units moulded in one piece. Terminal strips may be sawed apart into smaller groups or single units. Each unit has its own mounting hole.

Sliding links are flanged to lock the nuts in place. Strips are made of bakelite. Each section of a strip may be further isolated by means of removable barriers. Insulated covers can be provided to fit over strips. Wires may be transferred or loops cut out without opening main circuit.

Size, 9 1/2 inches long, 1 3/4 inches wide, 1 3/4 inches high.

### Type 2500T



The same general description as Type 2500, but in addition carries Auxiliary Transfer Terminals, permitting two or more wires to be connected to each side of the terminal. These transfer terminals are desirable where temporary connections are needed without disturbing the permanent connections.

Size, 9 1/2 inches long, 2 3/4 inches wide, 1 3/4 inches high.

ORDERING REFERENCE NOTE: By the addition of the letters B and C to any of the above ordering references we will understand that barriers and covers are to be included; or by adding B only that barriers only are required in addition to the terminals. For example: 2500TBC would be the 2500 terminal with extra transfer terminals, barriers and cover.

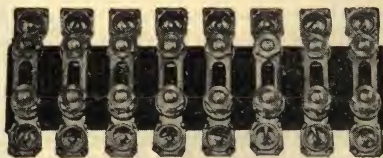
### Type 1500



A smaller and a more compact unit than the Type 2500 Terminal Strip, but since silicon bronze screws are used throughout with heavy specially designed nuts they are far stronger than their size would normally indicate. Each terminal is made of eight units molded in one piece and may be separated into smaller groups or single units. Its design includes the same features as the 2500 strip including slide links, large creepage distance and resistance to the effects of gases, water or chemical action. Insulating cover can be furnished.

Size 6 inches long, 1 1/4 inches wide, 1 3/16 inches high.

### Type 1500T

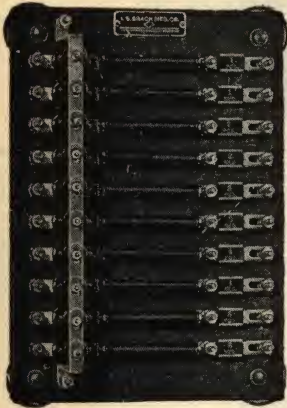


Same general description as Type 1500, but in addition carries auxiliary transfer terminals, permitting two or more wires to be connected to each side of the terminal. These transfer terminals are also desirable where temporary connections are needed without disturbing the permanent connections.

Size 6 inches long, 2 3/8 inches wide, 1 3/16 inches high.



**Brach Entrance Panels  
For Telephone Wire and Cable**



Meets the demand for a rugged, combined protection and test panel for indoor mounting where cables or wires enter headquarters or fire houses.

Panel provides for each wire a heavy duty Rare Gas Lightning Arrester, a \*3-ampere 2000-volt line fuse, a slide test link and a common ground buss with terminal posts top and bottom so that ground wires can be connected in two places, all assembled on a 3/4-inch ebony asbestos panel mounted upon four porcelain insulators.

The slide test link permits opening a circuit without disturbing or injuring any

connected wire. The test links are marked to distinguish the circuit.

Panels can be mounted directly to the wall and set off from wall by porcelain knobs. Furnished mounted in sheet metal cases which may be fastened to the wall, these cases being provided with suitable doors and locks; or they can be furnished in weatherproof housings for mounting outdoors.

The arrester cartridges are heavy duty No. 272 Thermal Element Rare Gas Cartridges and are non-grounding. One is provided for each wire and meets the National Fire Protection Association requirements.

Fuses are nitted type rated at 2000 volts. One is provided for each wire.

Other size panels than those listed can be built to specifications.

Designation tags marked to specifications by stamp die markings on black fibre, filled in white are provided. They are shipped blank if no specification accompanies order.

Sneak current fuses, if not otherwise provided, may be had on protective panels embodying this additional equipment.

**Standard Entrance Panels for Open Mounting with  
Arresters, Line Fuses and Terminals Complete**

No. ....	1072	2072
Each. ....		
Number of Wires. ....	10	20
Size Panel. .... inches	15 1/2 x 11 1/4 x 5	28 x 11 1/4 x 5

**Standard Entrance Panels Enclosed in Cabinet with  
Arresters, Line Fuses and Terminals Complete**

No. ....	1072-H	2072-H
Each. ....		
Number of Wires. ....	10	20
Size Panel. .... inches	18 1/2 x 16 x 6 1/2	31 x 16 x 6 1/2

**Standard Entrance Panels for Open Mounting with  
Sneak Fuses, Arresters, Line Fuses and Terminals  
Complete**

No. ....	1072-S	2072-S
Each. ....		
Number of Wires. ....	10	20
Size Panel. .... inches	15 1/2 x 12 3/4 x 5	28 x 12 3/4 x 5

**Standard Entrance Panels Enclosed in Cabinet,  
With Sneak Fuses, Arresters, Line Fuses and  
Terminals Complete**

No. ....	1072-SH	2072-SH
Each. ....		
Number of Wires. ....	10	20
Size Panel. .... inches	18 1/2 x 17 x 6 1/2	31 x 17 x 6 1/2
No. 272, Cartridge Only. ....		each
No. 53, Fuse Only. ....		each

\*Unless otherwise specified, 3-ampere fuses are furnished.

NOTE: Should any of the above be desired in weather-proof housings, place the letters HWP before the order number.

**Entrance Panel in Sheet Metal Cabinets**

The above entrance panels are frequently furnished in sheet metal cabinets with brass hinges and locks.

As the number of circuits vary we will be glad to quote if advised the arrangement preferred and the number of circuits required. Be sure to advise size and location of entrance holes.

**Brach Rare Gas Lightning Arresters**

The sensitivity and uniformity of Rare Gas Lightning Arresters, together with their ability to absorb extremely heavy surges without permanently grounding has caused their wide spread acceptance for the protection of Telephone, Railway Signalling, and Municipal Fire and Police Alarm Circuits. The arrester gap is hermetically sealed in an atmosphere of inert rare gases and is not subject to moisture, corrosion, insects or dirt.

**Type MCD Brach Rare Gas Lightning  
Arrester Cartridges**



The cartridge unit supplies the demand for a small size thermal element lightning arrester which fits the clips of standard carbon mica block units with which it is interchangeable.

Will operate under conditions where humidity is high. Gives good protection.

Size 3/8 inch wide, 1 3/8 inches long, mounted on 1/2 inch centers.

No. ....	MCD-2	MCD-4	MCD-6
Each. ....			W
Breakdown volts. ....	200-400	400-600	600-900

**Brach Rare Gas Heavy Duty Lightning  
Arresters**

Where space is not at a premium the larger Heavy Duty Rare Gas Arresters are recommended. A few of the many available types are listed.

In the triple path types, two line electrodes and a ground electrode are contained in the same arrester cartridge facilitating the equalization of surge voltages between twisted pair conductors and cable conductors.

Standard voltage breakdown ranges 200-400, 350-600 volts a.c. Special ranges available from 90 volts to several thousand volts.

**Type 27-A Arresters**



Single line type. Recommended for fire alarm circuits, telephone and telegraph circuits.

The base is made of bakelite, and carries two binding posts, one for line and one for ground. Uses No. 27-M cartridge only.

Size 5 inches long, 1 1/4 inches wide and 2 inches high.

No. 27-A, Arrester Complete .....	each
No. 27-M Cartridge Only .....	each

**Type 26 Arresters**



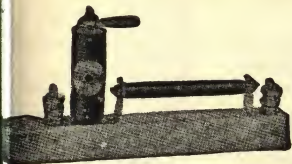
Same as Type 27-A except that it is equipped with an auxiliary air-gap under the cartridge to provide an additional path for any discharge in excess of the capacity of the cartridge.

Size 5 inches long, 1 1/4 inches wide and 2 inches high.

No. 26, Arrester Complete .....	each
No. 26-M, Cartridge Only .....	each



## Brach Rare Gas Heavy Duty Lightning Arresters



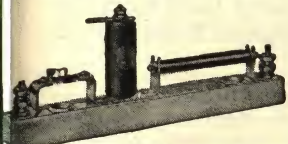
### Type 272 Arresters

Designed for telephone and telegraph circuits, where a Rare Gas Arrester is desired in combination with a line fuse.

The arrester is also largely used on single or grounded telephone lines.

Fuses are of the nutted end type, 5 ampere unless otherwise specified. Uses No. 272 Cartridge only and No. 53 Fuse only. Underwriters' Laboratories approved. Size  $8\frac{3}{4}$  inches long,  $4\frac{3}{8}$  inches high, 1 inch wide.

Type No. 272, Arrester Complete.....each .....  
No. 272, Cartridge Only.....each .....  
No. 53, Fuse Only.....each .....



### Type 184 Arresters

Single Line, 2,000 Volts

Underwriters' Laboratories approved for fire alarm and other signal services.

Especially designed to fulfill the requirements of the Red Book with respect to location at the entrance of headquarters.

Consists of 3 operating portions: Lightning protective cartridge No. 272; sneak current fuse No. 53-S; regulation 2,000 volt fuse No. 53, 5 ampere unless otherwise specified.



### Type 284-C Housed Arresters

Double Line Outdoor

A lightning arrester suitable for use where a single pair of wires is to be protected by heavy duty arrester cartridges arranged to be mounted outdoors without fuses. The housing for the arrester cartridges consists of a porcelain base with heavy phosphor bronze clip terminals and the entire unit is covered by a can type weatherproof cover.

Mounting bracket provided. Cartridges are heavy duty, non-grounding Type 272 Thermal Element Neon Cartridges.

Meets the latest requirements of the National Fire Protection Association.

Type No. 284-C, Housed Arrester Complete.....each .....  
No. 272, Cartridge Only.....each .....  
Size  $9\frac{1}{2}$  inches long,  $4\frac{1}{2}$  inches high,  $\frac{1}{2}$  inch wide.  
Type No. 184, Arrester Complete.....each .....  
No. 272, Cartridge Only.....each .....  
No. 53, Fuse Only.....each .....  
No. 53-S, Sneak Current Fuse Only.....each .....



### Type 60 Arresters

Double Line

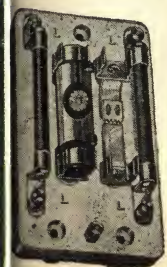
For all low voltage protection. Base arranged for 2 cartridges taking care of a pair of circuit wires.

Auxiliary saw tooth gaps provided.

Uses No. 27-M cartridge only.

Size  $5\frac{3}{8}$  inches long,  $3\frac{1}{8}$  inches wide,  $2\frac{1}{4}$  inches high.

No. 60, Arrester Complete.....each .....  
No. 27-M, Cartridge Only.....each .....



### Type 40-B Arresters

Double Line with 2,000 Volt Fuses

Recommended for all telephone and train dispatching circuits. Designed to accommodate the usual two wires or pairs of such circuits. Auxiliary air gaps are included.

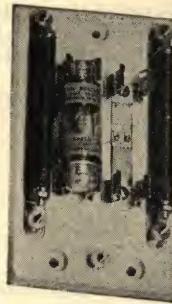
Equipped with line fuses rated for 2,000 volts complying with the requirements of National Board of Fire Underwriters.

Uses No. 27-M cartridge only and No. 53 fuse only. Size  $6\frac{3}{8}$  inches long, 4 inches wide,  $2\frac{1}{4}$  inches high.

No. 40-B, Arrester Complete.....each .....  
No. 27-M, Cartridge Only.....each .....  
No. 53, Fuse Only.....each .....

## Type 29SB Brach Switchboard Arresters

Listed as Standard by Underwriters' Laboratories



Switchboard is logical location for lightning arresters in central offices. Not only facilitates wiring but is preferred location because fuses may be readily maintained.

Can be furnished in polished or satin chromium finish, lacquered brass and gold plated ferrules, cadmium or black bakelite.

Fuses can be furnished in polished bakelite with chromium or brass terminals.

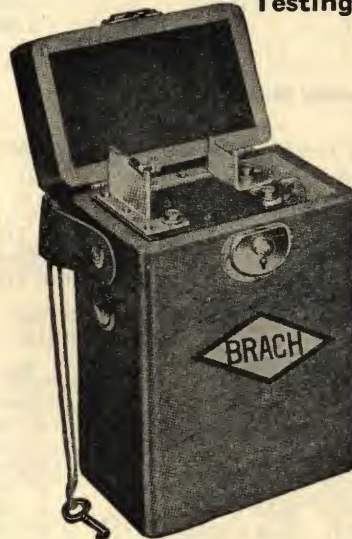
Can be used with horizontal or perpendicular mountings.

Casing,  $2\frac{7}{8}$  inches long. Overall, 4 inches.

Type No. 29SB, Arrester Complete.....each .....  
No. 29SB, Cartridge Only.....each .....  
No. 53, Line Fuse.....each .....  
No. 53-S, Sneak Current Fuse.....each .....

When ordering specify type of finish desired on cartridges.

## Brach Portable Rare Gas Arrester Testing Sets



The Brach Portable Testing Set is a small compact instrument and is capable of testing all types and makes of vacuum and rare gas lightning arresters.

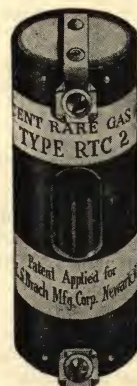
This testing set can be used in determining the effectiveness of air-gap arresters as well.

It is good practice to make periodic tests of lightning arresters, or after a series of bad storms, to obtain uniform protection.

No. R2605, Set Complete.....ea. ....  
No. R2605-55 Batteries only.....each .....

## Type RTC-2 Vincent Rare Gas Relays

For Noise Elimination on Telephone Lines



In metallic telephone circuits the use of divided ringing to ground in order to simplify code or harmonic ringing on party lines has often resulted in noisy transmission. When a RTC-2 Vincent Rare Gas Relay is connected in series with each grounded bell circuit the line is automatically freed from ground during voice transmission and ground current noises are eliminated. The higher ringing voltages, however, pass through the relays and ring the bells. The relay is also applicable to the central office drop ground connection.

Furnished with an ingenious clip requiring a single bolt to mount it within the bell box or at any other convenient location.

The relay has no moving parts and is unaffected by atmospheric or temperature changes. Lines equipped with the relay are

free from grounds in normal operation and therefore free from noises which would ordinarily be picked up through ground connections. Can be used on magneto or common battery lines with either harmonic or code ringing. Ringer load is removed from voice circuit, improving transmission.

Length,  $2\frac{1}{2}$  inches. Height, when mounted,  $1\frac{1}{2}$  inches.



## Struthers-Dunn General Control Relays

Used for the control of heaters, signals, small motors, etc.

Wiping contacts are of fine silver; the design of the shading coil insures quiet a.c. operation. Each relay is tested by two different inspection departments before shipment.

Available with any desired number of poles. Various types of housing can be furnished.

### Midget Relays



Base size,  $2\frac{3}{4} \times 1\frac{7}{8}$  inches.

Coils furnished as specified: 6 to 230 volts a.c.; or 2 to 230 volts d.c.

Contacts: 6 amperes, 115 volts a.c.; 3 amperes, 230 volts a.c.; 0.5 ampere, 115 volts d.c. Non-inductive loads.

#### Type 1BXX

Type	Description	Each
1HXX	S.P., D.B., Front Contact.....	\$4.30
1BXX	D.P., S.B., Front Contact.....	5.50
1XXH	S.P., D.B., Back Contact.....	4.30
1XXB	D.P., S.B., Back Contact.....	5.50
1XHX	S.P., D.B., D.T.....	4.90
1XBX	D.P., S.B., D.T.....	6.00

### Power Relays



Coils furnished as specified: 6 to 550 volts a.c.; or 2 to 230 volts d.c.

Contacts: 30 amperes, 115 volts a.c.; 30 amperes, 230 volts a.c.; 4 amperes, 115 volts d.c. Double break types are rated 20 amperes, 220 volts a.c.; 6 amperes, 115 volts d.c. Non-inductive loads.

#### Type 8HXX

Type	Each	Description	Base Size Inches
8HXX	\$7.50	S.P., D.B., Front Contact.....	$4\frac{1}{4} \times 3$
8BXX	9.80	D.P., S.B., Front Contact.....	$4\frac{1}{4} \times 3$
8CXX	11.20	T.P., S.B., Front Contact.....	$4\frac{1}{4} \times 3$
84XXH	9.50	S.P., D.B., Back Contact.....	5 x 3
84XXB	10.90	D.P., S.B., Back Contact.....	5 x 3
84XXC	12.40	T.P., S.B., Back Contact.....	5 x 3
84XXB	12.70	D.P., S.B., D.T.....	$6\frac{1}{4} \times 3$
8AXA	9.80	S.P., S.B., D.T., Separate Circuit.	$4\frac{1}{4} \times 3$
84BXX	13.80	D.P., S.B., D.T., Separate Circuit	$6\frac{1}{4} \times 3$

## Struthers-Dunn Mechanical Latch-In Electrical Release Relays



#### Type 5HXX

Used for push button control or similar applications.

Two coils: one coil closes contacts which latch closed; the other coil, when energized, trips the latch and opens the contacts.

Base size,  $4\frac{1}{2} \times 3\frac{3}{4}$  inches.

Available with any desired number of poles. Midget types are also available.

Type	Each	Description	CONTACT RATING, AMPS.—			
			115V. A.C.	230 V. A.C.	115V. D.C.	230 V. D.C.
5HXX	\$10.10	S.P., S.T., D.B. ....	30	20	6	1
5BXX	11.50	D.P., S.T., S.B. ....	30	25	4	.5
5AXA	11.50	S.P., D.T., S.B. ....	8	6	2	.5

## Struthers-Dunn Thermostatic Control Relays

Used for the control of heaters, refrigerator units, pressure, etc.

Protective resistor is part of the relay. Instrument contacts make but never break current.

For use with 3-wire H-L-C instrument or push button.

Used Where Control Circuit and Load are Fed by Same Line

Type	Each	RATING, AMPERES		Base Size Inches
		115 Volts A.C.	115 Volts D.C.	
8MXX50	\$9.50	30	6	$4\frac{1}{4} \times 3$
1MXX50	5.80	6	1	$2\frac{3}{4} \times 1\frac{7}{8}$

Used Where Control Circuit and Load are Fed by Different Lines

Type	Each	115 Volts A.C.	115 Volts D.C.	Base Size Inches
8BXX50	\$10.90	15	2	$4\frac{1}{4} \times 3$
1BXX50	6.60	6	1	$2\frac{3}{4} \times 1\frac{7}{8}$

## Struthers-Dunn Relay Sets for Low Voltage Thermostat Control



#### Type RS239

Complete with relay and transformer mounted in sheet metal housing with external binding posts for thermostat connections.

Used with 2-Wire Snap Action Thermostat

Type	Each	115-VOLT A.C. —	
		HP. RATING	Amps.
RS239	\$10.00	$\frac{1}{4}$	6
RS71	14.30	1	30

Used with 3-Wire H-L-C Thermostat

Type	Each	HP. RATING	Amps.
RS240	\$11.10	$\frac{1}{4}$	6
RS73	16.60	1	15

## Struthers-Dunn Telephone Auxiliary Signaling Relays



#### Type 5XXH501W6

Type 4HXX56H3. Relay and condenser in H3 sheet metal, hinged cover housing. Signal remains on as long as circuit is closed.

Each..... \$14.60

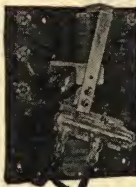
Type 4HXX56W6. Same as above type except in W6 cast aluminum housing.

Each..... \$25.90

Type 5XXH501W6. Relay, condenser, and push button in W6 cast aluminum housing, weather-proof. After telephone circuit once energizes relay the signal remains on until relay is released.

Each..... \$35.70

## Struthers-Dunn Mercury Swing Relays



#### Type 22AXX

Contacts enclosed from corrosion, dust, and dirt. Recommended for high inrush loads. Swing type magnetic structure eliminates noise.

Contacts rated 25 amperes, 115 volts a.c.; 20 amperes, 230 volts a.c.; 20 amperes, 115 volts d.c.; 10 amperes, 230 volts d.c.

Type	Description	Each
22AXX	S.P., S.T., Normally Open.....	\$11.50
22XXA	S.P., S.T., Normally Closed.....	11.50
22BXX	D.P., S.T., Normally Open.....	16.10
22XBB	D.P., S.T., Normally Closed.....	16.10



### Type 112XAX Struthers-Dunn Sensitive Relays

Low inertia and balanced moving parts result in high sensitivity, long life, fast operating, and vibration-resistant relays.

Available with interconnected coil and contact circuits for use with thermoregulators.

Sensitivity, 0.015 watts, d.c., 0.19 volt-amperes at 60 cycles.

Single pole, double throw contacts on non-inductive loads rated 2 amperes at 115 volts a.c.; ¼ amperes at 115 volts d.c.

Base size, front connected relays, 2½x2⅜ inches.

Coils wound with wire up to and including 44 gage. Prices vary with wire gage.

Also available with double pole, double throw contacts.

For more complete information, request complete bulletin data.

### Type PSY1 Struthers-Dunn Time Delay Relays

Many types of time delay relays are available including motor driven, both repeating and recycling, thermal, and inertia types.

This motor driven timer consists of a small synchronous motor driving a single cam at one rpm. The contacts close once per minute and the closure time is adjustable from 0 to 30 seconds. Contacts rated 10 amperes at 115 volts, a.c.

Motor for operation on 115 volts, 60 cycles, but may be furnished for other ratings at an increased price.

Size, 3¾x2¼ inches front connected.

Type PSY1.....each \$11.50

### Struthers-Dunn Ratchet Type Sequence Relays

Ratchet type sequence relays move their contacts when the coil is energized and then remain in this position until the coil is de-energized and again energized.

Contacts rated 115 volts, a.c., 20 amperes; 115 volts, d.c., 1 ampere.

Coils approximate 8 watts, a.c.; 4 watts, d.c.

Base size, 5x3 inches.

85AXA S.P., D.T., Separate Circuit..... \$18.40

85BXX D.P., S.T..... 18.40

Similar relays, except using midget construction are available at \$11.50.

### Struthers-Dunn Emergency Lamp Relays

Designed to automatically cut in a standby or emergency lamp should the main lamp burn out.

If an auxiliary source of power (such as a storage battery) is available the relays may be connected to switch the emergency lamp into the auxiliary circuit should the main line voltage fail or the main lamp burn out.

The relay is equipped with coils of minimum voltage drop to operate in series with the main lamp, upon the failure of which the relay armature opens, closing a set of contacts and completing the circuit to the standby lamp.

Type 20XXA5

Contacts are fine silver with low resistance which practically eliminates voltage drop at the contacts.

Contacts: 115-230 volts a.c., 800 watts; 115-230 volts d.c., 100 watts.

Base size, 4x2¾ inches front connected.

Type	Description	Each
20XXA5	S.P., S.T., S.B.....	\$6.30
20XXH5	S.P., S.T., D.B.....	6.30

### Edwards General Purpose Relays

Schedule C



Made in two sizes with magnets, bases, contacts, etc., proportioned according to use.

All even numbers are the senior relays, approximately 3 inches wide, 5 inches high and 3 inches deep.

All odd numbers are junior relays, approximately 2 inches wide, 3 inches high and 2 inches deep.

On a.c., relay will be found free from hum and efficient in operation. The contacts are pure hard drawn silver of the wiping type and liberally proportioned.

When ordering give: Exact operating voltage of coil and whether d.c. or a.c. (give cycles); voltage and current to be connected to contacts and whether inductive such as solenoids, motors, etc., or non-inductive such as lamps, heaters, etc. If there is any question a brief description or sketch of its intended use should be furnished with order.

#### Single Pole, Front Contact

No.	Each	MAXIMUM COIL VOLTS		CONTACT RATINGS				UP TO 250 VOLTS	
		A.C.	D.C.	UP TO 48 VOLTS A.C.	UP TO 130 VOLTS A.C.	UP TO 130 VOLTS D.C.	UP TO 250 VOLTS A.C.	UP TO 250 VOLTS D.C.	
940F	\$13.50	440	230	30	10	30	6	20	3
941F	7.75	130	90	6	3	6	1	3	.

#### Single Pole, Back Contact

940B	\$13.50	440	230	10	3	10	2	8	.
941B	7.75	130	90	6	3	6	1	3	.

#### Single Pole, Front and Back Contact

940FB	\$15.75	440	230	8	3	8	2	6	.
941FB	9.75	130	90	6	3	6	1	3	.

#### Double Pole, Front Contact

942F	\$17.50	440	230	30	10	30	4	25	2
953F	9.75	130	90	6	3	6	1	3	.

#### Double Pole, Back Contact

942B	\$19.75	440	230	30	10	30	4	25	2
953B	9.75	130	90	6	3	6	1	3	.

#### Double Pole, Front and Back Contact

942FB	\$23.00	440	230	30	10	30	4	25	2
953FB	10.85	130	90	6	3	6	1	3	.

#### Single Pole, Single Throw, Double Break, Mechanical Latch, Electric Reset

944	\$18.00	440	230	30	10	30	6	20	1
*955	7.75	75	48	5	2	..	..	..	..

\*Low voltage relay, approximately 1½ inches wide, 2½ inches high, 1⅜ inches deep. Bronze contacts. Suitable for lamp annunciators, etc.

### Edwards Telephone Relays

For the operation of loud ringing extension bells or horns on any desired voltage. The relay operates on all standard telephone ringing circuits, 70 to 90 volts a.c., 16 to 20 cycles. Supplied complete in metal hinged cover box with condenser.

#### No. 963

Schedule C

For momentary operation as long as telephone ringing circuit is closed. Contact ratings—10 amperes a.c. or 5 amperes d.c. up to 48 volts, 10 amperes a.c. or 3 amperes d.c. up to 130 volts, 5 amperes a.c. or 1 ampere d.c. up to 250 volts.

No. 963.....each \$30.00

#### No. 26-T

Schedule C

For continuous ringing until reset. Contact ratings, 2 amperes a.c. or d.c. up to 48 volts.

No. 26-T.....each \$22.50



### R-B-M Magnetic Relays

Used for control of electric power and lighting loads, pilot lights and audible signals. May also be used as circuit switching relays for machine tools, processing control and electrical interlocking systems, and electronic applications.

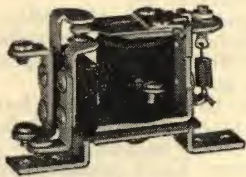
Mounting base has two tapped and two punched holes for front and rear mounting.

Wiping contacts are of fine silver.

Relays are thoroughly tested before shipment and are furnished with either solder or screw type terminals. When ordered with general purpose enclosure, relay will have screw terminals only.

Sheet steel general purpose enclosure No. 89000, complete with mounting screws, is used with the relays herein listed.

#### R-B-M Direct Current Single Pole Relays



No. 81523

Approximate dimensions: length,  $2\frac{1}{16}$  inches; width,  $1\frac{1}{16}$  inches; height,  $1\frac{3}{4}$  inches.

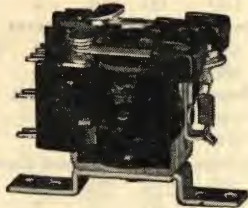
Coils furnished as specified:  $1\frac{1}{2}$  to 115 volts d.c.

Contacts: 220 volts a.c., 5 amperes; 110 volts a.c., 10 amperes; 24 volts d.c., 10 amperes. Non-inductive loads.

Weight, 4.3 ounces.

With Solder Terminals No.	With Screw Terminals No.	With Enclosure No.	Description
81511	81521	81561	Normally Open
81512	81522	81562	Normally Closed
81513	81523	81563	Double Throw

#### R-B-M Direct Current Double Pole Relays



No. 83513

Approximate dimensions: length  $2\frac{7}{8}$  inches; width,  $1\frac{3}{4}$  inches; height,  $2\frac{3}{16}$  inches.

Coils furnished as specified:  $1\frac{1}{2}$  to 115 volts d.c.

Contacts, double pole: 220 volts a.c., 5 amperes; 110 volts a.c., 10 amperes; 24 volts d.c., 10 amperes. Non-inductive loads.

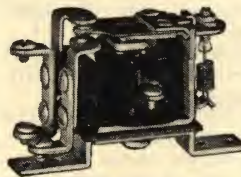
Contacts, single pole break: 220 volts a.c., 10 amperes; 110 volts a.c., 15 amperes; 24 volts d.c., 15 amperes. Non-inductive loads.

Weight, 6.6 ounces.

With Solder Terminals No.	With Screw Terminals No.	With Enclosure No.	Description
83511	83521	83561	Normally Open
83512	83522	83562	Normally Closed
83513	83523	83563	Double Throw
83514	83524	83564	One Normally Open One Normally Closed
83517	83527	83567	Normally Open Double Break
83518	83528	83568	Normally Closed Double Break
83519	83529	83569	Double Throw Double Break

### R-B-M Magnetic Relays

#### R-B-M A.C. Single Pole Relays



No. 92523

horsepower single phase.

Core is laminated.

Weight, 4.6 ounces.

With Solder Terminals No.	With Screw Terminals No.	With Enclosure No.	Description
92511	92521	92561	Normally Open
92512	92522	92562	Normally Closed
92513	92523	92563	Double Throw

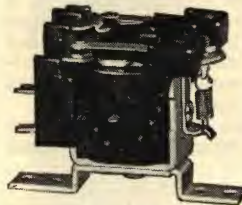
Approximate dimensions: length  $2\frac{1}{16}$  inches; width,  $1\frac{1}{4}$  inches; height,  $1\frac{3}{4}$  inches.

Coils furnished as specified:  $1\frac{1}{2}$  to 220 volts, 50-60 cycle a.c.

Contacts: 220 volts a.c., 5 amperes; 110 volts a.c., 10 amperes. Non-inductive loads.

Maximum motor load, 1

#### R-B-M A.C. Double Pole Relays



No. 94511

Approximate dimensions: length,  $2\frac{7}{8}$  inches; width,  $1\frac{3}{4}$  inches; height,  $2\frac{3}{16}$  inches.

Coils furnished as specified: 1 to 220 volts, 50-60 cycle a.c.  $\frac{1}{2}$

Contacts, double pole: 220 volts a.c., 5 amperes; 110 volts a.c., 10 amperes. Non-inductive loads.

Contacts, single pole double break: 220 volts a.c., 10 amperes; 110 volts a.c., 15 amperes. Non-inductive loads.

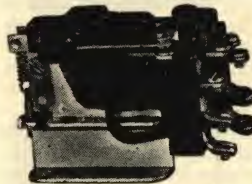
Maximum motor load, 1 horsepower single phase.

Core is laminated.

Weight, 6.7 ounces.

With Solder Terminals No.	With Screw Terminals No.	With Enclosure No.	Description
94511	94521	94561	Normally Open
94512	94522	94562	Normally Closed
94513	94523	94563	Double Throw
94514	94524	94564	One Normally Open One Normally Closed
94517	94527	94567	Normally Open Double Break
94518	94528	94568	Normally Closed Double Break
94519	94529	94569	Double Throw Double Break

#### R-B-M A.C. Double Pole Power Relays



No. 95223

horsepower single phase.

Weight, 10.5 ounces.

With Solder Terminals No.	With Screw Terminals No.	With Enclosure No.	Description
95211	95221	95261	Normally Open
95212	95222	95262	Normally Closed
95213	95223	95263	Double Throw
95214	95224	95264	One Normally Open One Normally Closed

Approximate dimensions: length,  $3\frac{1}{32}$  inches; width,  $2\frac{1}{4}$  inches; height,  $2\frac{3}{4}$  inches.

Coils furnished as specified:  $1\frac{1}{2}$  to 220 volts, 50-60 cycle a.c.

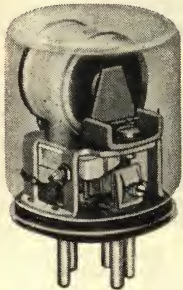
Contacts: 220 volts a.c., 15 amperes; 110 volts a.c., 30 amperes. Non-inductive loads.

Maximum motor load,  $1\frac{1}{2}$



## R-B-M Magnetic Relays

### Electronic and Communication Midget Relays



No. 98211

Used in electronic and communication industries.

Ideally suited for automatic scales, counting devices, business machines, electric clock systems, resistance welder controls, traffic control systems, or any other applications requiring sensitive relays of a compact design.

Has high-speed, long life operation.

#### Midget Shunt-Type

Available in the above d.c. or a.c. coil ratings.

Contacts are rated 24 volts a.c., 10 amperes; 24 volts d.c., 10 amperes; and 110 volts a.c., 10 amperes.

Non-inductive load.

#### Direct Current Shunt-Type Relays

Available in 1 to 6 poles, double throw.

Coils furnished as specified: 1½ to 115 volts d.c.

Contacts: 32 volts d.c., 3 amperes or 110 volts a.c., 1 ampere Non-inductive load.

#### Direct Current Series-Type Relays

Available in 1 to 6 poles, double throw.

Coils available in maximum of 115 volts d.c. across the coil. Maximum resistance at 20°C., depending on type, of from 8500 to 12,000 ohms, except for the plug-in type which has maximum resistance of 10,000 ohms.

All contact available in normally open, normally closed, or double throw. Double throw contacts available in "break before make" or "make before break".

#### Alternating Current Shunt-Type Relays

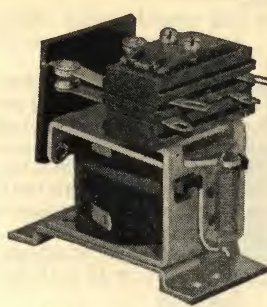
Available in 1 to 4 poles, double throw.

Coils furnished as specified: 1½ to 220 volts a.c.

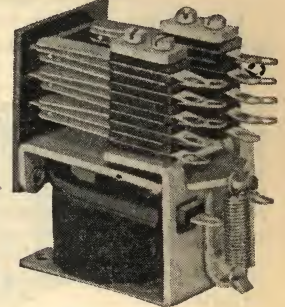
Contacts: 24 volts a.c., 3 amperes or 110 volts a.c., 1 ampere Non-inductive load.

For full information write for Bulletin 560.

## R-B-M General Purpose Magnetic Relays



Alternating Current



Direct Current

Designed for commercial phonographs, vending machines, commercial radio equipment, and electronic apparatus.

Relays listed as suitable for Underwriters' approval for 115-volt a.c. application, when submitted as part of manufacturers equipment, have individual contact pile-up with wide insulators providing adequate clearance to ground for 150 volts or less. Relays designed in accordance with Underwriters' specifications for (Class C) small electrical devices have molded phenolic stack insulators.

Overall dimensions: width, 1½-inch; length, 2½ inches; height, 1¾ to 2¼ inches depending on contact arrangement.

### R-B-M Direct Current Relays

3 Amperes, 32 Volts A.C.—1 Ampere, 32 Volts D.C.

Fine silver cross bar contacts welded to phosphor bronze springs. Coils furnished as specified: 1½ to 115 volts d.c.

Contacts: 3 amperes, 32 volts a.c. or less; 1 ampere, 32 volts d.c. or less. Non-inductive loads.

12 Amperes, 115 Volts A.C.—6 Amperes, 32 Volts D.C.

Fine silver button contacts welded to beryllium copper springs. Coils furnished as specified: 1½ to 115 volts d.c.

Contacts: 12 amperes, 115 volts a.c. or less; 6 amperes 32 volts d.c. or less. Non-inductive loads.

3 AMPERES, 32 VOLTS, A.C.				12 AMPERES, 115 VOLTS, A.C.				Contact Arrangement
1 AMPERE, 32 VOLTS, D.C.				6 AMPERES, 32 VOLTS, D.C.				
SINGLE-POLE		DOUBLE-POLE		SINGLE-POLE		DOUBLE-POLE		
Front	Rear	Front	Rear	Front	Rear	Front	Rear	
Mount-	Mount-	Mount-	Mount-	Mount-	Mount-	Mount-	Mount-	
ing	ing	ing	ing	ing	ing	ing	ing	
No.	No.	No.	No.	No.	No.	No.	No.	
98611	98621	98614	98624	98691	98601	98694	98604	Normally Open
98612	98622	98615	98625	98692	98602	98695	98605	Normally Closed
98613	98623	98616	98626	98693	98603	98696	98606	Double Throw

### R-B-M Alternating Current Relays

3 Amperes, 32 Volts A.C.—1 Ampere, 32 Volts D.C.

Fine silver cross-bar contacts welded to phosphor bronze springs. Coils furnished as specified: 1½ to 230 volts, 60 cycles.

Contacts: 3 amperes, 32 volts a.c. or less; 1 ampere, 32 volts d.c. or less. Non-inductive loads.

12 Amperes, 115 Volts A.C.—6 Amperes, 32 Volts D.C.

Fine silver button contacts and beryllium copper springs. Coils furnished as specified: 1½ to 230 volts, 60 cycles.

Contacts: 12 amperes, 115 volts a.c. or less; 6 amperes, 32 volts d.c. or less. Non-inductive loads.

Suitable for Underwriters' approval for 115-volt a.c. application when submitted as part of manufacturer's equipment.

3 AMPERES, 32 VOLTS A.C.				12 AMPERES, 115 VOLTS A.C.				Contact Arrangement
1 AMPERE, 32 VOLTS D.C.				6 AMPERES, 32 VOLTS D.C.				
SINGLE-POLE		DOUBLE-POLE		SINGLE-POLE		DOUBLE-POLE		
Front	Rear	Front	Rear	Front	Rear	Front	Rear	
Mount-	Mount-	Mount-	Mount-	Mount-	Mount-	Mount-	Mount-	
ing	ing	ing	ing	ing	ing	ing	ing	
No.	No.	No.	No.	No.	No.	No.	No.	
98711	98721	98714	98724	98791	98701	98794	98704	Normally Open
98712	98722	98715	98725	98792	98702	98795	98705	Normally Closed
98713	98723	98716	98726	98793	98703	98796	98706	Double Throw

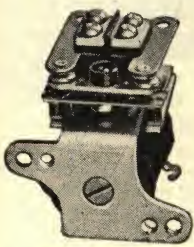
12 Amperes, 115 Volts A.C.—6 Amperes, 230 Volts A.C.

Fine silver button contacts welded to beryllium copper springs. Coils furnished as specified: 1½ to 230 volts, 60 cycles.

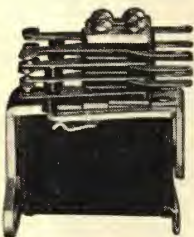
Contacts: 12 amperes, 115 volts a.c.; 6 amperes, 230 volts a.c., or 32 volts d.c. Non-inductive loads.

Designed in accordance with manufacturer's interpretation of Underwriters' specifications for small electrical devices (class C).

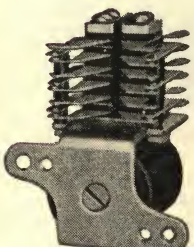
Double-Pole		Contact Arrangement
Front Mounting No.	Rear Mounting No.	
98734	98744	Normally Open
98735	98745	Normally Closed
98736	98746	Double Throw



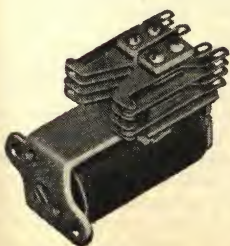
Nos. 98351 and 98361



No. 98324



No. 98346



No. 98334



## Benjamin Telecode Relays

Listed by Underwriters' Laboratories

For telephone ringing extension and closed circuit alarm systems in factories, mines, etc., where great volumes of noise make it difficult to hear a telephone bell.

Supplied with contacts arranged for open circuits, contacts open until coil is energized; with contacts arranged for closed circuits, contacts closed until the relay is actuated by current flowing through the coils; and with locking armatures, special winding on coils locks the contacts when the relay is operated, giving continuous operation to signals until circuit is broken by a release switch. Contacts are of tungsten steel; coils are form wound with moisture-proof coverings.

Rated .8 ampere at 110 volts. Standard coil windings, 1000 ohms for operation on 110-v., 60-cy., a.c. or 18 volt d.c. circuits.

Battleship gray enamel finish.

When ordering, specify resistance of telephone bell ringer coils, or voltage and frequency of ringing circuit.

### For Panel Mounting

#### Less Condenser

For direct panel mounting; also used as the basis of all combinations listed below.

Has a bakelite base,  $4\frac{1}{2}$  inches in diameter, with two mounting screw holes spaced on  $3\frac{1}{2}$ -inch centers.

Shipping weight,  $2\frac{1}{2}$  pounds.



No.	Description	Each
8313-P	Open Circuit.....	\$15.00
8313-C	Closed Circuit.....	15.00
8313-L	Locking Armature.....	16.90

### With Pressed Steel Box

For general use indoors. Steel box with hinged cover;  $6\frac{1}{2} \times 3$  inches. With  $\frac{1}{2}$ -inch knockouts on all four sides.

#### Less Condenser

Shipping weight  $5\frac{1}{4}$  pounds.

No.	Description	Each
8315-P	Open Circuit..	\$15.00
8315-C	Closed Circuit	15.00
8315-L	Locking	

Armature... 16.90

#### \*With Condenser

Shipping weight, 6 pounds.

8316-P	Open Circuit..	\$20.00
8316-L	Locking	

Armature... 21.90



### With Explosion Proof Box

Has a cast iron base, threaded to take a cast red brass cover. Joint between cover and base of box is close fitting, deep flanged and of sufficient depth to prevent the escape of flames to the surrounding atmosphere.

Base has two mounting lugs and two hubs with conduit stops.

Main section is  $5\frac{1}{2}$  inches in diameter and tapped  $\frac{1}{2}$ -inch straight through standard; tapped  $\frac{3}{4}$ -inch, when specified.



Description	Less Condenser			*With Condenser		
	No.	Each	Ship. Wt., Lb.	No.	Each	Ship. Wt., Lb.
Open Circuit...	8319-P	\$20.00	$10\frac{1}{2}$	8320-P	\$25.00	$11\frac{1}{4}$
Closed Circuit.	8319-C	20.00	$10\frac{1}{2}$	.....	.....	.....
Locking Armature.....	8319-L	21.90	$10\frac{1}{2}$	8320-L	26.90	$11\frac{1}{4}$

### With Water Tight Box

Same type as the explosion proof box, but has cast aluminum cover with a rubber gasket sealing the deep threaded joint between the base and cover.

Description	Less Condenser			*With Condenser		
	No.	Each	Ship. Wt., Lb.	No.	Each	Ship. Wt., Lb.
Open Circuit...	8322-P	\$18.10	$7\frac{1}{2}$	8323-P	\$23.10	$8\frac{1}{4}$
Closed Circuit.	8322-C	18.10	$7\frac{1}{2}$	.....	.....	.....
Locking						
Armature...	8322-L	20.00	$7\frac{1}{2}$	8323-L	25.00	$8\frac{1}{4}$

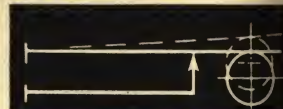
\*Condenser rated 1 mf.

## Mossman Switches

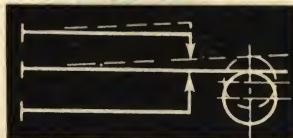
### Basic Contact Forms



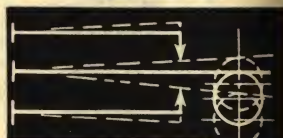
Form A  
Single Pole Make



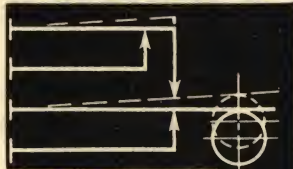
Form B  
Single Pole Break



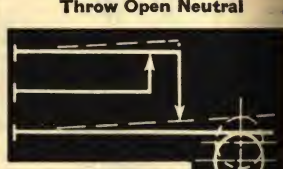
Form C  
Single Pole Double Throw



Form C°  
Single Pole Double Throw Open Neutral



Form D  
Make Before Break



Form E  
Break-Make-Break

Basic contact forms are illustrated. Indicate by letter the contact forms desired. Any combination can be obtained.

Form C° indicates a neutral or open position of the actuating spring on a Form C assembly in a three-position switch. Contact assemblies of 12 springs per pile-up, 24 springs per position, or 48 springs total can be built into the switch. Special pile-up arrangements can be made.

### Contact Ratings

**Standard Heavy Duty Contacts:** diameter,  $\frac{3}{16}$ -inch; fine silver; 10 amperes, 110 volts a.c.; non-inductive.

**Extra Heavy Duty Contacts:** diameter,  $\frac{3}{16}$ -inch; silver alloy; 20 amperes, 110 volts a.c.; non-inductive.

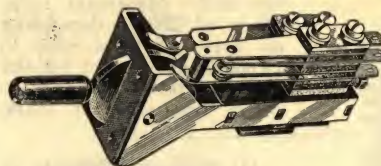
Contacts are spun into plated phosphor bronze springs. Other contact materials are available for special applications.

### Inverted Contact Forms

Used in order to balance the action of a switch and secure smoother operation. This is done by placing the "make or break" spring on the opposite side of armature spring to that of its normal position, so as to function when the switch is thrown on the opposite (to normal Form) position.

It is also possible to use the inverted Form B and C but not C°, which is applicable only to a three-position switch and may be placed in either position 1 or 2.

## Mossman Series 4101 Heavy Duty Lever Switches



A multiple circuit, positive action lever switch. A three-position switch with locking action in the center or neutral position and locking or non-locking in the other two positions, or any

combination of this as required.

The use of a no-throw stop in either of the two active positions converts it into a two-position switch.

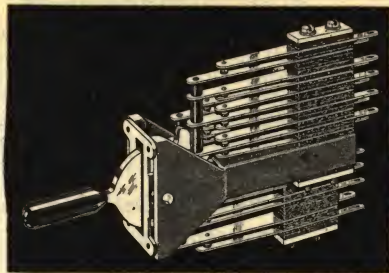
**Applications:** radio transmitters, signal systems, welding equipment, electronic devices and controls, lighting systems, machine tool controls, airport lighting and signalling, x-ray controls, fire alarm systems, annunciators, industrial control units, instruments, motor controls, aircraft electrical controls, and marine signalling systems.

**Mechanical Construction:** chassis consists of a heavy brass frame rigidly braced; frame supports a chromium-plated latch plate and spring-actuated piston, in which a roller is mounted clevis fashion; axles, stop-pins, and piston are of stainless steel; equipped with black phenolic handle; knurled metal handle also available; terminals are tinned for soldering.

**Insulators:** breakdown rating, 2000 volts a.c.; spring pile-up insulators are of Bakelite wafers, assembled under pressure to avoid distortion. Insulation may be had treated with standard moisture resisting varnishes of fungicide treatments if specified.



## Mossman Series 4200 Lever Switches



Constructed to meet the need for a multiple circuit, positive action lever switch.

A three position switch with locking action in the center or neutral position and locking or non-locking in the other two positions or any combination of this as required.

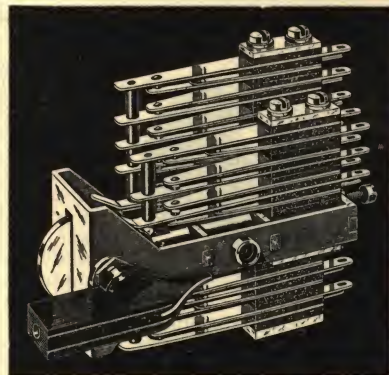
The use of a no-throw stop in either of the two active positions converts it into a two-position switch.

**Mechanical Construction:** frame is either zinc or aluminum die casting; latch plate is of chrome-plated, half-hard brass with thread stem, on which plastic handle is secured; detent mechanism consists of a stainless steel spring, which exerts pressure against two free-rolling, stainless steel balls located in a nickel-plated brass tube, inserted and staked in the tunnel of the switch frame; terminals are tinned for soldering.

**Insulation:** breakdown rating of springs to ground, 1000 volts a.c.; spring pile-up insulators are Bakelite wafers, assembled under pressure to insure against distortion. Fungicide treated insulation available if specified.

**Applications:** communication systems; fire alarm systems; testing apparatus; instruments; annunciator systems; radio equipment; industrial devices; and signal systems.

## Mossman Series 6300 Heavy Duty Turn Switches



Meets the need for heavy duty, multiple circuit, positive action turn switches.

A three-position switch with locking action in the center or neutral position and locking or non-locking in the other two positions or any combination of this as required.

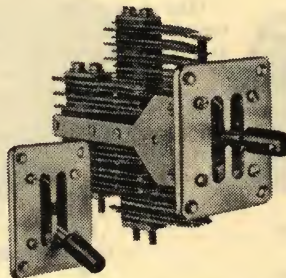
The use of a no-throw stop in either of the two active positions converts it into a two-position switch.

**Applications:** radio transmitters; electronic devices and controls; airport lighting and signalling; radar units; annunciators; television transmitters; marine signalling systems; and industrial control units.

**Mechanical Construction:** chassis consists of a heavy brass frame, rigidly braced which supports a chromium-plated latch-plate and spring-actuated piston in which a roller is mounted clevis fashion; axle, stop-pins, and piston are of stainless steel;  $\frac{3}{8}$ -inch diameter, 32-thread nickel-plated brass bushing provides the bearing for the shaft; terminals are tinned for soldering; handle is made of Bakelite.

**Insulation:** breakdown rating, 2000 volts a.c.; spring pile-up insulators are of Bakelite wafers, assembled under pressure to insure against distortion. Fungicide treated insulation available if specified.

## Mossman Series 4500 Heavy Duty Lever Switches



Meets requirements for a multiple position, multiple circuit, positive action lever switch. Referred to as the gear shift switch because of its method of selecting positions.

Available as a five-position (Series 4505) or a four-position (Series 4504) switch.

In all positions, except center, (neutral) the action may be locking or non-locking. In center (neutral) position it is always locking.

**Applications:** motor starting, stopping, reversing, and speed control; hoist and crane control; equalization of multi-generator operation; public address systems; television transmitters; electronic devices and controls; marine signalling systems; electric ovens and furnaces; industrial control units; and lighting systems.

**Safety Selective Switching:** may take the place of four switches where selectivity is required. Prevents the danger of throwing more than one switch at a time.

**Emergency Transfer of Spare Equipment:** in which case a special locking feature prevents the use of the switch without breaking a seal.

**Mechanical Construction:** equipped with two chromium-plated latch-plates, and two spring-actuated stainless steel pistons with clevis mounted roller in each piston to form the latch; plastic handle is fastened to the stem of the actuating mechanism with a set-screw; removable stop plates make it easy to incorporate the locking or non-locking action; slot in escutcheon plate is H-shaped and the action of the switch is similar to the gear shifting action of a standard automobile gear shift; a special escutcheon plate assembly makes it possible to seal the switch in any desired active position.

**Insulation:** breakdown rating, 2000 volts a.c.; contact spring pile-up insulators are Bakelite wafers; pile-up screws are insulated by tubing; assembled under pressure to avoid distortion.

## Ordering Contact Assemblies

When ordering specify:

**Action of Switch:** locking, non-locking, no-throw, and in what position action is required.

**Contact Forms and Location in Position:** whether Position 1 or Position 2; Series 4500, whether five positions (4505) or four positions (4504) are required.

**Contact Ratings:** whether standard heavy duty or extra heavy duty.

**Type of Mounting:** for Series 6300, regular or moisture-proof and thickness of panel.

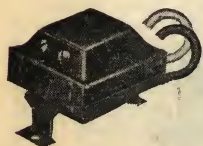
**Handle:** for Series 4200, phenolic (black, red, or white); for Series 4101, phenolic (black, red, or white) or knurled metal.



## No. 86 Edwards Doorbell Transformers

Primary 115 Volts, 60-140 or 25-50 Cycles; 230 Volts, 60-140 Cycles  
Secondary 10 Volts, 5 Watts

## Schedule S



Has mounting feet so transformers may be used without outlet box in districts where such box is not required. May be inserted in either round or square plates and mounted on outlet boxes. Steel clad.

Underwriters' Listed.  
Black finish.

No.	86	86X	86Y
Each	\$1.45	2.90	1.90
Volts	115	115	230
Cycles	60-140	25-50	60-140
Standard Package	6	6	6
Approx. Wt., Std. Pkg. pounds	9	9	9

## Edwards Tri-Volt Doorbell Transformers

Primary 115 Volts, 60-140 Cycles; 230 Volts, 60-140 Cycles

Secondary 6-12-18 Volts

## Schedule S



Permits an exact selection of the secondary voltage required and has a slightly greater capacity than the ordinary bell-ringer.

Particularly adapted for unusually long lines.

No.	874	874Y
Each	\$1.60	2.20
Volts	115	230
Cycles	60-140	60-140
Standard Package	20	20
Approx. Wt., Std. Pkg. lb.	9	12

## Edwards Signaling Transformers

Primary 110V., 60 Cycles  
Secondary 4-8-12-16-20-24 Volts



Completely enclosed. Binding posts eliminate splicing, soldering, and taping. Nos. 88 has Underwriters' approval. Forms own barrier between high and low voltage.

	Schedule S	Schedule C	
No.	88	7194	7195
*115V. 60 Cycles.....each	\$6.70	46.75	58.00
Watts	50	750	1000
Height.....inches	4 1/2	6 1/2	6 1/2
Width.....inches	3 5/8	7 1/2	9 3/4
Length.....inches	7 1/8	14 1/2	14 1/2
Approx. Weight.....pounds	8	42	58 1/4

\*Ratings apply to the 24-volt tap; 115-volt primaries may be used on up to 130 volts.

## Jefferson Wizard Bell Ringing Transformers



For residences or small flat buildings. Will operate door bells, buzzers, annunciators, and door openers. For 115 volts; 5 watts. Secondary, 10 volts. Size, 2x2x2 1/2 in. Weight, 1 lb. No. 230-101, 50-60 Cycles..... each \$1.45  
No. 230-102, 25-40 Cycles..... each 2.90

## Jefferson Nucode Bell Ringing Transformers

With Round or Square Cover

Mounted on an outlet box cover. Round cover fits 3/4 and 4-inch octagon boxes; square cover fits 3/4 and 4-inch octagon and 4-inch square boxes.

Knockout in cover permits hanging a drop cord from same outlet box. Transformer wires do not interfere with lighting wires. Grounded to prevent shocks or possibility of fires.

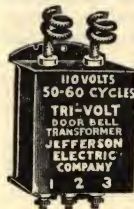
Depth, 2 1/4 inches; width, 2 3/8 inches; height, 2 1/4 inches.

Cat. No.	Each	Style Cover	Capacity Watts	PRIMARY Volts	Cycles	SECONDARY Voltages	Wt. Lbs.
230-111	\$1.80	Round	5	115	50-60	10	1 1/4
230-112	3.60	Round	5	115	25-40	10	1 1/4
230-141	1.80	Square	5	115	50-60	10	1 1/4
230-142	3.60	Square	5	115	25-40	10	1 1/4



No. 230-111

## Jefferson Tri-Volt Bell Ringing Transformers



For 115 volts a.c. Generates 3 secondary voltages: 6, 12 and 18 and will take care of longer leads than Wizard or Nucode.

Capacity, 5 watts; dimensions 2x2 1/2 x 3 3/4 inches. Weight 1 1/2 pounds.

No. 230-121, for 50-60 Cycles.... each \$1.80  
No. 230-122, for 25-40 Cycles.... each 3.25

## Jefferson Standard Signaling Transformers

115 Volts, A.C.



Designed to operate all types of a.c. bells, horns, and other signaling systems including relays, lamps, annunciators, etc. Core and windings are hermetically sealed in a heavy metal case for protection against

moisture. Wiring compartments are provided for both primary and secondary connections.

All transformers have 4, 8, 12, 16, 20 and 24 volt secondary voltages.

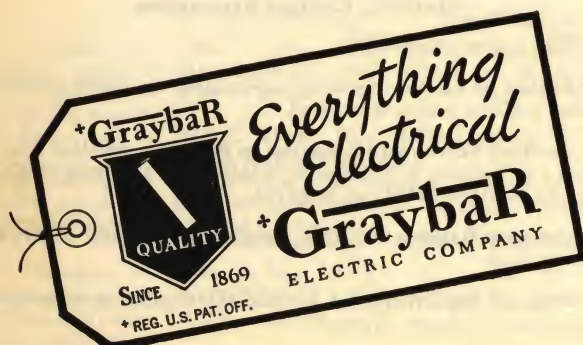
Listed as standard by Underwriters' Laboratories, Inc.

Max. Sec.  
Current  
at Any  
Voltage

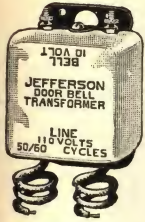
No.	Each	Cap. V.A.	Cycles	Amp.	Depth	Width	Length	Weight Pounds
231-101	\$6.70	50	50-60	2	4	4 11/32	7 11/16	7 1/2
231-102	10.70	50	25-40	2	4 3/4	4 11/32	7 11/16	8
231-111	10.70	100	50-60	4	4 3/4	4 11/32	7 11/16	11 3/4
231-112	17.10	100	25-40	4	5 1/2	4 11/32	7 11/16	13
231-141	24.00	250	50-60	10	5 1/2	4 11/32	7 11/16	14 3/4
231-142	38.40	250	25-40	10	5 7/8	5 9/16	10	28
231-151	38.80	500	50-60	20	5 7/8	5 9/16	10	28
231-152	62.00	500	25-40	20	8 5/8	6 5/8	10 3/4	59
231-171	46.75	750	50-60	30	7 5/8	5 9/16	10 5/8	35
231-172	75.00	750	25-40	30	8 5/8	6 5/8	10 3/4	84
231-181	58.00	1000	50-60	40	8 5/8	6 5/8	10 3/4	59
231-182	93.00	1000	25-40	40	8 5/8	6 5/8	12	99

For 230-volt transformers, add 15 per cent to above prices.

Transformers with primary circuit breaker; prices upon application.





**No. 230-131 Jefferson Porcelain-Klad Transformers****115 Volts, 50-60 Cycles**

Operates door bells, buzzers, annunciators and door openers in the average residence or small apartment building.

Porcelain covered transformer with a metal base for easy installation without the danger of breaking or chipping the case. Impervious to moisture or chemical fumes.

Size case,  $3\frac{1}{8} \times 3\frac{1}{8} \times 1\frac{7}{8}$  inches.

Secondary, 10 volts. Capacity, 5 watts.

Listed as standard by Underwriters' Laboratories, Inc.

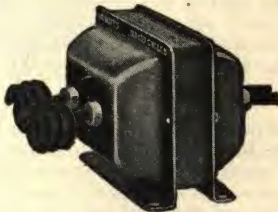
Not made for 230-volt or 25-40 cycles.

Weight,  $1\frac{3}{4}$  pounds.

No. 230-131.....each \$2.00

**Jefferson Low Voltage Transformers****115 Volts, 50-133 Cycles, A.C.**

Approved by Underwriters' Laboratories, Inc.



Designed for service wherever low voltage a.c. current is necessary, such as the operation of electrically controlled valves, thermostats, magnetic relays, etc.

Coils are layer built, automatically wound, have triple insulation, are vacuum treated, impregnated and baked.

The highest quality of silicon steel in shell design is used in this line of transformers. The core is locked against hum by varnish treatment and baking, and is securely clamped by the pressed-steel housings.

Heavy drawn steel sidings form the case of the control transformers. These sidings securely clamp the core and completely enclose the primary and secondary windings, shielding them from damage through rough handling. These sidings also form a base which has holes for convenient mounting.

Circuit breaker consists of a heavy bi-metallic member having a nichrome resistance element and phosphor bronze springs with large silver contacts. Parts are mounted on bakelite insulation and the re-set button is also of bakelite.

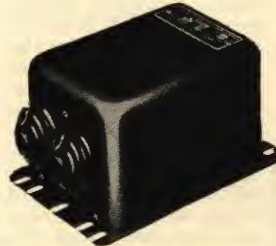
**Standard Types**

No.	Each	Cap. V.A.	Secondary Voltages	Weight Pounds
630-101	\$4.05	15	8	$1\frac{1}{2}$
630-104	3.65	10	12	$1\frac{1}{4}$
630-121	3.45	7.5	8	$1\frac{1}{4}$
637-101	5.25	25	8, 16, 24	$2\frac{1}{4}$
637-111	6.05	35	8, 16, 24	$2\frac{3}{4}$
637-121	7.20	50	8, 16, 24	4
637-131	8.85	75	8, 16, 24	$4\frac{1}{2}$
637-161	10.45	100	8, 16, 24	$5\frac{1}{4}$
637-171	13.90	150	8, 16, 24	$8\frac{1}{2}$
637-201	4.75	25	24	$2\frac{1}{4}$
637-211	5.50	35	24	$2\frac{3}{4}$
637-221	6.55	50	24	$3\frac{1}{2}$
637-231	8.05	75	24	$4\frac{1}{2}$
637-261	9.50	100	24	$5\frac{1}{4}$
637-271	12.65	150	24	$8\frac{1}{2}$
*637-251	7.80	50	6	$3\frac{3}{4}$
*637-241	10.75	100	6	$5\frac{1}{2}$

**Automatic Circuit Breaker Types**

637-301	\$9.85	25	24	$3\frac{1}{4}$
637-311	11.55	35	24	$3\frac{1}{4}$
637-321	13.20	50	24	$3\frac{1}{2}$
637-331	16.80	75	24	5
637-361	20.15	100	24	$5\frac{1}{4}$
637-371	26.40	150	24	$8\frac{1}{2}$

\*Equipped with primary cord and plug; therefore not approved by Underwriters' Laboratories.

**Jefferson Oil Burner Ignition Transformers****115 Volts, 60 Cycles, A.C.**

Nos. 638-171, 638-251,  
638-261 and 638-271



No. 638-281

The introduction of various types of burners has required the development of different types of transformers. This is a transformer for every specific application—5000, 10000, 12000 and 15000-volt ratings; for intermittent and continuous service; grounded, mid-point grounded, balanced mid-point grounded, and insulated secondaries; and in core and shell type designs.

The cool operation is accomplished by exacting requirements, liberal design throughout, plus the use of quality materials of adequate size which results in long transformer life.

Equipped with built-in radio barrier to eliminate the possibility of objectionable radio interference.

Nos. 638-171, 638-251, 638-261 and 638-271 are assembled in the new streamlined case. This case is of heavy drawn steel of exceptional durability, treated to resist rust and finished in a high lustre long-wearing black enamel. All other types are assembled in similarly rugged and attractive cases of standard design. Universal mounting brackets of sturdy design are provided.

A junction box of liberal proportions is built into the top of the case. Knockouts are provided in two sides and in the end of the case for convenient entrance. Quick and easy splicing results and there is ample space for additional wiring which any installation may require. Primary leads 24 inches long are standard on all types.

**Intermittent Duty Types****Grounded**

No.	Each	Cap V.A.	SECONDARY Volts	MA.	Type of Core	Max. Gap Setting Inches	No. of Weight Sec. Pounds
*638-281	\$15.80	125	5000	20	Shell	$\frac{1}{16}$	1 9
*638-191	\$15.80	125	Insulated 5000	20	Shell	$\frac{1}{16}$	2 9

**Continuous Duty Types****Grounded**

638-181	\$17.30	150	6000	20	Core	$\frac{1}{16}$	1 19
638-201	\$12.05	200	Mid-Point Grounded 8000	20	Core	$\frac{1}{8}$	1 13
638-171	\$19.30	250	Grounded 10000	23	Core	$\frac{3}{16}$	1 14
638-251	\$19.30	250	Mid-Point Grounded 10000	23	Core	$\frac{3}{16}$	2 14
638-331	\$19.30	250	Mid-Point Grounded 1000	23	Core	$\frac{3}{16}$	2 13
638-231	\$19.30	250	Mid-Point Grounded 10000	23	Core	$\frac{3}{16}$	2 15
638-261	\$19.30	250	Mid-Point Grounded 10000	23	Core	$\frac{3}{16}$	2 14
638-271	\$20.75	250	Mid-Point Grounded 12000	20	Core	$\frac{1}{4}$	2 14
638-341	\$20.75	250	Mid-Point Grounded 12000	20	Core	$\frac{1}{4}$	2 14
638-291	\$26.15	450	Mid-Point Grounded 15000	30	Shell	$\frac{1}{8}$	2 22
638-291-007	\$38.40	450	Mid-Point Grounded 15000	30	Shell(2)	$\frac{1}{8}$	2 22

\*Not equipped with radio filter.

These transformers are obtainable in other voltages and frequencies at extra cost. Prices upon application.



## Jefferson Luminous Tube Sign Transformers



Nos. 721-111 and 721-121

Designed for use in all types of portable or fixed, indoor or outdoor neon signs. Complete assortment of models provides a transformer to meet the most exacting requirements, both as to electrical and mechanical details.

Mid-point grounded, balanced design, patented construction, and many other improvements insure perfect secondary current regulation regardless of length of tubing operated, high efficiency permitting long tube length, cool operation, quietness, long life, neat appearance, and lightness in weight.

Case in which transformer is assembled is made of extra heavy rust-resisting steel, flanged construction and with substantial brackets, insuring rugged construction. Binding posts and nuts are cadmium-plated to guard against corrosion. Case is black enameled, baked thoroughly to present a tough and durable finish.

115 Volts, 60 Cycles  
Binding Posts Standard (One at Each End of Case)

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	DIMENSIONS, In.			Approx. Ship. Weight Pounds
					Length	Width	Height	
721-111	\$18.90	450	15000	30	14 $\frac{3}{4}$	4 $\frac{3}{4}$	6 $\frac{1}{2}$	31
721-121	17.80	360	12000	30	14 $\frac{3}{4}$	3 $\frac{3}{4}$	6 $\frac{1}{2}$	30
721-321	15.00	200	12000	18	13 $\frac{1}{4}$	4 $\frac{3}{4}$	3 $\frac{5}{8}$	20
721-421	14.50	250	9000	30	13 $\frac{1}{4}$	4 $\frac{3}{4}$	3 $\frac{5}{8}$	19 $\frac{1}{2}$
721-341	11.90	190	9000	18	11 $\frac{5}{8}$	3	4 $\frac{1}{2}$	14
721-151	14.00	225	7500	30	13 $\frac{1}{4}$	4 $\frac{3}{4}$	3 $\frac{5}{8}$	19
721-351	11.00	150	7500	18	11 $\frac{5}{8}$	3	4 $\frac{1}{2}$	13
*721-161	11.40	150	5000	30	9	4 $\frac{3}{8}$	5	13
*721-361	8.30	100	5000	18	9 $\frac{1}{4}$	3 $\frac{1}{2}$	4 $\frac{3}{4}$	9 $\frac{3}{4}$
*721-191	7.90	100	3000	30	8 $\frac{3}{8}$	3 $\frac{5}{8}$	4 $\frac{3}{4}$	9
*721-391	7.50	75	3000	18	8 $\frac{3}{8}$	3 $\frac{5}{8}$	4 $\frac{3}{4}$	8

115 Volts, 25 Cycles  
Binding Posts Standard (One at Each End of Case)

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Approx. Ship. Weight Pounds
721-112	\$30.30	450	15000	30	16 $\frac{1}{4}$	5 $\frac{1}{16}$	7 $\frac{5}{16}$	53
721-122	28.50	360	12000	30	16 $\frac{1}{4}$	5 $\frac{1}{16}$	7 $\frac{5}{16}$	47
721-142	23.20	250	9000	30	14 $\frac{3}{4}$	4 $\frac{15}{16}$	6 $\frac{1}{2}$	34
721-162	18.50	150	5000	30	11 $\frac{9}{16}$	4 $\frac{15}{16}$	5 $\frac{11}{16}$	21

## High Intensity Types

115 Volts, 60 Cycles  
Binding Posts Standard (One at Each End of Case)

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Approx. Ship. Weight Pounds
721-411	\$26.50	825	15000	60	16 $\frac{1}{4}$	5 $\frac{1}{16}$	7 $\frac{5}{16}$	60
721-421	24.30	720	12000	60	16 $\frac{1}{4}$	5 $\frac{1}{16}$	7 $\frac{5}{16}$	56
721-441	20.30	500	9000	60	14 $\frac{1}{2}$	5 $\frac{3}{4}$	6 $\frac{3}{8}$	38
721-451	18.50	450	7500	60	14 $\frac{3}{4}$	4 $\frac{3}{4}$	6 $\frac{1}{2}$	31
721-461	11.70	300	5000	60	14 $\frac{3}{4}$	4 $\frac{3}{4}$	6 $\frac{1}{2}$	28 $\frac{1}{2}$
721-491	8.60	180	3000	60	13 $\frac{1}{4}$	4 $\frac{3}{4}$	3 $\frac{5}{8}$	17

## High Power Factor Types

115 Volts, 60 Cycles  
Binding Posts Standard (One at Each End of Case)

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Approx. Ship. Weight Pounds
724-411	\$37.20	450	15000	60	16 $\frac{1}{4}$	5 $\frac{1}{16}$	7 $\frac{5}{16}$	60
724-421	35.00	400	12000	60	16 $\frac{1}{4}$	5 $\frac{1}{16}$	7 $\frac{5}{16}$	59
724-441	27.00	275	9000	60	14 $\frac{1}{2}$	5 $\frac{3}{4}$	6 $\frac{3}{8}$	37
724-451	24.40	250	7500	60	14 $\frac{3}{4}$	4 $\frac{3}{4}$	6 $\frac{1}{2}$	31 $\frac{1}{2}$
724-461	21.80	150	5000	60	14 $\frac{3}{4}$	4 $\frac{3}{4}$	6 $\frac{1}{2}$	32
724-491	17.30	100	3000	60	14 $\frac{1}{2}$	4 $\frac{3}{4}$	4 $\frac{3}{8}$	19 $\frac{3}{4}$
724-111	24.30	250	15000	30	14 $\frac{3}{4}$	4 $\frac{3}{4}$	6 $\frac{1}{16}$	31 $\frac{1}{2}$
724-121	23.20	200	12000	30	14 $\frac{3}{4}$	4 $\frac{3}{4}$	6 $\frac{1}{16}$	31
724-141	19.80	150	9000	30	13 $\frac{1}{4}$	4 $\frac{3}{4}$	4 $\frac{3}{8}$	22 $\frac{1}{2}$
724-341	17.30	110	9000	18	13 $\frac{1}{4}$	4 $\frac{3}{4}$	4 $\frac{3}{8}$	22
724-151	19.00	110	7500	30	13 $\frac{1}{4}$	4 $\frac{3}{4}$	4 $\frac{3}{8}$	27

## Weatherproof Types

115 Volts, 60 Cycles  
Binding Posts Standard (One at Each End of Case)

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Approx. Ship. Weight Pounds
722-411	\$31.90	825	15000	60	6 $\frac{1}{4}$	6 $\frac{1}{4}$	15	72
722-111	24.30	450	15000	30	6 $\frac{1}{4}$	6 $\frac{1}{4}$	15	52 $\frac{1}{2}$
722-421	29.70	720	12000	60	6 $\frac{1}{4}$	6 $\frac{1}{4}$	15	70
722-121	23.20	260	12000	30	6 $\frac{1}{4}$	6 $\frac{1}{4}$	15	51
722-441	25.70	500	9000	60	6 $\frac{1}{4}$	6 $\frac{1}{4}$	15	51
722-141	19.80	250	9000	30	6 $\frac{1}{4}$	6 $\frac{1}{4}$	15	48 $\frac{1}{2}$
722-451	23.90	450	7500	60	6 $\frac{1}{4}$	6 $\frac{1}{4}$	15	51
722-151	19.50	225	5700	30	6 $\frac{1}{4}$	6 $\frac{1}{4}$	15	47

## Core and Coil Types

115 Volts, 60 Cycles  
Unenclosed (6-Inch Primary and Secondary Leads)

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Approx. Ship. Weight Pounds
*720-361	\$5.40	100	5000	18	3 $\frac{3}{4}$	2 $\frac{1}{2}$	4 $\frac{5}{8}$	6
*720-391	3.70	75	3000	18	3 $\frac{1}{16}$	2 $\frac{1}{2}$	3 $\frac{3}{4}$	4

\*These are not mid-point grounded balanced design. Streamlined case.

## Jefferson Indoor Luminous Tube Sign Transformers

115 Volts, 60 Cycles



Type 726 with Hanging Bracket

Designed to meet the requirements of the National Electric Code and Underwriters' Laboratories, Inc. The compactness of the streamlined case and the convenient end compartments make this line adaptable to every type of indoor luminous sign.

Two groups of transformers are available—Series No. 728 having secondary spring contact electrode housings, and Series No. 726 with secondary cables. Transformers in either series are furnished with or without 3-conductor cord and 2-prong plug with means for grounding and primary pull switch.

There are no exposed live metal parts in the high tension secondary circuit. Primary connections are screw terminals, panel-mounted, inside the end compartment. No soldering is required. Removal of end caps exposes the wiring compartments for easy and quick wiring. A combination knock-out and bushing in top of case provides for primary current entry through cord and plug, or through flexible or rigid conduit.

Hanging brackets, which prevent swinging movement of transformer and tubing, are furnished as standard equipment. Mounting supports for Series No. 728 are also available when it is desired to use the transformer and tubing in standing position.

Furnished in gray finish, hammered metal in appearance.

## With Electrode Housings

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Approx. Ship. Weight Pounds
728-141	\$19.00	250	9000	30	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	31
728-341	17.60	190	9000	18	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	19
728-151	18.90	225	7500	30	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	18
728-351	16.20	150	7500	18	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	15
728-161	17.50	150	5000	30	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	15
728-361	14.00	100	5000	18	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	14

## With 3-Foot Secondary Cables

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Approx. Ship. Weight Pounds
726-141	\$19.00	250	9000	30	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	31
726-341	17.60	190	9000	18	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	19
726-151	18.90	225	7500	30	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	18
726-351	16.20	150	7500	18	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	15
726-161	15.70	150	5000	30	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	15
726-361	14.00	100	5000	18	15 $\frac{1}{2}$	3 $\frac{3}{16}$	6	14

## With Electrode Housings

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Approx. Ship. Weight Pounds
728-111	\$22.30	450	15000	30	16 $\frac{1}{2}$	6 $\frac{1}{16}$	7 $\frac{5}{16}$	34 $\frac{1}{2}$
728-121	21.00	360	12000	30	16 $\frac{1}{2}$	6 $\frac{1}{16}$	7 $\frac{5}{16}$	34 $\frac{1}{2}$

## With 3-Foot Secondary Cables

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Approx. Ship. Weight Pounds
726-111	\$22.30	450	15000	30	16 $\frac{1}{2}$	6 $\frac{1}{16}$	7 $\frac{5}{16}$	33
726-121	21.00	360	12000	30	16 $\frac{1}{2}$	6 $\frac{1}{16}$	7 $\frac{5}{16}$	33

Series No. 728 may be used as hanging or standing type—standing brackets No. 728-001 supplied at slight additional cost. Series No. 726 is for hanging only, with eyelet supports for glass tubing.

For transformers of High Power-Factor type, add numeral "4" to catalog number—example: 728-4111 for 15000 volt 30 M.A. type.



## Jefferson Transformers for Mercury Lamps

For 60-Cycle Operation

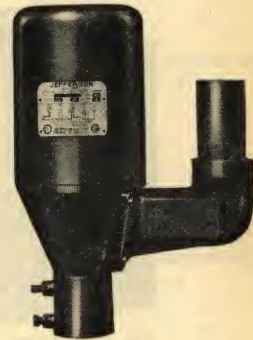
Listed By Underwriters' Laboratories, Inc.  
Certified by Electrical Testing Laboratories



Nos. 232-901 and 232-903



Indoor Wall Type



No. 232-741

### Indoor Type—H-1,400-Watt

For Wall Mounting and Fixture Suspension Installation

No.	Primary Voltage	Frequency	Cap. V. A.	Description	Approx. Wt. Lb.
232-811	100/107/115/123	60	650	Normal Power Factor Transformer	25 $\frac{1}{4}$
232-813	200/215/230/245	60	650	Normal Power Factor Transformer	25 $\frac{1}{4}$
232-821	100/107/115/123	60	450	High Power Factor Transformer	27 $\frac{3}{4}$
232-823	200/215/230/245	60	450	High Power Factor Transformer	27 $\frac{3}{4}$

### Weather-Proof Wall Mounting Type—H-1, 400-Watt

For Outdoor Service

232-611	100/107/115/123	60	650	Normal Power Factor Transformer	29 $\frac{1}{2}$
232-613	200/215/230/245	60	650	Normal Power Factor Transformer	29 $\frac{1}{2}$
232-621	100/107/115/123	60	450	High Power Factor Transformer	30
232-623	200/215/230/245	60	450	High Power Factor Transformer	30

### Weather-Proof Pole Mounting Type—H-1, 400-Watt

For Outdoor Floodlighting

232-711	100/107/115/123	60	650	Normal Power Factor Transformer	31 $\frac{1}{2}$
232-713	200/215/230/245	60	650	Normal Power Factor Transformer	31 $\frac{1}{2}$
232-721	100/107/115/123	60	450	High Power Factor Transformer	32
232-723	200/215/230/245	60	450	High Power Factor Transformer	32

### Weather-Proof Pole Mounting Type—H-1, 400-Watt

With Fixture Mounting Support

232-741	100/107/115/123	60	650	Normal High Power Transformer	33
232-743	200/215/230/245	60	650	Normal Power Factor Transformer	33
232-751	100/107/115/123	60	450	High Power Factor Transformer	34
232-753	200/215/230/245	60	450	High Power Factor Transformer	34

### Two-Lamp Transformers for 400-Watt Mercury Lamps

232-901	100/107/115/123	60	875	Indoor Type—High Power Factor	46
232-903	200/215/230/245	60	875	Indoor Type—High Power Factor	46
232-911	100/107/115/123	60	875	Outdoor Type—High Power Factor	56
232-913	200/215/230/245	60	875	Outdoor Type—High Power Factor	56

### Indoor Type—H-5, 250 Watt

For Wall Mounting and Fixture Suspension Installation

232-861	100/107/115/123	60	...	Normal Power Factor Transformer	25
232-863	200/215/230/245	60	...	Normal Power Factor Transformer	25
232-871	100/107/115/123	60	...	High Power Factor Transformer	27 $\frac{1}{2}$
232-873	200/215/230/245	60	...	High Power Factor Transformer	27 $\frac{1}{2}$

### Two-Lamp Transformers for H-5, 250-Watt Mercury Lamps

232-921	100/107/115/123	60	...	Indoor Type—High Power Factor	46
232-923	200/215/230/245	60	...	Indoor Type—High Power Factor	46

### Weather-Proof Wall Mounting Type—H-5, 250 watt

232-671	100/107/115/123	60	...	Normal Power Factor Transformer	29 $\frac{1}{2}$
232-673	200/215/230/245	60	...	Normal Power Factor Transformer	29 $\frac{1}{2}$
232-681	100/107/115/123	60	...	High Power Factor Transformer	30
232-683	200/215/230/245	60	...	High Power Factor Transformer	30

Transformers for operation on 50 cycle source available in full range of types.  
Unenclosed type transformers can be furnished on application.



## G-E Autotransformers for High-Intensity Type H Mercury Lamps

The successful operation of high-intensity Type H mercury lamps depends on a transformer that must give proper starting and running characteristics, and must be a dependable source of power. As a result of close co-operation of transformer design and lamp design, General Electric has developed lines of autotransformers that assure matched performance with the lamps and most efficient operation.

### Enclosed Tulamp Autotransformers

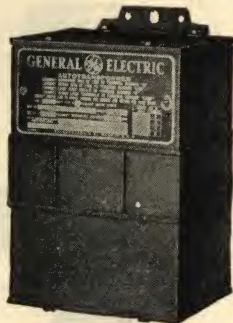


Fig. 1, Enclosed Tulamp Autotransformer

Enclosed Tulamp transformers are provided for the H1 and the H5 lamps. Tulamp transformers make use of the split-phase principle in which one lamp is ballasted by reactance only and the other lamp is ballasted by reactance and capacitance in series. The lagging power factor of the reactance branch offsets the leading power factor of the capacitance branch, resulting in an overall power factor of above 95 per cent. The phase displacement of currents in the two branches results in a materially reduced stroboscopic effect when the lamps are mounted adjacent to one another in pairs. As only one transformer is required for two lamps, lower first cost and installation cost will result. These transformers are suitable for wall or ceiling mounting. A large junction box with terminal board is part of the housing.

### Enclosed Autotransformers



Fig. 2, Enclosed Autotransformer



Fig. 3, Enclosed Autotransformer for H-9 Lamp

Enclosed single-lamp transformers are listed for the H1, H2, H4, H5, and H9 lamps. These transformers, with the exception of H9 (high-power-factor only), are available in either the high-power-factor design or the normal-power-factor design. In the high-power-factor units, a G-E Pyranol capacitor is included in the housing, increasing the power factor to a minimum value of 90 per cent. These transformers can be mounted on the wall or ceiling, or suspended from conduit. Roomy junction boxes with terminal boards are built into all enclosed transformers.

### Weatherproof Autotransformers

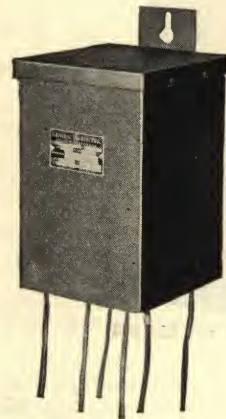


Fig. 4, Weatherproof Autotransformers

Weatherproof transformers are listed for the H1, H2, H4, and H5 lamps. These transformers are designed for outdoor installation, and are built in heavy sheet metal housings with brackets for wall or pole mounting. These transformers have leads for open wiring to the line and lamp circuits. As with the enclosed autotransformers, the weatherproof designs are available either with or without self-contained power-factor improvement by means of a G-E Pyranol capacitor mounted within the housing.

### Core-and-Coil Autotransformer

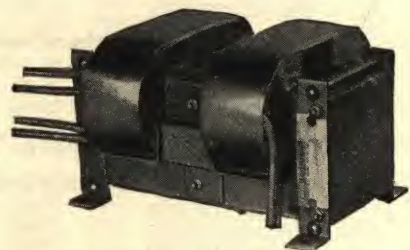


Fig. 5, Core-and-Coil Autotransformer

Core-and-coil transformers are listed for all except H9 lamps. These are recommended when they are to be built into the lighting fixture or machine by the fixture or equipment manufacturer. The fixture should be ventilated to allow free air circulation around the transformer.

### Voltage Taps

Since the lamp must be operated within rather close voltage limits, taps are provided for satisfactory operation over a wide range of line voltages. The 230-volt ratings have taps at 245, 230, 215, and 200 volts; and the 115-volt ratings have taps at 123, 115, 107, and 100 volts. On the enclosed transformers, tap changing is simplified by means of a jumper lead for connecting to terminals on the terminal board.



## G-E Autotransformers for High-Intensity Type H Mercury Lamps

H-1 400-Watt Lamp Enclosed Tulamp Autotransformer  
Appearance Similar to Fig. 1

No.	Fre- quency Cycles	Circuit Voltage	Approx. Line Power Factor Per Cent	Approx. Overall Dimensions Inches	Approx. Ship. Wt. Lb.	Each
58G106	60	115	95	7 $\frac{5}{8}$ x6 $\frac{1}{2}$ x13 $\frac{1}{8}$	42	\$30.45
58G116	60	230	95	7 $\frac{5}{8}$ x6 $\frac{1}{2}$ x13 $\frac{1}{8}$	42	30.45
58G107	50	115	95	7 $\frac{5}{8}$ x6 $\frac{1}{2}$ x13 $\frac{5}{8}$	48	34.90
58G117	50	230	95	7 $\frac{5}{8}$ x6 $\frac{1}{2}$ x13 $\frac{5}{8}$	48	34.90

H-1 400-Watt Lamp Core-and-Coil Autotransformer  
Appearance Similar to Fig. 5

58G1	60	115	60	6 x5 $\frac{5}{8}$ x 6 $\frac{1}{4}$	19 $\frac{3}{4}$	\$11.85
58G11	60	230	60	6 x5 $\frac{5}{8}$ x 6 $\frac{1}{4}$	19 $\frac{3}{8}$	11.85
58G5	50	115	60	6 x6 x 6 $\frac{1}{4}$	23	13.60
58G15	50	230	60	6 x6 x 6 $\frac{1}{4}$	23	13.60

H-1 400-Watt Lamp Enclosed Autotransformer  
Appearance Similar to Fig. 2

58G2	60	115	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{1}{8}$	31 $\frac{1}{4}$	\$20.90
58G12	60	230	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{1}{8}$	31 $\frac{1}{4}$	20.90
58G6	50	115	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{3}{4}$	36 $\frac{3}{4}$	24.10
58G16	50	230	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{3}{4}$	36 $\frac{3}{4}$	24.10
58G3	60	115	60	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x11 $\frac{3}{4}$	26	15.35
58G13	60	230	60	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x11 $\frac{3}{4}$	26	15.35
58G7	50	115	60	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{1}{8}$	30 $\frac{1}{4}$	17.60
58G17	50	230	60	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{1}{8}$	30 $\frac{1}{4}$	17.60

H-1 400-Watt Lamp Weatherproof Autotransformer  
Appearance Similar to Fig. 4

58G10	60	115	90	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	40 $\frac{1}{2}$	\$22.35
58G20	60	230	90	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	40 $\frac{1}{2}$	22.35
58G26	50	115	90	7 $\frac{1}{8}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	46	25.80
58G36	50	230	90	7 $\frac{1}{8}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	46	25.80
58G9	60	115	60	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	16.75
58G19	60	230	60	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	16.75
58G25	50	115	60	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	19.20
58G35	50	230	60	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	19.20

H-2 250-Watt Lamp Core-and-Coil Autotransformer  
Appearance Similar to Fig. 5

58G41	60	115	45	6 x5 $\frac{5}{8}$ x 6 $\frac{1}{4}$	19 $\frac{3}{4}$	\$11.85
58G51	60	230	45	6 x6 x 6 $\frac{1}{4}$	19 $\frac{3}{4}$	11.85
58G45	50	115	45	6 x6 x 6 $\frac{1}{4}$	23	13.60
58G55	50	230	45	6 x6 $\frac{5}{8}$ x 6 $\frac{1}{4}$	23	13.60

H-2 250-Watt Lamp Enclosed Autotransformer  
Appearance Similar to Fig. 2

58G42	60	115	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{1}{8}$	31 $\frac{1}{4}$	\$20.90
58G52	60	230	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{1}{8}$	32	20.90
58G46	50	115	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{3}{4}$	36 $\frac{3}{4}$	24.10
58G56	50	230	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{3}{4}$	39 $\frac{3}{4}$	24.10
58G43	60	115	45	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x11 $\frac{3}{4}$	26	15.35
58G53	60	230	45	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{1}{8}$	30	15.35
58G47	50	115	45	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{1}{8}$	30 $\frac{1}{4}$	17.60
58G57	50	230	45	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{1}{8}$	33 $\frac{3}{4}$	17.60

H-2 250-Watt Lamp Weatherproof Autotransformer  
Appearance Similar to Fig. 4

58G50	60	115	90	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	40 $\frac{1}{2}$	\$22.35
58G60	60	230	90	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	40 $\frac{1}{2}$	22.35
58G66	50	115	90	7 $\frac{1}{8}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	46	25.80
58G76	50	230	90	7 $\frac{1}{8}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	46	25.80
58G49	60	115	45	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	16.75
58G59	60	230	45	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	16.75
58G65	50	115	45	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	19.20
58G75	50	230	45	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	19.20

H-3 85-Watt Lamp Core-and-Coil Autotransformer  
Appearance Similar to Fig. 5

59G1A	60	115	50	4 $\frac{3}{4}$ x2 $\frac{5}{8}$ x 3 $\frac{5}{8}$	7	\$7.00
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H-4 100-Watt Lamp Core-and-Coil Autotransformer  
Appearance Similar to Fig. 5

No.	Fre- quency Cycles	Circuit Voltage	Approx. Line Power Factor Per Cent	Approx. Overall Dimensions Inches	Approx. Ship. Wt. Lb.	Each
59G16	60	115	50	3 $\frac{3}{4}$ x3 $\frac{3}{8}$ x 4 $\frac{5}{8}$	8	\$7.00
59G26	60	230	50	3 $\frac{3}{4}$ x3 $\frac{3}{8}$ x 4 $\frac{5}{8}$	8	7.65
59G17	50	115	50	3 $\frac{3}{4}$ x3 $\frac{7}{8}$ x 4 $\frac{5}{8}$	10	8.00
59G27	50	230	50	3 $\frac{3}{4}$ x3 $\frac{7}{8}$ x 4 $\frac{5}{8}$	10	8.70

H-4 100-Watt Lamp Enclosed Autotransformer  
Appearance Similar to Fig. 2

59G22	60	115	50	5 $\frac{5}{8}$ x4 x 5	9	\$16.75
59G32	60	230	50	5 $\frac{5}{8}$ x4 x 5	9	16.75
59G18	60	115	50	5 $\frac{5}{8}$ x4 x 5	9	9.75
59G28	60	230	50	5 $\frac{5}{8}$ x4 x 5	9	10.45
59G19	50	115	50	5 $\frac{5}{8}$ x4 x 5 $\frac{1}{2}$	11	11.20
59G29	50	230	50	5 $\frac{5}{8}$ x4 x 5 $\frac{1}{2}$	11	12.25

H-4 100-Watt Lamp Weatherproof Autotransformer  
Appearance Similar to Fig. 4

59G20	60	115	50	5 x5 $\frac{1}{16}$ x 8 $\frac{7}{8}$	10	\$12.60
59G30	60	230	50	5 x5 $\frac{1}{16}$ x 8 $\frac{7}{8}$	10	13.25
59G21	50	115	50	5 x5 $\frac{1}{16}$ x 8 $\frac{7}{8}$	11 $\frac{1}{2}$	14.45
59G31	50	230	50	5 x5 $\frac{1}{16}$ x 8 $\frac{7}{8}$	11 $\frac{1}{2}$	15.90

H-5 250-Watt Lamp Enclosed Tulamp Autotransformer  
Appearance Similar to Fig. 1

58G225	60	115	95	7 $\frac{5}{8}$ x6 $\frac{1}{2}$ x13 $\frac{1}{8}$	39	\$30.45
58G235	60	230	95	7 $\frac{5}{8}$ x6 $\frac{1}{2}$ x13 $\frac{1}{8}$	39	30.45
58G226	50	115	95	7 $\frac{5}{8}$ x6 $\frac{1}{2}$ x13 $\frac{5}{8}$	48	34.90
58G236	50	230	95	7 $\frac{5}{8}$ x6 $\frac{1}{2}$ x13 $\frac{5}{8}$	48	34.90

H-5 250-Watt Lamp Core-and-Coil Autotransformer  
Appearance Similar to Fig. 5

58G131	60	115	50	6 x5 $\frac{5}{8}$ x 6 $\frac{1}{4}$	19 $\frac{3}{4}$	\$11.85
58G141	60	230	50	6 x5 $\frac{5}{8}$ x 6 $\frac{1}{4}$	19 $\frac{3}{4}$	11.85
58G135	50	115	50	6 x5 $\frac{5}{8}$ x 6 $\frac{1}{4}$	19 $\frac{3}{4}$	13.60
58G145	50	230	50	6 x5 $\frac{5}{8}$ x 6 $\frac{1}{4}$	19 $\frac{3}{4}$	13.60

H-5 250-Watt Lamp Enclosed Autotransformer  
Appearance Similar to Fig. 2

58G132	60	115	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{1}{8}$	31 $\frac{1}{4}$	\$20.90
58G142	60	230	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{1}{8}$	31 $\frac{1}{4}$	20.90
58G136	50	115	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{3}{4}$	36 $\frac{3}{4}$	24.10
58G146	50	230	90	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x12 $\frac{3}{4}$	36 $\frac{3}{4}$	24.10
58G133	60	115	50	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x11 $\frac{3}{4}$	26	15.35
58G143	60	230	50	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x11 $\frac{3}{4}$	26	15.35
58G137	50	115	50	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x11 $\frac{3}{4}$	30 $\frac{1}{4}$	17.60
58G147	50	230	50	6 $\frac{1}{8}$ x6 $\frac{1}{4}$ x11 $\frac{3}{4}$	30 $\frac{1}{4}$	17.60

H-5 250-Watt Lamp Weatherproof Autotransformer  
Appearance Similar to Fig. 4

58G140	60	115	90	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	40 $\frac{1}{2}$	\$22.35
58G150	60	230	90	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	40 $\frac{1}{2}$	22.35
58G156	50	115	90	7 $\frac{1}{8}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	46	25.80
58G166	50	230	90	7 $\frac{1}{8}$ x6 $\frac{3}{4}$ x12 $\frac{7}{8}$	46	25.80
58G139	60	115	50	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	16.75
58G149	60	230	50	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	16.75
58G155	50	115	50	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	19.20
58G165	50	230	50	6 $\frac{1}{2}$ x6 $\frac{3}{4}$ x11 $\frac{5}{8}$	35	19.20

H-6 1000-Watt Core-and-Coil Transformer  
Appearance Similar to Fig. 5

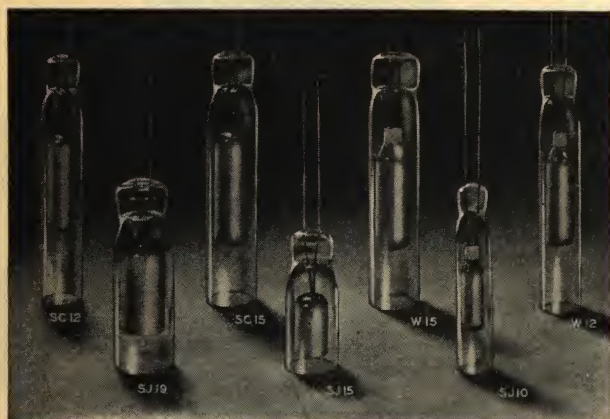
59G37	60	115	65	9 $\frac{1}{8}$ x7 $\frac{1}{2}$ x 6 $\frac{1}{4}$	48	\$30.00
59G38	60	230	65	9 $\frac{1}{8}$ x7 $\frac{1}{2}$ x 6 $\frac{1}{4}$	48	30.00
59G39	50	115	65	9 $\frac{1}{8}$ x7 $\frac{1}{2}$ x 6 $\frac{1}{4}$	49	34.95
59G40	50	230	65	9 $\frac{1}{8}$ x7 $\frac{1}{2}$ x 6 $\frac{1}{4}$	49	34.95

H-9 3000-Watt Enclosed Autotransformer  
Appearance Similar to Fig. 3

59G212	60	230	90	8 $\frac{1}{8}$ x7 x33 $\frac{7}{8}$	190	\$167.20
59G213	60	460	90	7 x6 $\frac{1}{4}$ x37 $\frac{1}{8}$	160	125.40
59G214	60	575	90	7 x6 $\frac{1}{4}$ x36 $\frac{1}{2}$	155	125.40



### Superior Supro Electrodes For Neon Tubes



Stain-free and crack-free with electrode coating which does not need to be broken down during bombardment and which gives a minimum of snaking with mercury tubes.

Sputtering is minimized and the voltage drop is low.

Equipped with full length Westinghouse dumet leads.

Available in BASED, which consists of a metal cap cemented to the electrode with bakelite cement and having the leads soldered to the cap.

No.	Each	Size of Shell Inches	Maximum Operating Current Milliamperes	Diameter of Glass Millimeters	Length Inches	Sven Shells
SC15	\$.09	$\frac{3}{8} \times 1\frac{5}{16}$	60	15	$2\frac{3}{4}$	1
SC12	\$.08\frac{1}{2}	$\frac{5}{16} \times 1\frac{3}{16}$	45	12	$2\frac{3}{4}$	1
WF15	.10	$\frac{3}{8} \times 1\frac{5}{16}$	100	15	$2\frac{3}{4}$	2
SB15	\$.09\frac{1}{2}	$\frac{3}{8} \times 1\frac{5}{16}$	45	15	$2\frac{3}{4}$	†1
SJ10	\$.08\frac{1}{2}	$\frac{1}{4} \times 1\frac{1}{4}$	30	10	2	1
SJ15	.09	$\frac{3}{8} \times \frac{5}{8}$	30	15	2	1
*SJ19	.11	$\frac{1}{2} \times 1$	100	19	2	1
*WJ19	.13	$\frac{1}{2} \times 1$	120	19	2	2
*SC19	.12	$\frac{1}{2} \times 1\frac{1}{4}$	120	19	$2\frac{1}{2}$	1
*WF19	.15	$\frac{1}{2} \times 1\frac{5}{8}$	200	19	$2\frac{1}{2}$	2

\*Chiefly used for cold cathode lighting.

†Uncoated.

Additional types are available, prices on request.

Stranded wire leads can be furnished at additional cost.

### Supro Lux Fluorescent Tubing

Available in diameters from 8 to 25 millimeters.

Packed, 40 pounds of glass in a carton containing four paper packed bundles of 10 pounds each.

	10 Mm. or Larger	9 Mm.	8 Mm.
No. G23, Green, Amber Gold when Pumped with Neon Only...per pound	\$.65	\$.85	\$1.05
No. L34, Blue, Pink when Pumped with Neon Only.....per pound	.75	.90	1.10
No. F52, Cream White, Formerly Powder White.....per pound	.75	.90	1.10
No. O13, Farm White.....per pound	.75	.90	1.10
No. V45, Snow White.....per pound	.75	.90	1.10
No. D66, Interior White...per pound	.75	.90	1.10
No. S81, Yellow Gold, in Noviol Glass.....per pound	1.40	1.55	1.70
No. P73, Old Gold, in Noviol Glass.....per pound	1.40	1.55	1.70

#### Standard Fluorescent Lighting Association Colors

**No. 3500 White.** Similar to that used in hot cathode fluorescent lamps. Recommended for general lighting and is the brightest of all the colors.

Per pound..... \$ .75

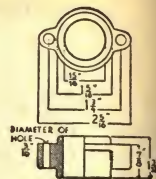
**Daylight White.** Also similar to that used in hot cathode fluorescent lamps but is not as cold a color. Not recommended for signs.

Per pound..... \$ .75

**Soft White.** White with a reddish cast. Excellent where foods are used or displayed and is flattering to the human complexion. May also be used on signs.

Per pound..... \$ .75

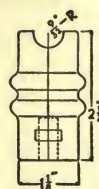
### Knox Porcelain Electrode Bushings



White glaze standard. Other colors upon request.

No.	Description	Panel Opening Inches	Car-ton	Wt., Lb. per 100
7005	Without Fittings	$1\frac{3}{8}$	100	12
7005-S	With Screw Sets and Screws	$1\frac{3}{8}$	100	13

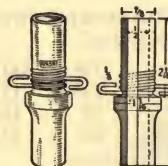
### Knox Porcelain High Tension Cable Supports



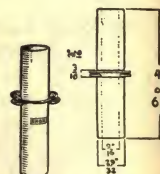
White glaze standard.

No.	Description	Car-ton	Wt., Lb. per 100
7060	Slotted for Inserting Nut and Screw	100	24
7060-S	With Screw Set and Screws	100	25

### Knox Porcelain Assembled Cable Bushings



No. 7011



Nos. 7013 and 7014

All metal parts cadmium plated. White glaze standard.

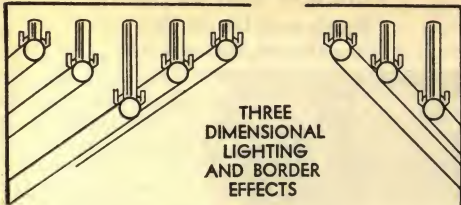
No.	Panel Opening Inches	Length Inches	Wt., Lb. per 100
7011	1	4	20
7013	1	$4\frac{5}{8}$	18
7014	1	$6\frac{5}{8}$	20

### Neon Supplies—Miscellaneous Materials

<b>Cable</b> , Rubber Covered	<b>Lamps</b> , Flood, Mazda, Portable
<b>Conduit</b>	<b>Mercury</b>
<b>Cord</b> , Extension	<b>Mica Sheets</b>
<b>Cord Sets</b>	<b>Motors and Controls</b>
<b>Cutouts</b>	<b>Poles</b> , Metal for Supporting Signs
<b>Drills</b> , Electric	<b>Reflectors</b> , Porcelain
<b>Fans</b> , Ventilating	<b>Soldering Irons</b> , Electric
<b>Fuses</b>	<b>Solder</b> , Bar, Wire, Flux
<b>Guards</b> , Lamp	<b>Stop Cocks</b> , Glass
<b>Hammers</b> , Electric	<b>Wire</b> , Rubber Covered
<b>Heaters</b> , Electric	
<b>Insulating Materials</b>	



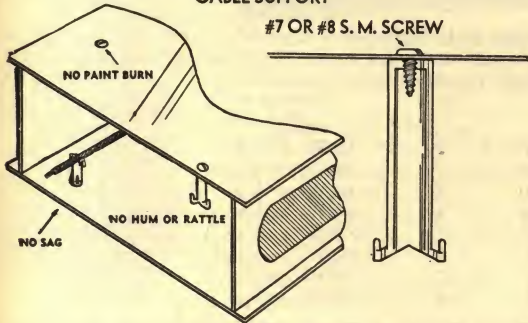
## Peco Tube and Cable Supports



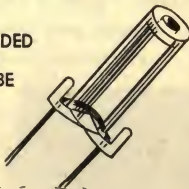
THREE  
DIMENSIONAL  
LIGHTING  
AND BORDER  
EFFECTS

CABLE SUPPORT

#7 OR #8 S. M. SCREW



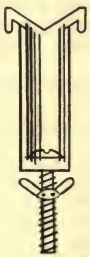
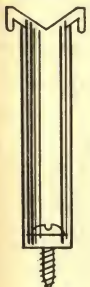
WIRE MAY BE THREADED  
THRU PIERCED EARS  
READY TO WRAP TUBE  
SAVES TIME IN  
OVERHEAD  
WORK



LONG FOR  
INTERIOR  
LIGHTING, ETC.

INTERMEDIATES  
FOR GENERAL  
APPLICATIONS

SHORT STUB  
FOR PORTABLE  
SHOWCASE, ETC.



SHORT  
SCREW

LONG  
SCREW

MEDIUM  
SIZE SCREW

TOGGLE  
SCREW

AVAILABLE  
IN 4 SIZES  
WITH OR WITHOUT  
SCREWS. (CAN BE  
USED WITH ANY LENGTH  
OF #6 SHEET METAL SCREW)

Designed for supporting interior cold cathode lighting.  
Made of polystyrene with a high dielectric strength.  
Can be mounted 1/4-inch apart. Screw will not drop out  
during installation. Carton, 250. Standard package, 1000.

### Without Screws

Length Inches	No.	Per 1000	Approx. Shipping Wt., Lb. per 1000
1/2	3000	\$25.00	1 1/2
1	3001	26.00	3
2	3002	28.50	6
3	3003	29.75	8 1/2

### \*With 1/2-Inch Screw

Length Inches	No.	Per 1000	Approx. Shipping Wt., Lb. per 1000
1/2	3000-3	\$34.80	9 1/2
1	3001-3	35.80	11
2	3002-3	38.30	14
3	3003-3	39.55	17

### \*With 1-Inch Screw

No.	Per 1000	Approx. Shipping Wt., Lb. per 100
3000-7	\$35.15	21 1/2
3001-7	36.15	23
3002-7	38.65	26
3003-7	39.90	28 1/2

\*With No. 6 sheet metal screw inserted.  
For tube supports, use any No. 6 sheet metal screw.  
For cable support, use any No. 7 or No. 8 sheet metal screw.  
Available in clear or ivory. When ordering ivory, suffix I to number.

## Airco Rare Gases



For sign tubes and fluorescent illumination lamps.

Pure and free of active gases or undesirable elements.

Pure rare gases increase the operating efficiency of sign tubes by creating lower resistance, which results in more footage per transformer and fewer transformers per sign. Moreover, pure rare gases insure longer life of the completed tube and lower maintenance costs.

Available in a variety of accurate and uniform rare gas mixtures and color combinations.

Furnished in 1 or 2-liter flasks; lead glass or Pyrex.

Individually packed in cardboard container.

Color	Gas	Per Liter	Pressure Mm.	Glass	Coating
Rose Pink	Neon	\$5.00	10-18	Clear	Blue
Gold	*B-10, B-19, W-05	5.00	10-20	Noviol	Yellow
Yellow	Neon	5.00	10-18	Clear	Green
Green	*B-10, B-19, W-05	5.00	10-20	Clear	Green
Blue	*B-10, B-19, W-05	5.00	10-20	Clear	Blue
White	*B-10, B-19, W-05	5.00	10-20	Clear	White

\*Use mercury. Gas B-10 is the standard all-purpose mixture for use with mercury; B-19 will provide maximum protection against fading at low temperature; W-05 is recommended for greatest brilliance where condensation of mercury is not a factor.

Mixtures of neon, argon, and helium are available at \$5.00 per liter. Prices on krypton and xenon or mixtures of these gases will be furnished upon request.

## Reco Color Changing, Speller, or Speed Type Flashers and Controls

For 115 Volt, 60 Cycle, A.C. Only

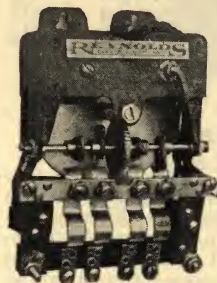
Silver Contact

### Color Changing or Speller Type.

For two or more colors. Speller type flasher. Two to four actions. Speed, 6 to 8 rpm.

**Speed Type.** For traveling borders, revolving wheels, flames. Cam shaft speeds, standard 36 to 46 rpm. with 5-lobe cams, makes flashing speed 180 to 230 flashes per minute.

When ordering state voltage and cycles of current. Also specify flashing action, timing, circuit loads, watts or volt-amperes.



### Color Changing or Speller Type

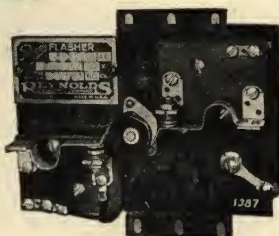
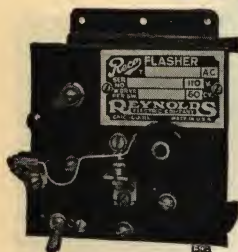
No.	No. of Circuits	Capacity per Circuit	Size Inches	Weight Pounds
FDBO-2	2	660W. or Va.	7x8x3 1/2	8
FDBO-3	3	660W. or Va.	7x8x3 1/2	8
FDBO-4	4	660W. or Va.	7x8x3 1/2	8
LDBO-2	2	1650W. or Va.	7x8x3 1/2	8
LDBO-3	3	1650W. or Va.	7x8x3 1/2	8
LDBO-4	4	1650W. or Va.	7x8x3 1/2	8
FDBS-4	4	660W. or Va.	7x8x3 1/2	8
LDBS-4	4	1650W. or Va.	7x8x3 1/2	8





### Reco Off and On, and Alternate Type Flashers and Controls

For 115 Volt, 60 Cycles, A.C. Only  
Silver Contact



**On and Off Type**

**Alternate Type**

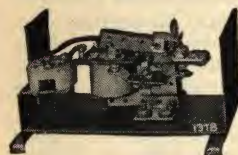
Order a single circuit for on and off type, two circuits for alternate type. Flashing cycles, 12 to 16 rpm.

No.	No. of Circuits	Capacity per Circuit	Size Inches	Weight Pounds
FDSB01	1	660W. or Va.	4 1/2 x 4 1/2 x 5 1/2	6 1/2
LDSB01	1	1650W. or Va.	4 1/2 x 4 1/2 x 5 1/2	6 1/2
FDSB02	2	660W. or Va.	4 1/2 x 7 1/2 x 5 1/2	8
LDSB02	2	1650W. or Va.	4 1/2 x 7 1/2 x 5 1/2	8

When ordering state voltage and cycles of current. Also specify flashing action, timing, circuit loads, watts or volt-amperes.

### Reco Thermatic Type Flashers and Controls

For 115 Volt, 60 Cycle, A.C. Only



A motorless flasher for flashing signs or displays on and off or alternate.

Speed, 15 to 20 fpm.

Loads can be the same or unequal.

Adjustment provided for slightly regulating on and off period.

When ordering specify voltage and cycles of current; also flashing action, timing, circuit loads, watts or volt-amperes.

No.	Watts per Circuit	No. of Circuits	Size Inches	Weight Pounds
BTO-1	660	1 On and Off	6 x 4 1/2 x 3	1 1/4
BTO-2	660	2 Alternate	6 x 4 1/2 x 3	1 1/4
BTO-2A	660	2 On and Off	6 x 4 1/2 x 3	1 1/4
BTO-4	660	4 Two Alternate	6 x 4 1/2 x 3	1 1/4

### Reco Neonimater Flashers and Controls

For 115 Volt, 60 Cycle A.C. Only



Flashes the secondary or high voltage side of neon transformers. Flashing action is obtained by switching or transferring the current from one circuit to another without open circuiting the transformer secondary circuit.

Every outer terminal must be connected.

Maximum, 30 ma., 7500 to 15000 volts.

One Neonimater can be used with only one transformer.

From 2 to 8 flashes can be obtained per rotor revolution.

Flashing speeds from 12 to 1040 fpm.

(viz. 130x8 equals 1040 fpm.) obtained by connecting terminals to different arrangements with different rotor speeds.

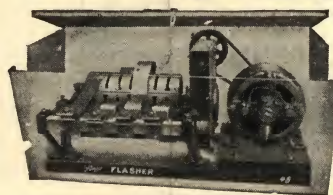
When ordering specify voltage and cycles of current; also flashing action, timing, circuit loads, watts or volt-amperes.

No.	No. of Circuits	Rotor RPM.	Size Inches	Weight Pounds
D-6	6	130-300	5 x 9 1/2 x 7	9
G-6A	6	6-8	5 x 9 1/2 x 7	9
G-6B	6	12-16	5 x 9 1/2 x 7	9
G-6C	6	25-60	5 x 9 1/2 x 7	9
D-8	8	120-300	5 x 9 1/2 x 7	9
G-8A	8	6-8	5 x 9 1/2 x 7	9
G-8B	8	12-16	5 x 9 1/2 x 7	9
G-8C	8	25-60	5 x 9 1/2 x 7	9

### Reco On and Off or Color Changing Type Flashers and Controls

Brush and Drum Design

For 110 Volt, A.C. and D.C.



On and off, alternate sides, two or more colors.

For lighting effects, signals, motor control, etc. Recommended where circuits are to be overlapped. Standard cycle, 6 rpm.; also from 3 to 7 rpm.

When ordering specify kind of current, a.c. or d.c., voltage, cycle, 2 or 3-wire service, timing, watts per circuit; include rough sketch if possible.

No.	No. of Brushes	Capacity per Circuit	Size Inches	Shipping Weight Pounds
GO1	1	400W. or Va.	18x13x11	50
GO2	2	400W. or Va.	18x13x11	55
GO3	3	400W. or Va.	18x13x11	60
GO4	4	400W. or Va.	18x13x11	65
LO1	1	800W. or Va.	18x13x11	50
LO2	2	800W. or Va.	18x13x11	55
LO3	3	800W. or Va.	21x13x11	60
LO4	4	800W. or Va.	21x13x11	68

### Reco Speller Type Flashers and Controls

Brush and Drum Design

For 110 Volt, A.C. and D.C.



Flashes letter after letter, word after word; building up and down; progressive borders, motions, etc.

Standard speller action: one circuit on, after another until all are on,

then all out, all on, all out, and repeat.

When ordering, specify in detail flashing effect desired, kind of current, a.c. or d.c., voltage, cycle, 2 or 3-wire service, timing, watts per circuit; include rough sketch if possible.

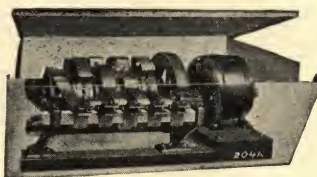
Standard cycle, 6 rpm.; also from 3 to 7 rpm.

No.	No. of Brushes	Capacity per Circuit	Size Inches	Shipping Weight Pounds
GSP2	2	400W. or Va.	18x13x11	55
GSP3	3	400W. or Va.	18x13x11	60
GSP4	4	400W. or Va.	18x13x11	65
LSP2	2	800W. or Va.	18x13x11	55
LSP3	3	800W. or Va.	21x13x11	60
LSP4	4	800W. or Va.	21x13x11	68

### Reco Speed Type Flashers and Controls

Brush and Drum Design

For 110 Volt, A.C. and D.C.



Reproduces wide range of motion effects; revolving wheels, borders, flames, waterfalls, etc.

Speed effects are usually wired 1-2-3-4 requiring four brushes or in multiples of four circuits.

Standard cycle, 60 rpm.; also as slow as 35 rpm. Flashing speeds from 35 to 480 flashes per minute using from 1 to 8 drum contacts per brush.

Standard 240 fpm. (60 rpm.x4 contacts equals 240 fpm.).

When ordering specify kind of current, a.c. or d.c., voltage, cycle, 2 or 3-wire service, timing, watts per circuit; include rough sketch if possible.

No.	No. of Brushes	Capacity of Circuit	Size Inches	Shipping Weight Pounds
CS4	4	200W. or Va.	18x13x11	55
FS4	4	400W. or Va.	21x13x11	68
KHDS4	4	1000W. or Va.	21x13x11	70



## Time-O-Matic Sign Flashers

For controlling any type of display from simple off and on effect to most spectacular action. Pure silver contacts are used which will not pit or stick, and which will insure long life without replacement. The use of silver contacts allows the flasher to be operated in any position; no leveling or final adjustment is needed after installation. Heat or cold, or short circuits in the sign do not effect the flasher.

Drives are either direct or through spur gear reduction, which assures positive, even action. All steel parts are heavily cadmium plated.

### Model 1 and Model 2 Flashers

50-60 Cycles

Small and compact for installation inside the sign.

Slow speed induction disk motor has a simple speed adjustment. The fast speed is two times greater than the slow speed.

With ball bearings.

Motor draws less than 14 watts.

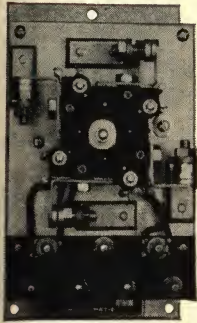
### Model 1 Off and On or Alternate Flashers

Size,  $4\frac{1}{4} \times 7\frac{1}{2} \times 3\frac{3}{8}$  inches.

Speed adjustment, 12 to 24 flashes per minute. Write for information on special speeds.

Wattage per circuit, 2875.

Amperes per circuit, 25.



No. 2-6144

No.	Each	No. of Circuits	Circuit Timing	Wired Volts	Total Wattage
1-6101	\$27.50	1	Off and On	115	2875
1-6102	35.00	2	Off and On	115-230	5750
1-61A2	31.00	2	Alternate	115-230	5750

### Model 2 High Speed Border Chaser Flashers

Size, four circuits,  $4\frac{1}{4} \times 7\frac{3}{4} \times 3\frac{3}{8}$  inches.

Cabinet size,  $6 \times 9\frac{1}{2} \times 5$  inches.

Speed adjustment, 150 to 450 flashes per minute.

Wattage per circuit, 2875. Amperes per circuit, 25.

2-6133	\$34.00	3	1-3	115-230	8625
2-6136	71.00	6	1-3	115-230	17250
2-6144	35.00	4	1-4	115-230	11500
2-6148	72.00	8	1-4	115-230	23000
2-6166	46.50	6	1-6	115-230	17250

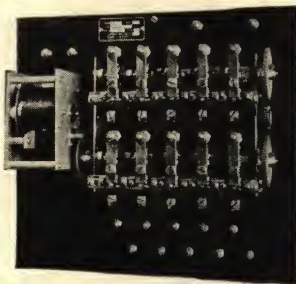
Replacement contacts, \$1.35 per set of two.

### Direct Current Flashers

Standard a.c. flashers can be used on direct current where alternating current is available for the motor. Condensers of the proper size and type must be connected to the contacts for proper operation. Where a.c. is not available for the motor, flashers can be furnished driven by a d.c. motor. Write for prices.

### Model 4 Speller Flashers

50 or 60 Cycles



Meets any requirement in the control of electric signs.

Each contact is controlled by individual split cams.

With ball bearings.

Contacts are rated at 25 amperes, a.c.

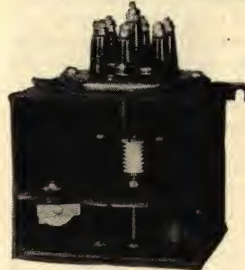
**When ordering:** state number of circuits; load per circuit; flashing cycle or sequence; whether 115 volts, 2-wire or 115-230 volts, 3-wire power supply is available.

Each..... \$47.00

For 25 amperes, add \$8.00 per contact.

### Model 5 High Voltage Neon Flashers

115 Volt, 50-60 Cycles



No. 5-61H6

An adjustable speed, motor driven unit for flashing of neon tube signs on high voltage or secondary side of transformers.

Will handle one 15,000-volt 30 ma. transformer.

Permanent alignment of contacts assured by one-piece porcelain top.

Has pivot type, permanently lubricated bearings, and four, six or eight terminals.

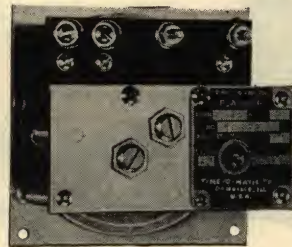
Shipping weight, 5 pounds.

No.	Each	Ter- minals	Circuits	Flashes Per Min.	Size Inches
5-61H4	\$16.00	4	2 or 4	35-300	$5\frac{1}{2} \times 7\frac{3}{8} \times 4\frac{3}{8}$
5-61H6	17.25	6	2, 3 or 6	35-300	$5\frac{1}{2} \times 7\frac{3}{8} \times 4\frac{3}{8}$
5-61B4	20.50	4	2 or 4	5-35	$6\frac{3}{4} \times 4\frac{1}{8} \times 7\frac{3}{8}$
5-61B6	21.75	6	2, 3 or 6	5-35	$6\frac{3}{4} \times 4\frac{1}{8} \times 7\frac{3}{8}$
5-61H8	18.50	..	8	35-300	$5\frac{1}{2} \times 7\frac{3}{8} \times 4\frac{3}{8}$
5-61B8	23.00	..	8	5-35	$6\frac{3}{4} \times 4\frac{1}{8} \times 7\frac{3}{8}$
5-61H10	30.00	..	10	35-300	.....
5-61B10	35.00	..	10	5-35	.....

For extra circuits, add \$.45 to prices per circuit.

### Model 3 Off, On, and Alternate Flashers

115, 115-230 Volts, 15 Amperes, 50-60 Cycles, A.C.



No. 3-6101,  
Off, On, and Alternate

Size: 1 and 2 circuits,  $5\frac{5}{8} \times 4\frac{3}{8} \times 2\frac{1}{4}$  inches except 3-6102J and 3-61A2J; 3 and 4 circuits,  $5 \times 6\frac{1}{2} \times 4\frac{3}{4}$  inches. Pivot type, lubricated bearings.

Speed of flash, 15 to 30 flashes per minute.

Standard cams are set for 50-50 operation.

Watts per circuit, 1725.

The 115-volt has 115-volt motor and is suitable for 115-volt 2-wire line; 115-230-volt has 115-volt motor but is suitable for 115-230-volt 3-wire line.

### Model 3 High Speed Border Chaser Flashers

115-230 Volts, 10 Amperes, 50-60 Cycles, A.C.

Size:  $5 \times 6\frac{1}{2} \times 4\frac{3}{4}$  inches.

Speed of flash, 250 per minute.

Watts per circuit, 1150. Circuit timing, 1-3 and 1-4.

### Model 3 Type T Speller Flashers

115, 115-230 Volts, 15 Amperes, 50-60 Cycles, A.C.

Handles from 1 to 4 contacts at speeds adjustable from 2 to 10 seconds per cycle with faster speeds by cutting two or more complete operations on the cams.

Size: 1 and 2 circuits,  $5\frac{5}{8} \times 4\frac{3}{8} \times 2\frac{1}{4}$  inches except 3-61T2J; 3 and 4 circuits,  $5 \times 6\frac{1}{2} \times 4\frac{3}{4}$  inches.

Watts per circuit, 1725.

### Model 3 Type S Speller Flashers

115, 115-230 Volts, 15 Amperes, 50-60 Cycles, A.C.

For a large number of contacts or for slow speeds.

Speed: three ranges of speed adjustment are available; 2-10 seconds; 4-20 seconds; 8-40 seconds. State which is desired when ordering. These ranges are approximate and may vary, particularly on the larger flashers.

Available in any number of circuits.

Watts per circuit, 1725.

All Prices Quoted Are Without Cabinets



### Lennan Rub-R-Lite Flashlights Focusing Type



No. 200

A completely rubber-cushioned flashlight that is water-proof and shockproof. Insulated against electrical charges. Batteries and bulb can be replaced in a few seconds.

Has two-button positive action switch; focusing device to adjust the spot for long or short range; bright aluminum reflector; all-steel inner case; and a plastic lens.

**No. 200**, two-cell, focusing, complete with No. 14 bulb but without batteries; packed 48 per shipping case; weight, 33 pounds..... each **\$1.85**

**No. 250**, three-cell, focusing, complete with No. 13 bulb but without batteries; packed 36 per shipping case; weight, 29 pounds..... each **\$2.20**

#### Spare Parts

No. 9-18A, Plastic Lens.....	each	\$ .13
No. 9-17E, Polished Reflector.....	each	.15
No. 10-200, Inner Shell Assembly with Bulb, Two-Cell.....	each	1.10
No. 10-250, Inner Shell Assembly with Bulb, Three-Cell.....	each	1.32
No. 10-12, Outer Rubber Case, Two-Cell.....	each	.65
No. 10-13, Outer Rubber Case, Three-Cell.....	each	1.10

### No. 17S Justrite Safety Service Flashlights



Approved by Underwriters' Laboratories, U.S. Bureau of Mines, Bureau of Marine Inspection.

Uses 3 regular flashlight cells.

Case is made of plastic reinforced with metal inserts to prevent warping or shrinkage.

Stands on base.

Furnished with a belt clip and a 2½-inch polished reflector.

Height, 5¾ inches.

Weight, ½ pound.

No. 17S, Clear Lens, less Batteries.....	each	\$3.85
No. 1717SH, Honeycomb Lens, less Batteries.....	each	4.00

### No. 2251 Eveready Automatic Spotlights



Two-cell automatic spotlight. Seambrass tube, chromium finish with rolled-on black decoration. Uses

two Eveready No. 950 batteries and pre-focused lamp No. PR-2. Size 6¾x1¼ inches.

No. 2251, Less Batteries.....	each	\$1.35
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### No. 210 Eveready Penlights



A seamless chromium brass tube pocket flashlight, used by mechanics, doctors and dentists. Size: 5½x5⅞ inches.

Uses two No. 915 Eveready batteries and No. 222 Eveready Lamp.

No. 210, Less Batteries.....	each	\$6.4
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### Eveready Flashlight Batteries

#### Unit Cells

Standard package 12, for No. 950, 24 per package.

No.	Each	Description	Size In.	Cell Size	Weight Lb. Oz.
915	\$ .075	Penlight Cell...	1 1/32x 3/16	AA	7 1/2
935	.10	Baby Tubular...	2 x 1 1/32	C	1 4
950	.10	Regular.....	2 7/16x 1 1/16	D	9 12



No. 950

### No. 102 Eveready Flashlight Lens Assortments



Contains 32 No. 53394 lenses and 4 No. 53390 searchlight lenses.

Packed 1 assortment in a unit package.

No. 102.....	per asst.	\$1.37
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### Flashlight Lamps

Packed 10 in a carton.

	No.	Each	No. Cells and Size	Bulb	Volts	Ampere Rating
	13	\$ .09	3D	G-3½	3.8	.30
	14	.09	2D	G-3½	2.5	.30
	Nos. 233, 13, 14	222 .09	2A-AA	TL-3	2.2	.25
	233	.09	2C	G-3½	2.3	.27
	*PR-2	.13	2D	B-3½	2.4	.50
	*RP-3	.13	3D	B-3½	3.6	.50
	*PR-6	.13	2D	B-3½	2.5	.30
No. 222	*PR-7	.13	3D	B-3½	3.8	.30

\*Miniature flanged base.

### No. 409 Eveready Lantern Batteries

6 Volts



Cell size, F.

Number of cells, 4.

Dimensions, 2½x2½x3¾ inches.

Packed 1 in a unit package.

Weight per unit package, 1½ pounds.

No. 409.....	each	\$7.70
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### Eveready Single Shot Blasting Batteries



Equipped with positive and negative recessed terminals. Bears approval label of U.S. Bureau of Mines.

**No. 702**, 3-cell battery composed of size B cells, 4½ volts.

**No. 704**, 2-cell battery composed of type F cells, 3 volts.

No.	Each	Size	702	704
	\$ .75			.85
		inches	2 1/16x 2 7/16x 2 1/16	2 5/8x 1 11/16x 4 1/4



## No. 211 Big Beam Portable Electric Hand Lamps



Projects powerful ray over 1500 feet.

**Power:** 2 standard dry cell lantern batteries.

**Finish:** black enameled head; brass reflector, silver-plated; baked red enamel steel container.

Packed individually, 12 to a case.

Net weight each 3¼ pounds.

No. 211, without Batteries.....each \$12.50

### Accessories

No. 200, Battery, Lantern Type, 6 Volts.....	each	\$ 7.00
No. 225, Hold-Down Bracket.....	each	2.00
No. 229, Clear Lens.....	each	.60
No. 215, Carrying Strap.....	each	1.00
No. 220, Wire Guard.....	each	.75
No. 250, Snap-On Lens, Red, Green, or Flood.....	each	1.50
No. 260, Main Bulb.....	each	.45
No. 255, Small or Auxiliary Bulb.....	each	.15

## No. 411 Big Beam Portable Electric Hand Lamps



Projects powerful ray over 2500 feet. Can be floodlighted, if desired.

**Power:** No. 26AH heavy duty battery.  
**Finish:** black enameled head; brass reflector, red enameled container.

Rubber reservoir prevents acid spillage; direct lamp-to-battery contacts; acid protected case.

No. 411, with Battery.....each \$39.25

### Accessories

No. 611, Rechargeable Storage Battery.....	each	\$15.00
No. 510, Hold-Down Swivel Fitting.....	each	8.75
No. 515, Leather Shoulder Strap.....	each	2.75
No. 520, Wire Guard.....	each	1.25
No. 529, Clear Lens.....	each	1.40
No. 531, Red, Blue, or Green Lens.....	each	1.80
No. 530, Floodlight Lens.....	each	1.70
No. 550, Snap-On Lens, Complete Unit.....	each	3.25
No. 500, Hold-Down Bracket.....	each	4.25
No. 525, 15-Foot Extension, Complete with 6-Volt, 25-Watt Bulb and Adapter.....	each	3.00
No. 540, Resistance Switch, 6 Volts D.C.....	each	4.00
No. 1280, Charger, 115 Volts, 60 Cycles A.C.....	each	20.00
No. 900, Main Bulb, 6 Volts.....	each	.65
No. 955, Auxiliary Bulb, 6 Volts.....	each	.13

## No. 1000 Big Beam Portable Electric Hand Lamps



Projects powerful ray over 2500 feet. Can be floodlighted, if desired.

**Power:** No. 4F6H Burgess dry cell battery.

**Finish:** black enameled head; brass reflector, silver plated; and baked red enamel steel container.

Has direct lamp to battery contacts; no wires.

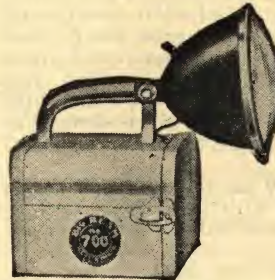
Net weight 3½ pounds.

No. 1000, without Battery.....each \$23.00

### Accessories

No. 466, Battery, Dry Cell, 9 Volts.....	each	\$3.23
No. 510, Hold-Down Swivel Fitting.....	each	8.75
No. 515, Leather Shoulder Strap.....	each	2.75
No. 520, Wire Guard.....	each	1.25
No. 529, Clear Lens.....	each	1.40
No. 531, Red, Blue, or Green Lens.....	each	1.80
No. 530, Floodlight Lens.....	each	1.70
No. 550, Snap-On Lens, Complete Unit.....	each	3.25
No. 1500, Hold-Down Bracket.....	each	4.25
No. 900, Main Bulb, 6 Volts.....	each	.65
No. 955, Auxiliary Bulb.....	each	.13

## No. 700 Big Beam Portable Electric Hand Lamps



No. 700

Projects powerful ray over 2000 feet.

Can be floodlighted.

**Power:** 4 No. 6 dry cells.

**Finish:** black japanned head and rim with red baked enamel container.

Has 6-inch silvered reflector and 6-inch heavy convex lens. Prefocused bulb.

Net weight 4 pounds.

**No. 700A** is the same as No. 700 except that it is equipped with 2 bulbs: dim and bright.

**No. E700H** is the same as No. 700 except that it is equipped with 3 bulbs: main bulb, small auxiliary bulb, and bulb on extension cord.

No. 700, without Batteries.....each \$15.00

No. 700A, without Batteries, with Aux. Bulb.....each 17.00

No. 700EH, with Ext., without Batteries.....each 22.50

### Accessories

No. 6, Batteries, 4 per Set.....	per set	\$1.96
No. 720, Wire Guard.....	each	1.25
No. 725, Hold-Down Bracket.....	each	3.50
No. 726, Hold-Down Bracket, Lock Type.....	each	4.75
No. 750, Snap-On Lens, Complete Unit.....	each	3.25
No. 760, Main Bulb, 4½ Volts.....	each	.65
No. 755, Auxiliary Bulb, for No. 700A.....	each	.13
No. 729, Clear Lens.....	each	1.00
No. 731, Red, Blue, or Green Lens.....	each	1.55
No. 730, Floodlight Lens.....	each	1.40

## Justrite All-Purpose Safety Hand Lanterns



No. 44S

**No. 44S** is approved by Underwriters' Laboratories, Bureau of Mines and Bureau of Marine Inspection. Uses standard 6-volt battery. Has two bulbs to give either spot or diffused light, and a movable handle. Tilts on base to any angle. Furnished with 3½-inch chrome reflector and glass globe, and globe (lens) guard.

**No. 42S** has the same features as No. 44S except does not have inner guard for globe (lens).

Battery is not included in prices.

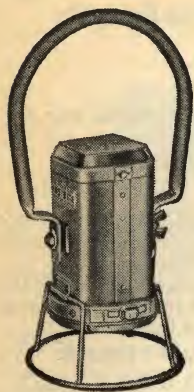
No. 44S, Weight, 3 Pounds.....each \$6.60

No. 42S, Weight, 2¾ Pounds.....each 6.00





### Justrite Railroad Trainman's Lanterns



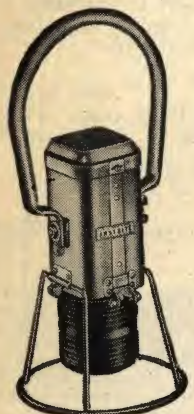
**No. 40** uses standard 6-volt battery and bulbs. One bulb is used for spot beam, other bulb extended for ordinary signals. Has reinforced aluminum tubing handle, welded steel guard, and space for two spare bulbs. Furnished with 3½-inch chrome reflector. Weight, 2 pounds.

**No. 40W** has same features as No. 40 except with glass globe over reflector and no bulb extension feature.

**No. 40, Without Battery, less Bulbs.....each \$4.00**

**No. 40W, Without Battery, less Bulbs.....each 4.60**

### No. 2171 Justrite Flagman's Red Lanterns



A warning beam, visible in all directions.

Has welded wide-base guard and a movable aluminum handle.

Uses standard lantern battery.

Furnished with 3-inch fresnel globe for two bulbs. Emergency bulb mounted in lantern. Space for two spare bulbs.

Weight, 3½ pounds.

**No. 2171-JR, Without Battery, less Bulbs.....each \$6.00**

### Justrite Flexible-Light Lanterns



Used as headlight, or with light housing on wrist, leg, shoulder strap, or belt. Leaves both hands free.

Uses standard lantern battery.

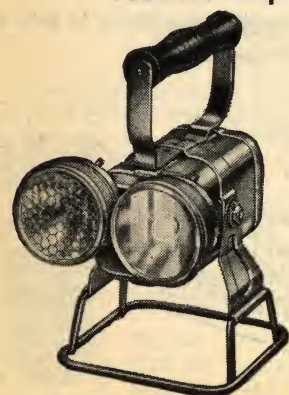
Battery case is carried on shoulder strap and waist belt. Rubber connecting cord.

Weight, 2 pounds.

**No. 1955, With Spot Lens, less Battery.....each \$8.00**

**No. 19H55, With Honeycomb Lens, less Battery.....each 8.20**

### Justrite Inspector's Lanterns



No. 2121

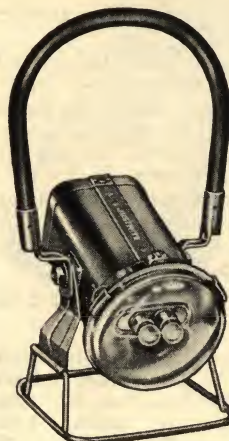
**No. 2121** gives wide spread-beam from honeycomb lens, and separate light housing gives spot beam. Uses standard bulb and battery. Tilts on base to any angle. Furnished with two 2½-inch reflectors, interchangeable lens, and separate individual switches. Weight, 2¼ pounds.

**No. 2111** has same features as No. 2121 except only one light housing using honeycomb spreadbeam lens. Weight, 2 pounds.

**No. 2121, less Battery.....each \$7.00**

**No. 2111, less Battery.....each 6.00**

### No. 42W Justrite Twin-Bulb Hand Lantern



Has two bulbs to give either powerful spot beam and direct light to all sides. Alternate bulb gives brighter beam.

Uses standard lantern battery.

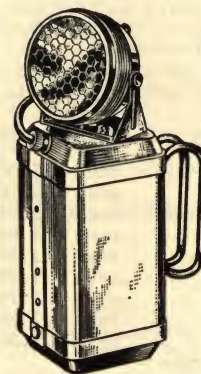
Furnished with 3½-inch chrome reflector; movable, aluminum tubing handle; and glass globe to cover reflector and bulb.

Tilts to any angle on guard-base.

Weight, 2½ pounds.

**No. 42W, less Battery.....each \$5.50**

### Justrite Utility Lanterns



**No. 2101.** Light housing turns any direction horizontally or vertically.

Has spread-beam honeycomb lens, 2½-inch reflector, and folding handles. Uses standard lantern battery.

Also furnished with plain lens for "spot" light.

Height, 7¾ inches.

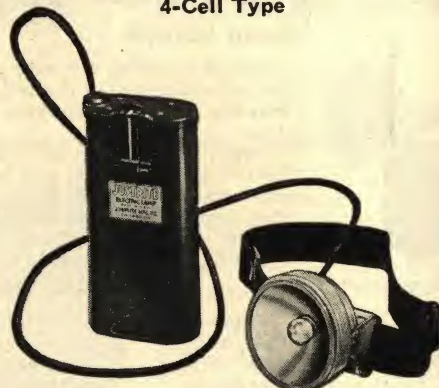
Weight, 1¼ pounds.

**No. 2107** has same features as No. 2101 except bracket for belt instead of handle. Furnished with adjustable belt.

**No. 2101, less Battery....each \$5.00**

**No. 2107, less Battery....each 6.00**

### No. 1904 Justrite Headlight-Lanterns 4-Cell Type



Has powerful spot beam. Uses 4 flashlight cells. Headpiece straps around cap. Battery case clips on belt. Furnished with 2½-inch polished reflector, 5-volt bulb and spare bulb.

Weight, 1 pound.

**No. 1904, less Battery.....each \$5.00**



## Edison Primary Batteries

Edison Primary Batteries are applicable anywhere; require no battery charging facilities; deliver rated ampere-hour capacities continuously or intermittently at satisfactory voltage; do not lose capacity on open circuit even over long periods; have very low and constant internal resistance; give accurate visual indications of approaching and complete exhaustion; do not freeze; require no attention or maintenance excepting occasional visual inspections between renewals; are easily installed and renewed without expert help.

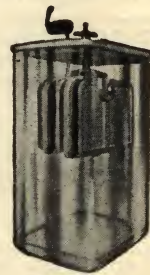
For either direct operation or as standby batteries where continuous d.c. power supply is extremely important. Standard types adequately and economically meet the low voltage power requirements for: Police, fire and burglar alarms; annunciator systems; elevator signals; stationary engine ignition; industrial, school and scientific laboratory services; marine beacons on fixed structures; program and time clock systems; mine signaling and communication; commercial and railroad telephone services (talking and ringing circuits, operators' transmitters on magneto switchboards, interrupters); telegraph main line and local sounder circuits.

**A.C. or D.C. Primary Battery System.** For low voltage lighting, control and other d.c. circuits normally fed from commercial power sources and requiring standby batteries to insure uninterrupted operation in emergencies. If normal supply fails, a relay instantly transfers the entire load to an independent and extremely reliable primary battery reserve until normal service is restored. Emergency operation can be maintained indefinitely from the standby battery. Visual indications show reserve capacity available. No current or apparatus needed for battery charging. Visual inspection is only battery maintenance required. This system is the ultimate in dependability, simplicity and economy.

**Description.** Edison Primary Batteries are zinc, copper-oxide, alkaline electrolyte type. A complete cell consists of: Factory-assembled element of positive and negative plates, can of caustic soda for mixing electrolyte, heat-resisting glass or enameled steel jar, porcelain cover, bottle of battery oil, terminal nuts and washers.

Renewing active materials restores an exhausted cell to full capacity. This simple operation requires only a new element, can of soda and bottle of oil which constitute a renewal. Other parts are permanent. Panels in zinc plates accurately indicate stage of exhaustion. All cells have liberal safety factor. Operating voltage averages 0.6 to 0.65 depending upon discharge rate. Use chart to select proper cells for load requirements.

### Medium Duty Cells with 5-Plate Elements



No. M-502



No. M-504

No.	Complete Each	Renewals Each	Cap. Amp-hr.	Max. Cont. Disch. Amp.	JAR Kind Shape	Overall Dimension Inches
M-501	\$5.35	\$2.80	500	2.25	Glass Round	6 3/4" Diam. x 12 3/4"
M-502	5.60	2.80	500	2.25	Glass Rect.	5 3/4" x 6 3/4" x 12 1/4"
M-504	5.20	2.80	500	2.25	Glass Barrel	7" Diam. x 11 5/8"
M-1002	9.85	5.05	1000	3.50	Glass Rect.	6 1/2" x 8 1/4" x 14 3/4"

### Light Duty Cells with 3-Plate Elements



No. S-202



No. S-502



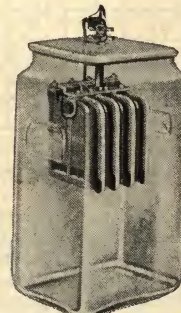
No. S-504

No.	Complete Each	Renewals Each	Cap. Amp-hr.	Max. Cont. Disch. Amp.	JAR Kind Shape	Overall Dimensions Inches
S-202	\$4.25	\$1.95	200	1.00	Glass Rect.	3 3/8" x 5 7/8" x 11"
S-208	4.25	1.95	200	1.00	Glass Round	5 5/8" Diam. x 9 3/4"
S-252	4.50	2.10	250	1.00	Glass Rect.	3 3/8" x 5 7/8" x 12"
S-305	4.70	2.30	300	1.00	Glass Round	6 3/4" Diam. x 10 1/4"
S-501	5.25	2.65	500	1.75	Glass Round	6 3/4" Diam. x 12 3/4"
S-502	5.50	2.65	500	1.75	Glass Rect.	5 3/4" x 6 3/4" x 12 1/4"
S-504	5.10	2.65	500	1.75	Glass Barrel	7" Diam. x 11 5/8"

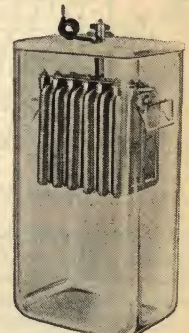
### Heavy Duty Cells with 9 and 11-Plate Elements



No. HA-502



No. HA-902



No. HA-1302

No.	Complete Each	Renewals Each	Cap. Amp-hr.	Max. Cont. Disch. Amp.	JAR Kind Shape	Overall Dimensions Inches
HA-502	\$7.50	\$4.50	500	6.50	Glass Rect.	5 3/4" x 6 3/4" x 12 1/4"
HA-902	9.90	5.00	500	12.00	Glass Rect.	6 1/2" x 8 1/4" x 14 3/4"
HA-1302	16.00	9.00	1000	20.00	Glass Rect.	6 3/4" x 8 1/2" x 17 3/4"
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....



## Parts for Edison Primary Batteries

## Renewal Parts

Description	No. S-202	No. S-208	No. S-252	No. S-305	No. S-501	No. S-502	No. S-504	No. M-501	No. M-502	No. M-504	No. M-1002	No. HA-502	No. HA-902	No. HA-1302
Assembled Element, each	\$1.75	\$1.75	\$1.95	\$2.20	\$2.40	\$2.40	\$2.40	\$2.55	\$2.55	\$2.55	\$4.55	\$4.25	\$4.75	\$8.50
Caustic Soda,.....per can	.24	.24	.27	.30	.42	.42	.42	.42	.42	.42	.90	.42	.90	1.00
Special Battery Oil .....per bottle	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10

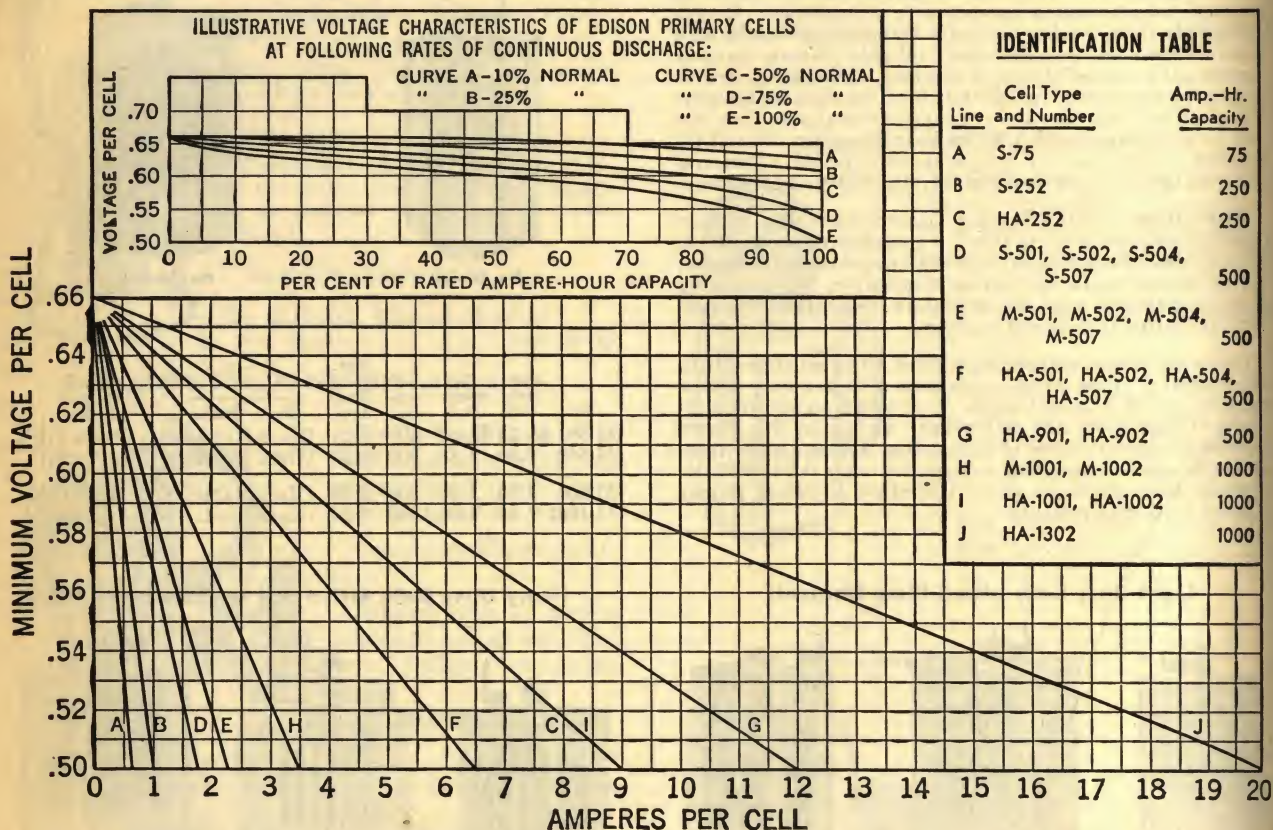
## Permanent Parts

HR Glass Jar, Round.....each	\$2.00			\$2.00	\$2.25			\$2.25						
HR Glass Jar, Rect.....each	\$2.00		\$2.10			\$2.50			\$2.50		\$4.70	\$2.50	\$4.70	\$6.25
HR Glass Jar, Barrel.....each							\$2.15			\$2.15				
Porcelain Cover.....each	.55	.55	.55	.55	.55	.55	.55	.55	.55	.55	.55	.55	.55	1.00
Terminal Nuts & Wash- ers (For 1 Cell) .per set	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25

## Miscellaneous Parts

Large Wing Nuts.....each	\$0.10	Double Connectors.....each	\$0.50
Brass Washers.....each	.05	Hexagon Jamb Nuts.....each	.05

## How to Select Proper Number and Type of Cells for Direct Operation or Standby



**How to Select Cells.** With above chart, proper type and number of Edison Primary Cells can be readily determined for a wide range of low voltage d.c. power requirements where the following information is available:

1. Maximum current in amperes required by apparatus cells are to operate. Always base selection on highest current rate, continuous or intermittent.
2. Minimum ampere-hour battery capacity desired.
3. Minimum voltage required at battery. Allow for voltage drop between battery and apparatus due to resistance of line, contacts, etc.

The letters on the sloping lines in the chart refer to the Identification Table which shows the corresponding types, numbers, and capacities of the cells.

Along bottom of chart, locate point which corresponds to maximum current required. From this point, follow a vertical line up to its intersection with first sloping line on which is found a cell having an ampere-hour capacity near-

est to that desired. Cell or cells designated on this line will most economically deliver maximum current needed.

From point where vertical and sloping lines intersect, follow a horizontal line to left hand side of the chart to find voltage of cell. This point on voltage scale shows minimum voltage at which cell will deliver its rated ampere-hour capacity at maximum current it will be called upon to furnish to connected apparatus.

To determine proper number of cells of type selected which should be used in series, divide the minimum cell voltage into the minimum battery voltage required to satisfactorily operate the apparatus.

For applications where cells will be subject to low temperatures for extended periods, detailed service conditions and operating requirements should be submitted for recommendations. This same procedure should also be followed when cells are desired for intermittent service where the maximum discharge will be of only a few seconds duration.



## Eveready Air Cell Radio A Batteries



A-2300



A-2600



A-1300

A battery originally developed for owners of radios not on a power line. Has low ampere-hour cost, long service life, no recharging, constant voltage, and no shelf depreciation.

The Nos. A-2300 and A-2600 are for receivers drawing no more than 0.66 (660 milliamperes). No. A-1300 for receivers drawing no more than 0.2 (200 milliamperes).

Uses a liquid electrolyte but is shipped dry. In the dry state it undergoes no shelf depreciation.

Packed 1 in a unit package.

No.	A-1300	A-2300	*A-2600
Each.....	\$3.50	6.00	8.00
Voltage.....	1 1/4	2 1/2	2 1/2
For Receivers.....volts	1.4	2	2
Capacity.....amp.-hr.	300	300	600
Length.....inches	5 5/16	8 1/4	9 29/32
Width.....inches	4 11/32	5 5/16	6 19/32
Height.....inches	8 5/8	8 5/8	11 1/16
Weight per Unit Pkg.....pounds	7	12 1/2	24

\*For heavy drain air cell receivers, order with prefix "S."

## Eveready Air Cell Batteries



No. T-1600



No. T-2600

For railroad, telephone and industrial use. The low ampere hour cost, long life and sustained voltage make these batteries desirable for telephone and signal work.

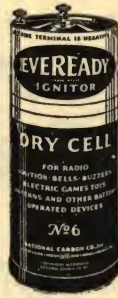
Available in two conservatively rated capacities—300 ampere hours and 600 ampere-hours.

Made in single cell units, also in batteries consisting of two cells in series. The average voltage per cell is 1.25 volts, falling to 1.0 volts per cell at the end of their capacity. Uses a liquid electrolyte.

Shipped dry. In the dry state it undergoes no shelf depreciation. Packed one in a standard package.

No.	T-1300	T-2300	T-1600	T-2600
Each.....	\$3.50	6.00	4.75	8.00
Volts.....	1 1/4	2 1/2	1 1/4	2 1/2
Capacity.....amp.-hr.	300	300	600	600
Length.....inches	5 5/16	8 1/4	5 1/4	9 29/32
Width.....inches	4 11/32	5 5/16	6 19/32	6 19/32
Height.....inches	8 5/8	8 5/8	11 1/16	11 1/16
Weight per Standard Package.....pounds	7	12 1/2	13	24

## No. 6 Eveready Ignitor Dry Cells



For heavy service in all dry cell applications. Recommended for ignition, radio, bells, buzzers, electric games, toys, lanterns and other battery operated devices. Has patented metal top construction. Protects against leakage and breakage.

Carefully packed from fresh stock and guaranteed to reach destination in perfect condition. Round Jackets, equipped with screw terminals unless Fahnestock spring terminals are specified.

Voltage 1 1/2.

Width 2 5/8 inches.

Height 6 5/8 inches.

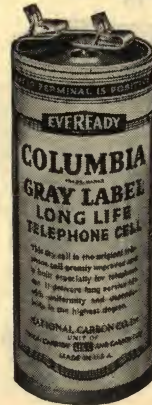
Packed 12 in a standard package.

Weight per standard package, 27 pounds.

Prices for west coast somewhat higher.

No. 6.....each \$ .65

## No. 6 Eveready Columbia Gray Label Telephone Dry Cells



This battery is especially design for telephone work and light-drain service.

Round Jackets only.

Fahnestock spring terminals are furnished unless screw connections are specified.

Voltage, 1 1/2.

Diameter, 2 5/8 inches.

Height, 6 5/8 inches.

Quantity in std. pkg., 25. Approx. wt. of standard package, 58 pounds.

Prices for west coast somewhat higher.

No. 6.....each \$ .60

## No. 6 Eveready Special Railroad and Industrial Cells



Combines high amperage, heavy service life and light service life. Designed for railroad and industrial use where a wide range of service conditions from extremely heavy to extremely light are encountered.

Round jackets only. Screw connections unless Fahnestock Spring Terminals are specified.

Voltage, 1 1/2; overall diameter, 2 5/8 inches; overall height, 6 5/8 inches.

Packed 25 in a standard package.

Approximate weight of standard package, 62 pounds.

Prices for west coast somewhat higher.

Each.....\$ .70

## Eveready Hot Shot Batteries



Cells are connected by soldered copper strips and encased in a single metal container. The advantages of this new type covering are the ability to withstand rough usage, waterproof, thoroughly insulated to prevent internal short circuits and a woven fabric handle for convenience in carrying.

Prices for west coast somewhat higher.

Cat. No.	Each	Voltage	DIMENSIONS, INCHES			Std. Pkg. Quantity in Box	Approx. Wt. Lb.
			Length	Width	Ht.		
1461	\$3.15	6	10 3/8	2 3/4	7 1/4	6	60
1462	3.15	6	5 5/16	5 5/16	7 1/4	4	41
1562	3.80	7 1/2	7 7/8	5	7 1/4	4	52
1662	4.15	9	7 13/16	5 1/4	7 1/4	4	62



**No. 746 Eveready A Batteries**

For 1.4 volt portable receivers.

For use with Eveready Mini-Max B battery.

A compact power supply unit for portable receivers.

Contains 3 Radio A cells.

Has 2-prong,  $4\frac{1}{2}$  volt socket.

Length,  $3\frac{15}{16}$  inches; width,  $1\frac{15}{16}$  inches; height,  $4\frac{1}{2}$  inches.

Packed 6 in a standard package.

Weight per standard package,  $7\frac{1}{2}$  pounds.

No. 746.....each \$ .75

**Eveready Portable Radio A Batteries**

**1½ Volts**

For 1.4 volt radio receivers.

Gives more than double the service of the conventional battery of equal size.

Plug-in socket.



No. 741

No. ....  
Each.....  
Size.....  
No. Radio A Cells.....  
Std. Package.....  
Wt. per Std. Package.....lb.

**741**  
**\$1.60**

$3\frac{7}{8} \times 2\frac{1}{16} \times 5\frac{3}{8}$

8

1

$2\frac{3}{4}$



No. 742

**742**  
**.90**

$2\frac{19}{32} \times 2\frac{19}{32} \times 4$

4

6

$8\frac{1}{4}$

**743**  
**1.25**

$3\frac{13}{32} \times 2\frac{21}{32} \times 4\frac{1}{32}$

6

3

$6\frac{1}{2}$

**No. 740 Eveready Dry A Batteries for 1.4-Volt Receivers**

**1½ Volts**

Terminals; plug in, -, +1.5.

Dimensions,  $4\frac{19}{32} \times 3\frac{7}{8} \times 7\frac{25}{32}$  inches.

Packed 1 in a unit package.

Weight per unit package,  $6\frac{1}{4}$  pounds.



No. 740.....each \$3.30

**No. 950 Eveready A Batteries for Portable Receivers**

**1½ Volts**

An ideal battery for personal radios. Terminals; contact. Dimensions,  $1\frac{1}{4}$ -inch diameter by  $2\frac{7}{16}$  inches.

Packed 48 in a unit package. Weight per unit package,  $9\frac{3}{4}$  pounds.

No. 950.....each \$ .10

**No. X-771 Eveready C Batteries**

**4½ Volts**

Terminals; plug in, +, -3, -4½.

Dimensions,  $4\frac{1}{32} \times 1\frac{13}{32} \times 3\frac{1}{32}$  inches.

Packed 5 in a unit package.

Weight per unit package, 4 pounds.

No. X-771.....each \$ .75

**No. 718 Eveready A Batteries for Portable Receivers**

**6 Volts**

Terminals—plug in, -, +6.

Dimensions,  $3\frac{15}{16} \times 2\frac{3}{4} \times 5\frac{1}{2}$  inches.

Packed 1 in a unit package.

Weight per unit package,  $2\frac{3}{4}$  pounds.



No. 718.....each \$1.70

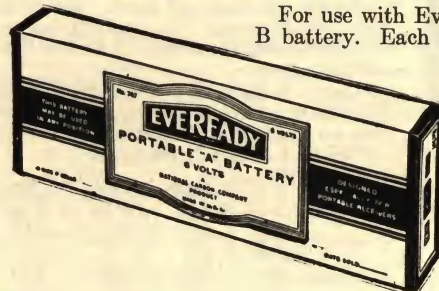
**Eveready Portable Radio A Batteries**

For use with Eveready Minimax B battery. Each battery contains 8 Radio A cells.

Two-prong socket.

The No. 747 is for a.c. or d.c. portable receivers.

Packed 2 in a unit package.



No. ....  
Each.....  
Volts.....  
Size.....  
Weight per Unit Pkg. pounds

**745**  
**\$1.70**

$1\frac{1}{2}$

$3\frac{7}{8} \times 1\frac{1}{16} \times 10\frac{25}{32}$

$5\frac{3}{4}$

**747**  
**1.80**

6

$3\frac{7}{8} \times 1\frac{1}{16} \times 10\frac{25}{32}$

$5\frac{3}{4}$

**No. 744 Eveready A Batteries for Portable Receivers**

**6 Volts**

Terminals, -, +6.

Dimensions,  $2\frac{21}{32} \times 2\frac{21}{32} \times 3\frac{1}{32}$  inches.

Packed 6 in a unit package.

Weight per unit package,  $8\frac{1}{8}$  pounds.



No. 744.....each \$ .95

**No. 758 Eveready Mini-Max A-B Packs for 1.4-Volt Farm Type Receivers**

**1½ Volts A; 90 Volts B**



Terminals; plug in, -, +1.5; plug in, -, +90.

Dimensions,  $10\frac{1}{16} \times 4\frac{3}{16} \times 6\frac{1}{16}$  inches.

Packed 1 in a unit package.

Weight per unit package, 15 pounds.

Prices for west coast somewhat higher.

No. 758.....each \$7.50



**No. 754 Eveready Mini-Max A-B Packs for  
1.4-Volt Portable Receivers  
7½ and 9 Volts A; 90 Volts B**



Terminals; plug in; -A, +7½A, +9A, -B, +90B.  
Dimensions, 10½x3¼x4 inches.  
Packed 1 in a unit package.  
Weight per unit package, 6½ pounds.

No. 754.....each \$5.45

**No. 487 Eveready Mini-Max B Batteries  
for Farm Type Receivers**

**45 Volts**

Terminals; socket; +22½, +45.

Dimensions, 5½x2½x7¼ inches.

Packed 10 in a unit package.

Weight per unit package, 44 pounds.

No. 487.....each \$2.50

**No. 482 Eveready Mini-Max Portable  
Radio B Batteries**

**45 Volts**

For 1.4 volt portable receivers.

Mini-Max gives more than double the listening hours of a conventional battery of equal size or about the same service life as a conventional battery of twice the size.

Equipped with duplex socket.

Size: length 3½ inches; width 1¾ inches; height 5½ inches.

Packed 6 in a standard package.  
Wt. per standard package, 11½ lb.

No. 482.....each \$2.15

**No. 467 Eveready Mini-Max Radio B Batteries**

**67½ Volts**

For miniature radios.

A new and utterly different construction makes this battery last twice as long as a conventional battery of equal size.

Height, 3¼ inches. Length, 2¼ inches. Thickness, 1¾ inches. Weight, 12 ounces.

Packed 6 to a unit package.

Weight per unit package, 4½ pounds.

No. 467.....each \$2.45

**No. 738 Eveready Portable Radio B  
Batteries**

**45 Volts**

For 1.4 volt radio receivers.

Gives more than double the service of the conventional battery of equal size.

Standard socket.

Size, 3x2½x4½ inches.

Packed 2 in a unit package.

Weight per unit package, 2¾ pounds.



No. 738.....each \$3.15

**No. 768 Eveready C Batteries**

**Horizontal Type, 22½ Volts**

Suitable for portable sets where light weight and small size are essential, and for self-contained sets having battery compartments too small to permit the installation of a larger B battery.

Plug-In type terminals. It has plus, minus 3, minus 4½, minus 16½, minus 22½ terminal markings.



Length, 4½ inches; width, 2¼ inches; and height, 2¾ inches.

Packed 1 in a standard package.

Weight per standard package 1 pound, 8 ounces.

No. 768.....each \$1.70

**No. KS-8089 Dry Battery Gauges**



A well made instrument for quickly testing battery life. It is compact, easy to carry and use and is reliable.

Designed by Bell Telephone Laboratories for use in testing No. 6 dry batteries used in telephone sets. It is manufactured to the specifications of and inspected by Western Electric Company. Has scale markings to show 0, 5, and 50% life remaining in dry batteries with separate scales for 2-cell and 3-cell batteries. Not arranged for testing single cells.

Pocket type, with cloth carrying bag with snap fasteners and equipped with Western Electric W2BM cord. Moving element has jeweled adjustable bearings and also has adjustable stops.

It will be necessary to allow a time interval of at least three minutes between consecutive readings in order to permit the winding to return to approximate room temperature. This instrument will be capable of withstanding a breakdown potential of 110 volts, a.c. applied between the cord clips and the case.

No. KS-8089.....each \$4.25



**No. 24 Sterling Pocket Ammeters**

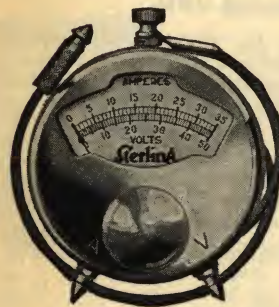
This pocket ammeter is universally used for testing dry cells. It has 0-35 ampere scale, 1-ampere divisions.

This is a durable instrument, having correct scale calibration and a clearly marked dial.

Full nickel finish.

Packed in individual boxes and supplied in a standard package containing 10 boxes. Shipping weight, 3 pounds.

No. 24.....each \$1.85

**Sterling Pocket Voltammeters**

Packed 1 in a box, 10 boxes in standard package. Shipping weight, 3 pounds.

**No. 44**

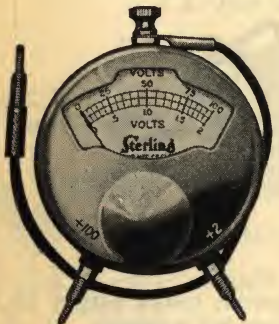
Tests amperage of dry cell A batteries and voltage of "Hot Shot" and storage A batteries; 0-35 amp. scale, 1-amp. divisions; 0-10 volt scale, 1/2-volt divisions.

No. 44.....each \$2.50

**No. 45**

Tests amperage of dry cell A batteries and voltage of either dry or storage B batteries up to 50 volts; 0-35 ampere scale, 1-ampere divisions; 0-50 volt scale, 1-volt divisions.

No. 45.....each \$3.60

**No. 38A Sterling Voltmeters****For Portable Radio Batteries**

For testing 90-volt B batteries and 1.5-volt A batteries.

The flexible terminals, designed to fit any type of socket hole, prevent shorts and permit inclining of meter for convenient reading.

Scale, 0-100 volts, 5-volt divisions. Scale, 0-2 volts, 1/10 volt divisions.

Tests 45-volt and 90-volt B batteries and 1 1/2-volt A batteries.

No. 38A.....each \$3.25

**No. 42A Sterling Graphic General Testers****For Portable Radio Batteries**

Designed for servicemen and dealers for testing all portable A and B batteries with a single tester.

Red and green color chart for all standard batteries including 45-volt and 90-volt B batteries and 1.5-volt, 4.5-volt, 6-volt and 7.5-volt A batteries.

Flexible terminals for battery protection and convenient reading.

Scale, 0-100 volts for special sizes of B batteries, 5 volt divisions.

No. 42A.....each \$6.00

**G-E Tungar Rectifier Bulbs**

No. 289881



No. 12x825



No. 206501



Nos. 99x44  
189048  
and 189049



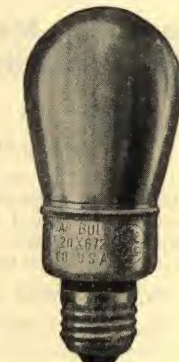
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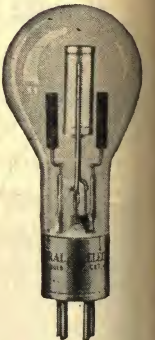
Nos. 99x45  
and 76x13



No. 199698



No. 20x672



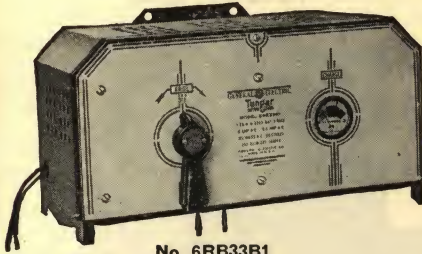
No. 45x674

These bulbs are filled with 99.8 per cent pure Argon gas. This gas undergoes five different additional treatments to remove impurities. Silver-colored magnesium coating on the inside absorbs impurities given off during operation.

**Half Wave, Argon****RECOMMENDED MAXIMUM****OUTPUT, D.C.**

No.	Each	Amp.	Volts	Socket No.	Approx. Ship. Wt. Lb.
289881	\$4.00	0.5	7.5	278768	5/16
12x825	4.00	2.0	75	278768	5/16
206501	4.00	2.0	75	Std. Edison	5/16
99x44	5.00	6.0	25	217967	9/16
189048	5.00	6.0	60	217967	9/16
189049	5.00	6.0	90	217967	9/16
217283	10.00	15.0	60	217967	1 1/16
99x45	15.00	20.0	25	217967	9/16
199698	\$5.00	2/0.5	25/30	Std. Edison	5/16
20x672	\$5.00	5.0	20	K3778926	3/8
76x13	15.00	20.0	75	217967	1 1/4
16x897	\$8.00	2.0	250	M5556072G1	1 1/8
45x674	15.00	6.0	250	M5556072G1	1 1/8



**G-E Tungar Battery Chargers****Form A—Autotransformer—Garage Type****No. 6RB33B1—3-18 Cells, 6 Amp.—Half Wave****No. 6RB33B2—3-36 Cells, 6 Amp.—Half Wave****115 Volt, 60 Cycles****No. 6RB33B1**

Recommended for use by repair shops, car dealers, garages, service stations, and tire dealers.

Single dial switch control turns on a.c. and regulates charging rate. Silver-plated a.c. switch contacts for long life and trouble-free service. Fuse protection for battery and Tungar bulb.

Overall dimensions: height, 10½ inches; depth, 7½ inches; width, 18½ inches.

Finished in red and white acid-resisting finish.

Shipping weight, 32 pounds.

No. ....	<b>6RB33B1</b>	<b>6RB33B2</b>
Each. ....	<b>\$38.00</b>	<b>41.00</b>
With Tungar Bulb No. ....	<b>189048</b>	<b>189049</b>
Capacity No. of Batteries. ....	<b>6</b>	<b>12</b>

**No. 6RB6B1****3-18 Cells, 12 Amp. or 3-36 Cells, 6 Amp.—Full Wave****115 Volts, 50/60 Cycles**

Recommended for use by garages, service stations and repair shops.

This tungar charges six 6-volt batteries at 12 amperes or twelve 6-volt batteries at 6 amperes or the equivalent.

New, easy-to-read meters. Two plug-in control panels regulate the charging rate to permit charging at a fast or slow rate or a combination of both.

Overall dimensions: height, 20⅞ inches; depth, 9⅞ inches; width, 11½ inches.

Finished with red lacquered case and ivory enameled panel.

Shipping weight, 57 pounds.

Price includes two No. 189048 Tungar bulbs.

No. 6RB6B1.....each **\$77.00**

**No. 6RB6B5****3-36 Cells, 12 Amp. or 3-72 Cells, 6 Amp.—Full Wave****115 Volts 50/60 Cycles**

Recommended for use by large garages, fleet owners and super service stations.

This tungar charges twenty-four 6-volt batteries at 6 amperes or twelve at 12 amperes or the equivalent. Provides fast, one-day charging service.

New easy-to-read meters. Charges at a fast rate, slow rate, or a combination of both.

Overall dimensions: height, 20⅞ inches; depth, 9⅞ inches; width, 11½ inches.

Finished with red lacquered case and ivory enameled panel.

Shipping weight, 84 pounds.

Price includes two No. 189049 Tungar bulbs.

No. 6RB6B5.....each **\$89.50**

Similar outfits for other voltage and frequencies are available.

**No. 6RC124F4 G-E Battery Chargers****Eighty Deluxe****105 to 125 Volts, 60 Cycles****Approved by Underwriters' Laboratories, Inc.**

Combines, in a single unit, a fast-charger and a high-rate discharge tester. Substantially charges a normal run-down battery in less than one hour.

Efficient operation and long life are obtained by the use of a copper oxide rectifying element.

A single setting of the charger controls sets the high 80-ampere charging rate for the proper time and then tapers automatically.

Bell alarm sounds if battery is connected in reverse, thus preventing damage to battery or charger.

Precision-type meters measure the charging rate and cell voltages.

High rate discharge battery test equipment is built in.

Equipped with G-E fan-cooled copper oxide rectifier, 10-foot d.c. leads, test leads, and coiling racks for cords.

Plugs into standard outlet agreeing in rating. A.C. current consumption, 10 amperes or approximately 1150 watts under normal conditions. Heavy duty a.c. cord set furnished with each charger. Timing device is a synchronous motor, electric clock to provide automatic shutoff at the exact time predetermined by the time chart on panel.

Coarse and fine switches permit very close adjustment of charging rate. Test harness with 4 pin connectors is included.

Dimensions: height, 29 inches; width, 21 inches; depth, 20 inches. Shipping weight, 150 pounds.

No. 6RC124F4.....each **\$199.50**  
No. K6686126G1, Extra Test Harness.....each **2.50**

**No. 6RC156F1 G-E Battery Chargers****One Hundred Deluxe****115 Volts, 60 Cycles**

Combines, in a single unit, a fast charger and a high-rate discharge tester.

Has automatically controlled, two-rate charging. Initial high rate of 100 amperes reduces automatically to low, safe, finishing rate when battery is 75 per cent charged.

Bell alarm sounds if battery is connected in reverse thus preventing damage to battery or rectifier.

Retractable, 10-foot charging leads are enclosed in casing when not in use.

Equipped with an efficient and reliable fan-cooled metallic rectifier.

Has high-rate discharge battery test. Voltage reading for individual cell or overall battery is controlled by selector switch. Has additional test

leads for voltage regulator, generator testing, and other necessary voltage tests.

Furnished with G-E precision-type meters.

Plugs into standard outlet and draws only 12 amperes at 115 volts a.c. Heavy duty a.c. cord set is included.

Electric time clock for dependable, two-rate, accurate timing.

Coarse and fine switches permit very close adjustment of charging rate.

Dimensions: height, 37 inches; width, 23½ inches; depth, 18½ inches.

Shipping weight, 190 pounds.

No. 6RC156F1.....each **\$249.50**





### G-E Battery Chargers For Farm and Home Use

115 Volts, 60 Cycles



A selenium rectifier-type charger, small and light in weight.

Will charge battery without removal from the automobile.

Has automatic tapering charge from maximum rate to lower safe rate as battery becomes fully charged.

Furnished with durable, long a.c. cord with molded-on plug; long d.c. leads with battery clips.

Plugs into standard 115-volt, 60-cycle a.c. outlet.

**No. 6RS916A1** (One Day) is for home and general use. Will charge the average run-down car battery in 24 hours or less. Has gray case with blue trim.

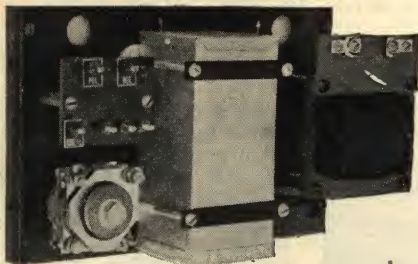
**No. 6RS916A2** (Overnite) is for farm use to charge car, truck, and tractor batteries in 12 hours or less. Has gray case with red trim.

No.	Each	Capacity	D.C. Amps.	DIMENSIONS, INCHES			Ship. Wt. Lb.
6RS916A1	\$14.95	3 Cells	7/4	Height	Width	Depth	7
6RS916A2	21.95	3 Cells	12/7	7 1/4	5	6	8

### G-E Copper Oxide Battery Eliminator

For Telephone Service

**No. 6RC61D4**—6 Volts, 0.35 Amp. D.C.  
115 Volts, 60 Cycle



Designed to deliver a noiseless d.c. of 6 volts, 0.350 amperes. There is a multitude of applications that come within this rating. A few of them are as follows:

New apartment house interphone systems; replace batteries (dry cell or storage batteries) on existing apartment house interphone systems; school interphone systems that come within rated output of this outfit; to supply power for way station telephones on railroad telephone lines; to supply power for local sounders on railroad telegraph lines—the smooth, humless d.c. obtained from this outfit (oscillograph shows no ripple) is praised by Morse code operators—any general application where d.c. not in excess of the rated output is desired.

This rectifier consists of a copper oxide rectifying unit, transformer and necessary specially constructed filter (condenser and choke coil) all mounted on a steel base plate and enclosed in a rugged casing. Casing has an attractive crystallized green finish, which will not chip or mar.

Terminals are provided to supply a small amount of a.c. at 6, 12 or 18 volts for bell ringing.

Approximate shipping weight, 21 pounds.

**No. 6RC61D4**.....each \$44.00

### G-E Full-Wave Tungars

For Charging Telephone Batteries

Form B—Insulated Transformer—Noiseless Type

**No. 6RB6B17**—3-24 Cells, 2-12 Amp. with Reactance—  
3-36 Cells, 2-12 Amp. without Reactance

115 Volts, 60 Cycles



With External Filter Reactance

This tungal when used in conjunction with No. 3126680 external filter reactance makes an excellent combination for float charging telephone batteries. The wide range of charging obtainable with this combination has made it popular for small, medium, and large size telephone exchanges.

In small and medium size exchanges where motor-generator sets are now in service, this combination tungal and reactance

is often used to supplement the motor-generator set especially during low load periods. This combination is particularly desirable for this purpose during week ends in those exchanges where a charging rate of 12 amperes or less is sufficient. This enables shutting down the motor-generator set and operating during this period at the much higher efficiency obtained from the tungal.

Employs the plug type control which simplifies balancing both sides of the outfit, as a visual indication of the settings on each side is given. An ammeter is provided on each side which further simplifies operation of the outfit.

Two or more outfits are often connected in parallel to obtain charging rates above 12 amperes. The full load efficiency is approximately 74% when used in conjunction with No. 3126680 reactance.

Approximate dimensions: height, 19 7/8 inches; width, 11 1/2 inches; depth, 11 5/8 inches.

Uses two standard 6-ampere tungal bulbs, No. 189049.

Approximate shipping weight, 91 pounds.

**No. 6RB6B17**.....each \$110.00

### No. 3126680 External Filter Reactance for Use with 12-Ampere Full-Wave Tungars

Used with 12-ampere full-wave tungars.

Height, 10 1/2 inches; width, 6 1/2 inches; depth, 7 3/4 inches.

Shipping weight, 73 pounds.

**No. 3126680**.....each \$42.00

### No. 6RB6B14—3-12 Cells, 2-12 Amp. with Reactance— 3-18 Cells, 2-12 Amp. without Reactance



This tungal is similar to No. 6RB6B17, the only difference being in the rated output voltage. When used in combination with No. 3126680 reactance it is adaptable to charging telephone batteries of 3 to 12 cells at an adjustable rate of 2 to 12 amperes. The plug type of control is used and two ammeters are provided. Incorporates all the features of the No. 6RB6B17 outfit.

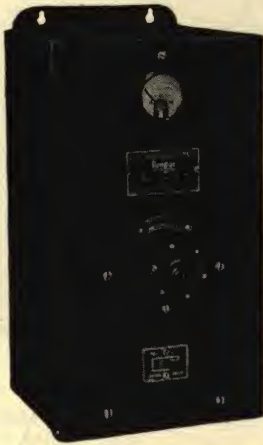
Approximate dimensions: height, 19 7/8 inches; width, 11 1/2 inches; depth, 9 5/8 inches.

Uses two No. 189048 bulbs.

Approximate shipping weight, 82 pounds.

**No. 6RB6B14**.....each \$81.00



**G-E Full-Wave Mercury Tungars****For Charging Telephone Batteries****Form B—Insulated Transformer—Noiseless Type****No. 6RB23C1—9-24 Cells, 2.0-Ampere****115 Volts, 50/60 Cycles**

This mercury tungan has slightly lower ampere capacity. It will give full 2.0-ampere charging rate up to 52 battery volts, and tapers to 0.9 amperes at 65 battery volts. Adjustment of the charging rate is obtained by secondary taps brought to a terminal board, in conjunction with a rheostat. A high grade D'Arsonval ammeter is provided to indicate the charging rate. A filter reactance is incorporated as an inherent part of the outfit.

Full-load efficiency, 53%. Power-factor, 86%.

Approximate dimensions: height,  $16\frac{1}{16}$  inches; width,  $9\frac{1}{16}$  inches; and depth,  $10\frac{3}{8}$  inches.

Uses one No. 16X897 bulb.

Approximate shipping weight, 45 pounds.

No. 6RB23C1.....each \$75.00

**No. 6RB10C5—9-24 Cells, 6 Ampere****115 Volts, 50/60 Cycles**

This outfit is similar to No. 6RB23C1 except for higher current output. It will give full-rated output of 6 amperes from 19 to 52 battery volts. Adjustment of charging rate is by means of secondary taps brought to a terminal board, used in conjunction with a rheostat. An ammeter is provided to indicate charging rate. A smoothing filter reactance is incorporated.

Particularly desirable for small and medium sized exchanges and PBX's which are too large for two or three-ampere outfits and too small for twelve-ampere outfits. It is sometimes recommended for installations where a three-ampere continuous float charge is required, because of the extra capacity that a six-ampere rate allows for boost charging.

Approximate dimensions: height,  $17\frac{1}{2}$  inches; width,  $12\frac{1}{8}$  inches; depth,  $14\frac{7}{8}$  inches.

Uses one No. 45X674 bulb.

Approximate shipping weight, 75 pounds.

No. 6RB10C5.....each \$110.00

**G-E Copper Oxide Battery Chargers****For Telephone Service**

This copper oxide rectifier for telephone service obtains output adjustment over an extremely wide range in very small steps. A new type of variable transformer replaces the conventional transformer taps and resistance commonly used for adjusting. The dial mounted on the front of the cabinet gives perfectly uniform adjustment from zero to full load.

The rectifying unit is a copper oxide assembly, a permanent rectifying device of proven reliability and safety. After the charging rate is adjusted, no other attention is required.

The life of this copper oxide rectifier is practically unlimited. There are no parts to replace. A large number of units have been running on test continuously since 1925.

The efficiency of the rectifier is high since all the adjustment is made with a transformer. This eliminates the losses which occur when a resistance is used to obtain output adjustment.

An internal filter prevents objectionable hum. The filter choke coil and the transformer are vacuum-impregnated with Glyptal. The properties of Glyptal provide maximum mechanical and electrical durability. The rectifier is equipped with a D'Arsonval instrument which gives an accurate indication of the output current.

An attractive black wrinkle-finish casing is designed for maximum practicability and lasting beauty. Because the lower section is perforated it allows free air circulation to cool the unit.

Several different ratings have been standardized so that it is possible to provide a trickle charge for large batteries or a full charge for small batteries.

Model No.	Each	Cells	Amps.	DIMENSIONS, INCHES		
				Height	Width	Depth
6RC98D1	\$90.00	12	1.0	19	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC98D2	100.00	12	2.0	19	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC98D3	112.00	12	3.0	19	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC99D3	125.00	12	4.0	25	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC99D2	135.00	12	5.0	25	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC99D1	148.00	12	6.0	25	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC95D2	190.00	12	8.0	25	$20\frac{3}{8}$	$14\frac{7}{8}$
6RC96D7	230.00	12	12.0	31	$20\frac{3}{8}$	$14\frac{7}{8}$
6RC98D4	90.00	24	0.5	19	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC98D5	100.00	24	1.0	19	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC98D6	112.00	24	1.5	19	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC99D4	125.00	24	2.0	25	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC99D6	148.00	24	3.0	25	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC100D1	190.00	24	4.0	31	$13\frac{3}{8}$	$14\frac{7}{8}$
6RC96D8	210.00	24	5.0	31	$20\frac{3}{8}$	$14\frac{7}{8}$
6RC96D9	230.00	24	6.0	31	$20\frac{3}{8}$	$14\frac{7}{8}$



**G-E Full-Wave Tungars****For Charging Telephone Batteries****Form B—Insulated Transformer—Noiseless Type****No. 244708—11-12 Cells, 0.3-0.5-Ampere****115 Volts, 60 Cycles**

A small compact charger designed primarily for continuous trickle charging in a small PBX. A filter reactance is incorporated to prevent objectionable hum in the telephone circuit.

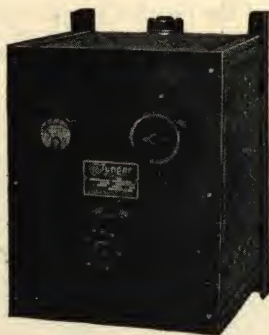
Designed to charge 11 or 12 cells at a variable resistance permits adjusting the charging rate from 0.3 to 0.5 amperes. Full load efficiency, 28%. Power-factor, 78%.

Approximate dimensions: height,  $9\frac{11}{16}$  inches; width,  $6\frac{3}{16}$  inches depth,  $8\frac{3}{4}$  inches.

Uses one No. 199698 bulb.

Approximate shipping weight, 25 pounds.

No. 244708.....each **\$52.00**

**No. 3049455—9-24 Cells, 1-3-Ampere****115 Volts, 60 Cycles**

This Tungan was designed primarily to meet the requirements of intercommunicating systems and PBX's. Extreme flexibility is a feature of this outfit. It can be used wherever a full-wave filtered output is required up to 3 amperes from 19 to 52 battery volts. Six sets of secondary taps brought to a terminal board located just inside the left-hand door, in conjunction with a rheostat controlled from the front panel permit a simple and easy method of adjusting the output over the entire range.

A high grade D'Arsonval ammeter, mounted on the front panel, gives accurate indication of the charging rate. A suitable filter reactance is incorporated in the design, to give quiet operation on telephone batteries.

Will give full 3.0-ampere charging rate at 52 battery volts, and taper to 1.75 amperes at 65 battery volts. Full load efficiency, 48%. Power-factor, 92%.

Approximate dimensions: height,  $17\frac{1}{2}$  inches; width,  $12\frac{1}{8}$  inches; depth,  $14\frac{3}{8}$  inches.

Uses 2 No. 12X825 bulbs.

Approximate shipping weight, 88 pounds.

No. 3049455.....each **\$112.00**

**G-E Copper Oxide Battery Chargers****For General Applications****\*115 Volts, 60 Cycles, A.C.**

This battery charger is available for charging all types of storage batteries, large or small. Once the charger is installed no other attention is required except an occasional adjustment to the charging rate.

Can be used wherever there is a battery to be charged: central and sub-station control batteries; emergency lighting batteries in central stations, hospitals, stores, theaters and manufacturing plants; telephone batteries in schools, industrial plants, offices, small exchanges and annunciator systems; alarm batteries for police and fire alarms, burglar alarms, industrial protective alarms and call systems; batteries operating starters on gasoline and diesel engines; industrial truck batteries, etc.

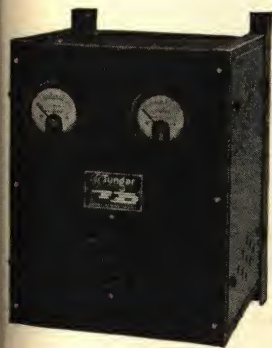
No.	Each	No. of Cells	Battery Voltage	D.C. AMPERES Max. Min.	APPROX. DIMENSIONS, IN.— Height Width Depth
6RC75A1	\$32.00	6-9	12-22.5	0.1 0.01	13 6 $\frac{1}{2}$ 8 $\frac{3}{4}$
6RC49A15	44.00	6-9	12-22.5	0.5 0.04	10 $\frac{7}{8}$ 11 $\frac{7}{8}$ 9 $\frac{1}{4}$
6RC49A16	50.00	6-9	12-22.5	1.0 0.08	10 $\frac{7}{8}$ 11 $\frac{7}{8}$ 9 $\frac{1}{4}$
6RC49A20	56.00	6-9	12-22.5	2.0 0.16	10 $\frac{7}{8}$ 11 $\frac{7}{8}$ 9 $\frac{1}{4}$
6RC98A1	77.00	2-12	4-30	1.0 0	19 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
6RC98A2	87.00	2-12	4-30	2.0 0	19 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
6RC98A3	99.00	2-12	4-30	3.0 0	19 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
*6RC99A3	110.00	2-12	4-30	4.0 0	25 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
*6RC99A2	120.00	2-12	4-30	5.0 0	25 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
*6RC99A1	130.00	2-12	4-30	6.0 0	25 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
*6RC95A2	168.00	2-12	4-30	8.0 0	25 13 14 $\frac{7}{8}$
*6RC96A1	208.00	6-12	12-30	12.0 0	31 20 $\frac{3}{8}$ 14 $\frac{7}{8}$
6RC75A2	35.00	10-16	20-40	0.1 0.01	13 6 $\frac{1}{2}$ 8 $\frac{3}{4}$
6RC49A17	50.00	10-16	20-40	0.5 0.05	10 $\frac{7}{8}$ 11 $\frac{7}{8}$ 9 $\frac{1}{4}$
6RC49A18	58.00	10-16	20-40	1.0 0.08	10 $\frac{7}{8}$ 11 $\frac{7}{8}$ 9 $\frac{1}{4}$
6RC98A4	77.00	13-24	26-60	0.5 0	19 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
6RC98A5	87.00	13-24	26-60	1.0 0	19 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
6RC98A6	99.00	13-24	26-60	1.5 0	19 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
*6RC99A4	110.00	13-24	26-60	2.0 0	25 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
*6RC99A6	130.00	13-24	26-60	3.0 0	25 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
*6RC100A1	168.00	13-24	26-60	4.0 0	31 13 $\frac{3}{8}$ 14 $\frac{7}{8}$
6RC96A8	180.00	13-24	26-60	5.0 0	31 20 $\frac{3}{8}$ 14 $\frac{7}{8}$
6RC96A9	208.00	13-24	26-60	6.0 0	31 20 $\frac{3}{8}$ 14 $\frac{7}{8}$
6RC75A3	40.00	17-25	34-62	0.1 0*01	13 6 $\frac{1}{2}$ 8 $\frac{3}{4}$
6RC49A19	45.00	17-25	34-62	0.5 0.04	10 $\frac{7}{8}$ 11 $\frac{7}{8}$ 9 $\frac{1}{4}$
6RC74A3	65.00	17-25	34-62	1.0 0.08	11 $\frac{3}{8}$ 18 11 $\frac{1}{4}$
6RC74A8	78.00	25-35	50-88	1.0 0.08	11 $\frac{3}{8}$ 18 11 $\frac{1}{4}$
6RC75A5	50.00	40-66	80-165	0.1 0.01	13 6 $\frac{1}{2}$ 8 $\frac{3}{4}$
6RC74A2	85.00	40-66	80-165	0.5 0.04	11 $\frac{3}{8}$ 18 11 $\frac{1}{4}$

\*These numbers are for 50/60 cycles, 115 volts.



### G-E No. 6RB10Y5 60-Cell Full Wave Tungars

For 55 to 66 Cells, 3 to 6 Amperes  
115 Volts, 60 Cycles



Recommended for charging 55 $\frac{1}{2}$ -cell control batteries in central stations, sub-stations, etc.

The charging rate is adjustable from 3 to 6 amperes at 120-battery volts; 1.5 to 6 amperes at 150-battery volts; and tapers to 3 amperes at 175-battery volts.

May be mounted on switchboard, above or behind it, or in any out-of-the-way corner.

The full-wave Tungar bulb requires only a short period of time for heating the filament and then it starts rectifying as soon as the load is placed on the outfit.

Can be depended on to operate 24 hours a day with practically no attention. There are no moving parts to wear, which minimizes maintenance costs. The battery cannot discharge through the bulb in the event of power failure; and these outfits will automatically start charging again when a.c. power returns.

Battery volts, 120/150/175. Charging amperes, 6/6/3. Overall dimensions: height, 17 $\frac{1}{2}$  inches; width, 12 $\frac{3}{8}$  inches; depth, 14 $\frac{1}{8}$  inches.

Renewal tungar bulb: No. 45X674.

Approximate shipping weight, 95 pounds.

No. 6RB10Y5.....each \$164.00

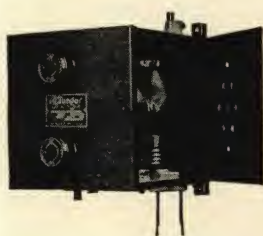
Renewal Tungar Bulb, No. 45X674.....each 15.00

Similar outfits for other voltages and frequencies are available.

### G-E No. 6RB19Y2 Full Wave Tungars

For Charging Clock, Signal, Control Batteries, Etc.  
Form B—Insulated Transformer

6 Cells, 6 or 12 Ampere  
115 Volts, 60 Cycles



A charger used for charging 6-cell (12-volt) batteries, or it may be used to charge two 3-cell batteries. A snap of the tumbler switch changes the charging rate from 6 to 12 amperes. No other adjustment of the charging rate is provided, since it is generally not required on applications where this outfit is used. Two of these outfits are often connected in parallel to obtain a charging rate of 24 amperes at 12 volts.

Highly recommended for use in fire stations for fire apparatus batteries. Also used with No. 3126680 reactance to float charge telephone batteries.

Approximate dimensions: height, 11 inches; width, 9 $\frac{3}{16}$  inches; depth, 11 $\frac{1}{4}$  inches.

Uses two No. 189048 bulbs.

Approximate shipping weight, 43 pounds.

No. 6RB19Y2.....each \$62.00

### G-E 60-Cell Full Wave Tungars

115 Volts, 60 Cycles

These instruments are designed specially for float charging 60-cell control batteries in central stations, sub-stations, industrial plants, etc.

Designed to meet the exacting requirements of central station engineers, making it possible to replace present charging equipment for control batteries with highly efficient, quiet operating chargers.

No. 6RB22Y2  
55-66 Cells, 0.4-2 amp.



Incorporates micrometer adjustment of the charging rate, which is easily controlled from front panel.

The maximum charging rate of 2.0 amperes may be obtained at 120 or 150-battery volts, and tapers off slightly at 175-battery volts. A charging rate as low as 0.4 ampere at 120-battery volts can be obtained.

Battery volts, 120/150/175. Charging amperes, 2.0/2.0/0.75. Overall dimensions: height, 14 inches; width, 10 $\frac{1}{8}$  inches; depth, 11 $\frac{3}{8}$  inches. Approx.

shipping weight, 58 pounds.

Renewal tungar bulb: No. 16X897.

No. 6RB22Y2.....each \$125.00

Renewal Tungar Bulb, Cat. No. 16X897.....each 8.00

No. 6RB14Y1  
55-66 Cells, 0.4-8 amp.



Used primarily for trickle charging where there is a very small load or no load on the battery. It is arranged for wall, panel, or bench mounting.

Where this charger is to be used, the charging rate is usually predetermined; and once the charging rate has been set, no further adjustments are necessary, consequently, the outfit is supplied without instruments.

Designed to deliver a tapering charge which tapers from 0.8 ampere at 120-battery volts to 0.4 ampere at 175-battery volts. A cover on the top gives easy access to the bulb.

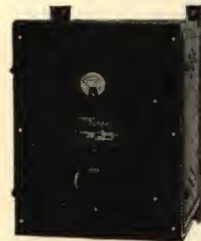
Battery volts, 120/150/175. Charging amperes, 0.8/0.6/0.4. Overall dimensions: height, 9 $\frac{1}{16}$  inches; width, 6 $\frac{3}{16}$  inches; depth, 7 $\frac{1}{16}$  inches. Approx. shipping weight, 32 pounds.

Renewal tungar bulb: No. 16X897.

No. 6RB14Y1.....each \$42.00

Renewal Tungar Bulb, Cat. No. 16X897.....each 8.00

No. 6RB10Y3  
55-66 Cells, 1.75-6 amp.



Simple, sturdy construction. An outfit for applications, which do not require extra refinements or capacity.

It is usually used where there is a voltmeter available on the switchboard for indicating the battery voltage, and consequently is supplied without a voltmeter.

Although there is some adjustment of the charging rate provided, this is primarily a tapering charger. The charging rate starts at 6 amperes at

120-battery volts and tapers to 1.75 amperes at 175-battery volts.

Battery volts, 120/150/175. Charging amperes, 6.0/3.0/1.75. Overall dimensions: height, 17 $\frac{1}{2}$  inches; width, 12 $\frac{3}{8}$  inches; depth, 14 $\frac{1}{8}$  inches. Approx. shipping weight, 95 pounds.

Renewal tungar bulb: No. 45X674.

No. 6RB10Y3.....each \$120.00

Renewal Tungar Bulb, Cat. No. 45X674.....each 15.00

Similar outfits for other voltages and frequencies are available.



## G-E Constant Potential Full Wave Mercury Tungars

Form B—Insulated Transformer

No. 6RB3E4, 115-Volt, 2.0-Ampere and

No. 6RB3E8, 230-Volt, 2.0 Ampere

115 Volts, 60 Cycles



No. 6RB3E4

This mercury Tungal rectifier is a constant potential device, designed specifically for operating electro-magnetic devices, such as solenoids, magnetic clutches, magnetic brakes, magnetic chucks, etc. It is also used extensively to operate small d.c. motors, card punching machines and innumerable other d.c. devices where power requirements are 2 amperes or less at 115 volts, d.c.

Furnished in a neat, strong, welded steel casing with two hinged doors allowing easy access to bulb and transformer. A double-pole tumbler switch mounted on the front panel breaks both sides of the a.c. line. Outfit is arranged for wall or panel mounting.

Approximate dimensions: height, 11 inches; width, 9 $\frac{9}{16}$  inches.

Uses one No. 16X897 bulb.

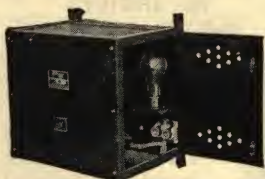
Approximate shipping weight, 60 pounds.

Cat. No. ....	6RB3E4	6RB3E8
Each. ....	\$50.00	65.00
Depth. .... inches	11 $\frac{1}{4}$	14 $\frac{1}{4}$

No. 6RB10E1, 115-Volt, 6-Ampere and

No. 6RB10E3, 230-Volt, 6-Ampere

115 Volts, 50/60 Cycles



No. 6RB10E1

This outfit is similar to the above outfit, except that it has a capacity up to 6 amperes. The applications are about the same. The output voltage regulation is well within the usual commercial allowance of 10% from no load to full load.

Approximate dimensions: height, 17 $\frac{1}{2}$  inches; width, 12 $\frac{1}{8}$  inches; depth, 14 $\frac{3}{8}$  inches.

Uses one No. 45X674 bulb.

Approximate shipping weight, 95 pounds.

Cat. No. ....	6RB10E1	6RB10E3
Each. ....	\$100.00	120.00

## G-E Half Wave Tungars

For Charging Clock, Signal, Control Batteries, Etc.

Form B—Insulated Transformer  
115 Volts, 60 Cycles

No. 204170—9-12 Cells, 0.5-2.5-Ampere



Nos. 204170 and 199717

A simple, compact, half-wave outfit designed to charge from 9 to 12 cells at an adjustable rate 0.5 to 2.5 amperes. Adjustment is obtained by means of two secondary taps used in conjunction with a 6-ohm resistance.

Supplied in a neat casing arranged for wall, panel, or bench mounting. A hinged cover allows easy access to bulb, resistance and transformer. No instruments are provided, since

they are not generally required on applications where this outfit is used.

Full-Load efficiency, 55%. Power-factor, 50%.

Approximate dimensions: height, 9 $\frac{1}{16}$  inches; width, 6 $\frac{3}{16}$  inches; depth, 8 $\frac{3}{4}$  inches.

Uses one No. 195528 bulb.

Approximate shipping weight, 25 pounds.

No. 204170 ..... each \$47.00

No. 199717—16-24 Cells, 0.5-2.5-Ampere

This tungal is similar in construction to No. 204170, except it has a wider d.c. voltage range. Three taps on the secondary, in conjunction with an adjustable resistance, provide full adjustment of charging rate from 0.5 to 2.5 amperes at 40, 50, or 60-battery volts. Very liberally designed throughout. Will charge up to 75 volts at 1.5 amperes.

Full-load efficiency, 60%. Power-factor, 50%.

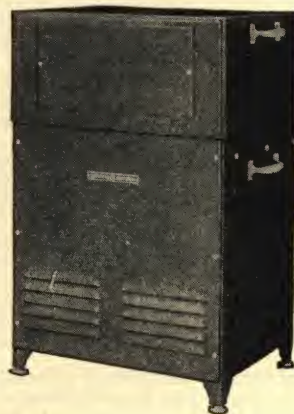
Approximate dimensions: height, 9 $\frac{1}{16}$  inches; width, 6 $\frac{3}{16}$  inches; depth, 8 $\frac{3}{4}$  inches.

Uses one No. 189049 bulb.

Approximate shipping weight, 29 pounds.

No. 199717 ..... each \$48.00

## G-E No. 6RC138F4 General Purpose Copper Oxide Rectifiers



This type rectifier has been used successfully for several years in motion picture projection service.

Conservatively rated 1 kw. continuous output at 110 to 115 volts, d.c. For intermittent duty, where the duty cycle does not exceed 20 minutes per hour, it may be safely rated 1.5 kw. at 110 to 115 volts, d.c.

Line taps are provided for a range of line voltage from 190 to 250. May be operated in parallel where the load conditions exceed the rating of a single unit.

Rated d.c. output: 110-115 volts, 10 amperes.

Dimensions: height, 33 $\frac{3}{8}$  inches; width, 21 $\frac{1}{2}$  inches; depth, 16 inches.

No. 6RC138F4 ..... each \$250.00



## No. 500 G-E Plating Rectifiers



A complete unit which consists of transformers, copper-oxide stacks, ventilating fan, contactor, and auxiliary equipment.

Made of heavy steel with acid-resistant wrinkle finish.

Has removable front panel for access to all parts.

Transformers are vacuum-impregnated with insulating varnish, and the copper-oxide stacks are varnish-dipped to resist corrosion. A fan provides an even flow of air around the stacks and transformers.

Available in two output ratings: 6 volts, 500 amperes or 12 volts, 250 amperes. Higher output ratings may be obtained by connecting two or more rectifiers in series, parallel, or series-parallel. No 500 is normally used with a G-E manual On-Load voltage control to regulate tank voltage. However, if automatic voltage control is desired, the On-Load control is recommended.

## Fuse Capacity

No. of Rectifiers	A.C. Volts		No. of Rectifiers	A.C. Volts	
	230	440		230	440
1	20	10	5	80	40
2	40	20	6	90	45
3	50	25	7	110	60
4	70	40	8	125	60

For multiple rectifier installations, multiply the fuse sizes by the number of rectifiers for proper fusing.

## 230 Volts, 60 Cycles, 3-Phase

D.C. Volts	No. of Rectifiers	Maxi. of d.c. tiff. Amps.	Rectifier		No. of Controls	Control		Method of Connecting Rectifiers	Rectifier Control Ship. Wt., Lb.
			No.	Each		No.	Each		
1-6	500	1	6RC120F1	.....	1	3126760G12	.....	.....	710
1-6	1000	2	6RC120F1	.....	1	3126760G15	.....	Parallel	1310
1-6	1500	3	6RC120F1	.....	1	3126760G15	.....	Parallel	1795
1-6	2000	4	6RC120F1	.....	1	3126760G17	.....	Parallel	2370
2-12	250	1	6RC120F3	.....	1	3126760G12	.....	.....	710
2-12	500	2	6RC120F1	.....	1	3126760G15	.....	Series	1310
2-12	750	3	6RC120F3	.....	1	3126760G15	.....	Parallel	1795
2-12	1000	4	6RC120F1	.....	1	3126760G15	.....	Series-Par.	2370
3-18	500	3	6RC120F1	.....	1	3126760G15	.....	Series	1795
4-24	250	2	6RC120F3	.....	1	3126760G16	.....	Series	1310
4-24	500	4	6RC120F1	.....	1	3126760G17	.....	Series	2370
4-24	1000	8	6RC120F1	.....	2	3126760G17	.....	Series-Par.	4740
4-42	500	7	6RC120F1	.....	2	3126760G17	.....	Series	4165
8-48	250	4	6RC120F3	.....	1	3126760G17	.....	Series	2370
4-48	500	8	6RC120F1	.....	2	3126760G17	.....	Series	4740

## 440 Volts, 60 Cycles, 3-Phase

D.C. Volts	No. of Rectifiers	Maxi. of d.c. tiff. Amps.	Rectifier		No. of Controls	Control		Method of Connecting Rectifiers	Rectifier Control Ship. Wt., Lb.
			No.	Each		No.	Each		
1-6	500	1	6RC120F2	.....	1	3126761G12	.....	.....	710
1-6	1000	2	6RC120F2	.....	1	3126761G15	.....	Parallel	1310
1-6	1500	3	6RC120F2	.....	1	3126771G15	.....	Parallel	1795
1-6	2000	4	6RC120F2	.....	1	3126761G17	.....	Parallel	2370
2-12	250	1	6RC120F4	.....	1	3126761G12	.....	.....	710
2-12	500	2	6RC120F2	.....	1	3126761G15	.....	Series	1310
2-12	750	3	6RC120F4	.....	1	3126761G15	.....	Parallel	1795
2-12	1000	4	6RC120F2	.....	1	3126761G17	.....	Series-Par.	2370
3-18	500	3	6RC129F2	.....	1	3126761G15	.....	Series	1795
4-24	250	2	6RC120F4	.....	1	3126761G15	.....	Series	1310
4-24	500	4	6RC120F2	.....	1	3126761G17	.....	Series	2370
4-24	1000	8	6RC120F2	.....	2	3126761G17	.....	Series-Par.	4740
4-42	500	7	6RC120F2	.....	2	3126761G17	.....	Series	4165
8-48	250	4	6RC120F4	.....	1	3126761G17	.....	Series	2370
4-48	500	8	6RC120F2	.....	2	3126761G17	.....	Series	4740

When ordering, specify d.c. voltmeter and ammeter ratings for controls.

## No. 300 G-E Plating Rectifiers



A complete unit which consists of transformers, copper-oxide stacks, ventilating fan, contactor, and auxiliary equipment.

Transformers are vacuum-impregnated with insulating varnish, and the copper-oxide stacks are varnish-dipped to resist corrosion. An even flow of air around the copper-oxide stacks and transformers is maintained by a ventilating fan which brings the air in at the bottom of the rectifier and out through the top section.

Available with two output ratings: 6 volts, 300 amperes, or 12 volts, 150 amperes. The 6-volt model is suited to small tanks used for cadmium, zinc, chrome, or other still-plating applications. The 12-volt model is used for barrel plating and cleaning. Higher output ratings required by individual tanks can be obtained by connecting two or more rectifiers in series, parallel, or series-parallel. These are normally used with the G-E On-Load manual voltage control.

On-Load, hand-operated voltage control, with coarse and fine handles and START and STOP push buttons, provides adjustment of rectifier output to the tank. This On-Load control is designed with an overvoltage relay which automatically protects the rectifier or bank of rectifiers and the plating tank from application of excess voltage.

Has acid-resistant wrinkle finish.

## Fuse Capacity

No. of Rectifiers	A.C. Volts		No. of Rectifiers	A.C. Volts	
	230	440		230	440
1	15	10	5	60	30
2	25	15	6	60	30
3	40	20	7	70	40
4	50	25	8	80	40

For multiple rectifier installations, multiply the fuse sizes by the number of rectifiers for proper fusing of the equipment.

## 230 Volts, 60 Cycles, 3-Phase

D.C. Volts	No. of Rectifiers	Maxi. of d.c. tiff. Amps.	Rectifier		No. of Controls	Control		Method of Connecting Rectifiers	Rectifier Control Ship. Wt., Lb.
			No.	Each		No.	Each		
1-6	300	1	6RC138F11	.....	1	3126760G11	.....	.....	505
1-6	600	2	6RC138F11	.....	1	3126760G12	.....	Parallel	865
1-6	1200	4	6RC138F11	.....	1	3126760G15	.....	Parallel	1620
2-12	150	1	6RC138F13	.....	1	3126760G11	.....	.....	505
2-12	300	2	6RC138F11	.....	1	3126760G12	.....	Series	865
2-12	300	2	6RC138F13	.....	1	3126760G12	.....	Parallel	865
3-18	300	3	6RC138F11	.....	1	3126760G15	.....	Series	1300
4-24	150	2	6RC138F13	.....	1	3126760G12	.....	Series	865
4-24	300	4	6RC138F11	.....	1	3126760G15	.....	Series	1620
7-42	300	7	6RC138F11	.....	1	3126760G17	.....	Series	2670
8-48	150	4	6RC138F13	.....	1	3126760G15	.....	Series	1620

## 440 Volts, 60 Cycles, 3-Phase

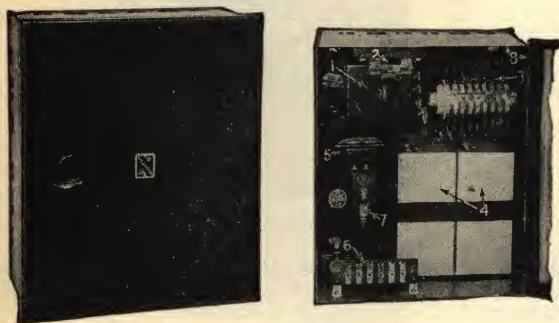
D.C. Volts	No. of Rectifiers	Maxi. of d.c. tiff. Amps.	Rectifier		No. of Controls	Control		Method of Connecting Rectifiers	Rectifier Control Ship. Wt., Lb.
			No.	Each		No.	Each		
1-6	300	1	6RC138F12	.....	1	3126761G11	.....	.....	505
1-6	600	2	6RC138F12	.....	1	3126761G12	.....	Parallel	865
1-6	1200	4	6RC138F12	.....	1	3126761G15	.....	Parallel	1620
2-12	150	1	6RC138F14	.....	1	3126761G11	.....	.....	505
2-12	300	2	6RC138F12	.....	1	3126761G12	.....	Series	865
2-12	300	2	6RC138F14	.....	1	3126761G12	.....	Parallel	865
3-18	300	3	6RC138F12	.....	1	3126761G15	.....	Series	1300
4-24	150	2	6RC138F14	.....	1	3126761G12	.....	Series	865
4-24	300	4	6RC138F12	.....	1	3126761G15	.....	Series	1620
7-42	300	7	6RC138F12	.....	1	3126761G17	.....	Series	2670
8-48	150	4	6RC138F14	.....	1	3126761G15	.....	Series	1620

When ordering, specify d.c. voltmeter and ammeter ratings for controls.



## Edwards Telephone Rectifiers

For 110-130 Volts, 50-60 Cycles, A.C.



Edwards rectifying units consist of transformer, full-wave copper-oxide rectifier, filter condensers, chokes and fuses completely assembled in metal cabinet.

In the units for general signaling use, chokes and filter condensers are omitted, but otherwise they are identical.

All connections are plainly marked.

Large installations, or those where 120-volt service is not thoroughly dependable, often require an emergency storage battery. For this service, Edwards units can be equipped with a variable charging resistor, and, where necessary, an auxiliary relay to automatically transfer from rectifier to storage battery.

Standard finish of cabinet, olive green.

## For Intercommunicating Systems

No. ....	924	926
D.C. Required for Talking...volts	6	24
A.C. Required for Ringing...volts	6-12-18-24	6-12-18-24

## For Manual Switchboard Telephone Systems

Requires 24 volts d.c. for talking and ringing.

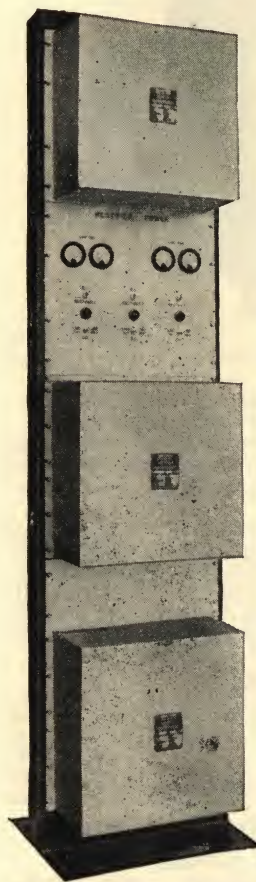
Cord Pairs in use, 1-5, 5-10, 10-20.

No. ....	923	924	926
Each. ....	\$120.00	60.00	175.00
D.C. Volts No Load ....	7.5	9.5	31.0
D.C. Volts Full Load Rating:			
Continuous. ....	3.5	7.5	26.0
Intermittent. ....	2.5	6.0	24.0
D.C. Amperes Full Load Rating:			
Continuous. ....	1.0	.35	.35
Intermittent. ....	1.5	.5	.5
A.C. Volts No Load ....	8-12-16-20-24	8-12-16-20-24	8-12-16-20-24
A.C. Watts Full Load Rating:			
Continuous. ....	50	50	50
Intermittent. ....	100	100	100

Standard units are for use on 110-130 volts, 50-60 cycles a.c. For 25 cycles, add 25 per cent to prices.

## Fansteel Selenium Rectifiers

For Railway Communications Service



Catalog 1937 Fansteel D.C. Power System consisting of three rectifiers and power control panel for 160-volt, 5-ampere d.c. supply to two telegraph line or printer circuits.

Fansteel Selenium Rectifier power units and battery chargers are supplied in standard or custom-built models for every direct current supply requirement in railway telegraph or telephone service.

## Power Units for Line Service

are supplied for wall or standard 19-inch relay rack mounting to furnish filtered direct current without battery to telegraph line, printers, perforators, re-perforators or distributor transmitter machine circuits. Output voltage is adjustable.

**Power Units for Local Circuits** eliminate batteries, supplying filtered direct current for local or "sounder" circuits. Output voltage is adjustable.

## Telephone Battery Chargers

are supplied for central switchboard or P.B.X. batteries at maximum charging rates ranging from 500 milliamperes to 12 amperes. They are designed to be connected to the battery continuously, all noise being eliminated by the filter network. When properly adjusted to the average load, they will not overcharge the battery. Coarse and fine adjustment switches and d.c. ammeters are provided on all standard models, which are assembled in steel housings for wall mounting.

## Battery-Rectifier Power Supply

for dispatchers' transmitters, other local telephone circuits, alarms, annunciators and other low voltage equipment, consists of a small storage battery and full wave filtered rectifier assembled into a steel cabinet for wall mounting. In operation, the rectifier is connected into an a.c. supply, charging the battery continuously at slightly more than the average circuit load. Supplied in 4, 6 and 8-volt models, regular duty or heavy duty with batteries of sufficient rating to permit long periods of operation when the a.c. supply is off.

**Dependable Performance** is built into every rectifier power unit or battery charger made by Fansteel Metallurgical Corporation. Rugged, heavy duty selenium rectifier stacks, built for long years of service, are made in the Fansteel plant under high standards of scientific quality control. All other components are made or selected under equally high standards. All equipment is designed by trained engineers well versed in the requirements of railway communications service.

**How to Order:** Specify intended use, a.c. line voltage and frequency, d.c. output volts and amperes (or number and type of cells of battery). For custom-built equipment, ask for Form 247. For complete references, ask for Fansteel Bulletin RDP-109.



Catalog 1312-P Heavy Duty Battery Rectifier Power Supply Consisting of 6-volt, 10.4 ampere-hour battery and 0.75 ampere selenium rectifier with filtered output for dispatchers' transmitters and other low voltage service.

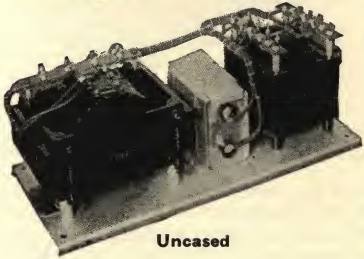


**Raytheon Voltage Stabilizers**

Input, 95-130 Volts, 60 Cycles, Single Phase;  
Output, 115 Volts, Plus or Minus ½%



Cased



Uncased

Constant a.c. voltage is essential for effective operation of many electrical devices. When voltage stabilizer is built into products as original equipment, its simplicity and unique freedom from adjustments eliminate manual voltage adjustments in completed assembly.

Well suited for laboratory use a sit eliminates the variables introduced by changing line voltage.

All branches of the electrical communications industry use the voltage stabilizer extensively. Amplifiers used in talking motion pictures, radio transmitters, sound recording equipment, and telephone apparatus operate most effectively with a constant voltage input. May be made for any output voltage or for several different output voltages, all stabilized, single phase only. Also made for operating devices where inherent limitations of standard type may not be suitable.

Wherever correct operation of synchronous electric clocks is obtained, the voltage stabilizer will meet its specifications. If frequency varies, so that correct operation of synchronous electric clocks is not obtained, write for recommendations giving the change in frequency expected. Standard stabilizer is adjusted to operate with a unity power factor load. If load is materially less than unity, adjustment can be made at factory to suit.

**30 to 300 Watts**

60 Cycle—Input 95-130 Volts—Output 115 Volts—Single Phase

No.	Each	Output Watts	Length	Width	Height	Weight Pounds
VH611	\$26.00	30	6	3 1/16	4 1/2	8
VH621	26.00	35	6	3 1/16	4 1/2	8
VH622	31.00	75	7 1/4	4	5 1/16	12
VH623	39.00	150	8 1/16	4 3/4	6 1/16	20
VH624	57.00	300	10 1/2	6	7 1/16	35

**500 to 2000 Watts**

60 Cycle—Input 95-130 Volts—Output 115 Volts—Single Phase

No.	Each	Output Watts	Length	Width	Height	Weight Pounds
VR-5	\$82.00	500	12 1/2	9 5/8	8 1/2	70
VR-6	170.00	1000	14	14 3/4	11 7/8	140
VR-7	241.00	2000	16 3/8	14 3/4	11 7/8	200

**4 KVA to 12 KVA Models—4000 to 12,000 Watts**

60 Cycle—Input 190-260 Volts—Output 230 Volts

No.	Each	Output Watts	Length	Width	Height	Weight Pounds
VL6404	†.....	2000	.....	.....	28	500
VL6406	.....	6000	.....	.....	35	675
VL6408	.....	8000	.....	.....	40	850
VL6410	.....	10,000	.....	.....	52	1025
VL6412	.....	12,000	.....	.....	52	1200

**No. VR7A**

60 Cycle—Input 190-260 Volts—Output 220-230 Volts

No.	Each	Output Watts	Length	Width	Height	Weight Pounds
VR7A	\$240.00	2000	16 3/8	14 3/4	11 7/8	200

\*May be connected for either 115 or 230 volts at the factory in any combination of input and output voltage, i.e.: 95-130-volt input, 115-volt output; or 190-260-volt input and 115-volt output.

†Prices upon application.

**Raytheon RECTICHARGERS**

For Telephone Power Supply

With Natural Ventilation



A constant potential battery charger for telephone service. Basically a dry disk rectifier with a Raytheon control circuit which maintains a substantially constant d.c. voltage output at any load, in the presence of wide changes in a.c. input voltage. Operation is accomplished without the aid of any moving parts.

A small storage battery, floated across the terminals of the unit, and the combination of the two will make a complete a.c. to d.c. telephone power unit.

**Operation**

When the load current demand is less than the rectifier rating, the unit supplies all the current required and at the same time delivers to the battery a trickle charge of the right amount to make up for the internal battery losses and to prevent destructive chemical action. If the current demand exceeds the rating, the excess is supplied by the battery. When the load drops back to a value below the unit rating, the unit output remains at its rated value. The difference between the unit rating and the load current is thus supplied to the battery until it is fully charged.

**Doubling the Current Rating**

Any size of unit may be connected to any make of constant current charger having a filter for telephone service through a special relay. It provides a definite cost saving incentive for using these combinations either for new installations or to increase the current capacity of existing installations.

No.	Each	Battery Cells	Amps.	Width	Depth	Height	Weight, Lb.
RCR1066	\$142.60	11/12	1.0	14 1/2	7 5/8	14 1/8	62
RCR1073	172.50	11/12	2.0	14 1/2	9 1/2	14 1/8	94
RCR1058	223.10	11/12	3.0	19	11	21	163
RCR1067	302.45	11/12	6.0	19	15 1/4	28	233
RCR2013-A	*.....	11/12	12.0	15 1/4	16 5/8	20 3/4	180
RCR2016-A	*.....	11/12	24.0	15 1/4	16 5/8	27 3/4	180
RCR1068	172.50	22/24	1.0	14 1/2	9 1/2	14 1/8	93
RCR1076	236.90	22/24	2.0	19	11	21	173
RCR1069	269.10	22/24	3.0	19	15 1/4	28	231
RCR1070-B	285.00	22/24	6.0	10 1/4	9 1/4	21	180
RCR2016-B	*.....	22/24	12.0	15 1/4	16 5/8	27 3/4	180

**Accessories**

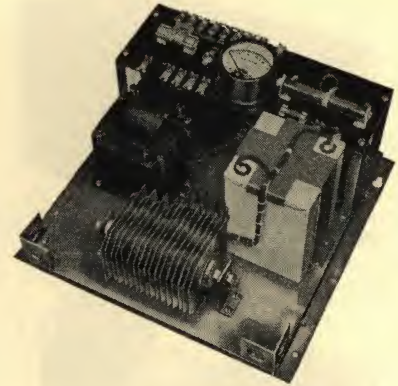
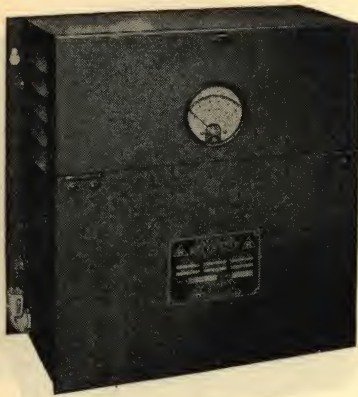
No.	Brackets for Floor Mounting	Separate Relay for Constant Current Combination	No.	Brackets for Floor Mounting	Separate Relay for Constant Current Combination
RCR-1066	BR-1095	CR-1093	RCR-1076	BR-1097	CR-1094
RCR-1073	BR-1095	CR-1094	RCR-1069	BR-1096	CR-1090
RCR-1058	BR-1097	CR-1090	RCR-1085	.....	CR-1092
RCR-1067	BR-1096	CR-1091	RCR-1070A	.....	CR-1091
RCR-1068	BR-1095	CR-1093			

\*Prices on request.



## Raytheon RECTIFIER

(Battery Eliminators for Telephone Service)



An economical way of obtaining telephone direct current power direct from an alternating current source.

Improves telephone service by providing full direct current power for the best operation of the telephones.

A satisfactory way of supplying direct current power to PBX and PAX boards.

### Features

1. Outlasts many sets of batteries.
2. Eliminates the trouble and expense of routine service for battery inspection.
3. Releases wires carrying charging current from the central office to subscribers' PBX boards for revenue producing service.
4. Minimizes power cost because of high efficiency in converting a.c. to d.c.

### Steady D.C. Voltage

The PBX and PAX boards require a stabilized d.c. voltage to insure proper operation under the conditions of changing load normally encountered.

No. 1044-E and larger sizes include an exclusive d.c. stabilizing circuit which operates magnetically and, therefore, requires neither adjustment nor maintenance.

### Continuous D.C. Power During an A.C. Interruption

Relays may be added to change to a d.c. power source in the event of a.c. failure, a.c. sources are normally dependable, but applications are possible where even rare interruptions cannot be countenanced. In these cases, a change of source relay should be specified.

### Ratings

The established current ratings are conservative and the user will not find it necessary to de-rate any of them by adding a safety factor. Operates a telephone system for 24 hours a day as long as the maximum current demand does not exceed the rating.

However, it should be remembered that ratings are based on two assumptions: first, on their being installed in live air; second, on being placed where the maximum ambient temperature does not exceed 95° F. If ambient conditions exist which differ from the above, write for suggestions before selecting.

### With Dry Plate Rectifying Units

Input, 110-125 Volts A.C., Single Phase

No.	Each	DC OUTPUT FOR TALKING		No. Load Output Volts	Full Load Output Volts	A.C. Supply Frequencies	60-CYCLE OUTPUT FOR RINGING		CABINET, INCHES			Shipping Weight Pounds	Brackets for Floor Mounting	
									Width	Depth	Height			
*RFR-1057-R	\$32.00	4	0.23	...	4.0	50/60	...	...	7	6 1/4	10 1/2	13	No. 1027 with Change of Source Relay	
RFR-1024	32.00	6	0.50	8.5	5.5	50/60	6-12-18-24 A.C.	4.00	7	6 1/4	10 1/2	12		
RFR-1028-A	52.00	6	1.00	8.5	5.5	50/60	6-12-18-24 A.C.	4.00	7	6 1/4	10 1/2	14		
RFR-1026	48.00	12	0.50	15.5	11.5	50/60	6-12-18-24 A.C.	4.00	7	6 1/4	10 1/2	14		
RFR-1027	52.90	24	0.50	28.0	20.0	50/60	6-12-18-24 A.C.	4.00	7	6 1/4	10 1/2	19		
RFR-1027-R	59.80	24	0.50	28.0	20.0	50/60	6-12-18-24 A.C.	...	No. 1027 with Change of Source Relay			19	No. 1044-E with Change of Source Relay	
RFR-1044-E	111.55	24	1.00	26.0	24.0	60	6-12-18-24	4.00				63		
RFR-1044-ER	118.45	24	1.00	26.0	24.0	60	75-100 A.C.	...				63		
RFR-1043	126.50	24	1.50	26.0	24.0	60	...	0.15				69		
RFR-1043-R	133.40	24	1.50	26.0	24.0	60	...	...				69		
RFR-1040	163.30	24	3.00	26.0	24.0	60	24 D.C.	...	No. 1043 with Change of Source Relay			81	No. 1040 with Change of Source Relay	
RFR-1040-R	170.20	24	3.00	26.0	24.0	60	24 D.C.	...				81		
RFR-1041	197.80	24	4.50	26.0	24.0	60	24 D.C.	...				142		
RFR-1042	226.00	24	6.00	26.0	24.0	60	24 D.C.	...				179		
RFR-1082	239.20	48	3.00	52.0	48.0	60	48 D.C.	...				170		
RFR-1079	264.50	48	4.00	52.0	48.0	60	48 D.C.	...	19	15 5/16	28	169	No. 1040 with Change of Source Relay	
RFR-1080	394.45	48	6.00	52.0	48.0	60	48 D.C.	...	19	15 5/16	28	180		

\*Operates one or two magneto telephone operators' headset transmitters. Change of source relay included.

Made to order for other wanted a.c. inputs and d.c. outputs.

Change of source relays can be supplied on all models. When not listed, order by adding suffix R to catalogue number.



## Western Electric

### Carrier Telephone Systems

#### Type C

A multi-channel carrier system operating at a frequency range of from 6 to 29 kilocycles. Provides facilities for superimposing three additional telephone circuits upon an existing open wire voice frequency telephone circuit.

The C5 Carrier Telephone Terminal is used at each end of a Type C Carrier Telephone System and the C1 Carrier Telephone Repeater is used at intermediate points of such a system to amplify the three carrier channels.

Where the total length of entrance and intermediate cable involved is relatively short, a Type C system employing two C5 terminals without repeaters can be operated under average conditions over lines up to about 150 to 200 miles in length. By using intermediate C1 Carrier Telephone Repeaters and spacing them approximately 150 miles apart, the length of such a system can be extended almost indefinitely provided the transmission and crosstalk characteristics of the line are satisfactory.

When repeaters are not employed the Type C system can be arranged to operate with either manual or automatic regulation of the circuit net losses. When one or more repeaters are required the latter arrangement is always utilized.

#### Ringing

The C5 terminal is designed to operate with 1000-cycle ringer equipment. Any standard 1000-cycle terminal or intermediate ringer can be used. Western Electric 1000-cycle ringer oscillator equipment is recommended. Three of these units are required for each C5 terminal, one being used for each channel. The ringing equipment is not an integral part of the terminal and should be ordered separately.

#### Power Supply

The C5 terminal and the C1 repeater may be operated from either 24 and 130-volt office batteries or by the addition of suitable power supply equipment from a 105 to 125-volt, 50-60-cycle, a.c. source. In battery operated case about 6 watts of 55-volt, 50-60-cycle power is also required for the repeater, and a like amount for a terminal if the carrier pilot channel equipment is employed.

The C5 terminal or the C1 repeater can be obtained mounted complete on one relay rack bay. This bay may be  $8\frac{3}{4}$ ,  $10\frac{1}{2}$ , or  $11\frac{1}{2}$  feet in height. Additional relay rack space may be required for the associated equipment required.

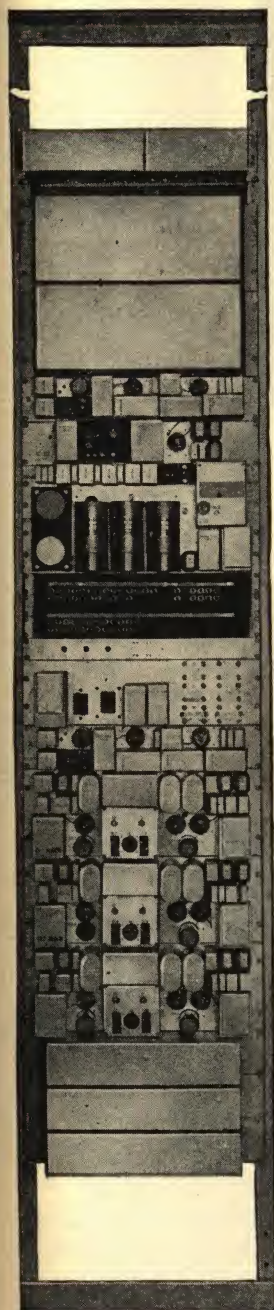
The selection of the apparatus required for a carrier system is dependent upon all the physical and electrical characteristics of the line on which it is to be placed. Such information should be forwarded to Graybar in a specially prepared questionnaire which can be obtained upon request. After the job has been studied, quotations and complete recommendations will be made on equipment to meet your requirements.

#### Type G1

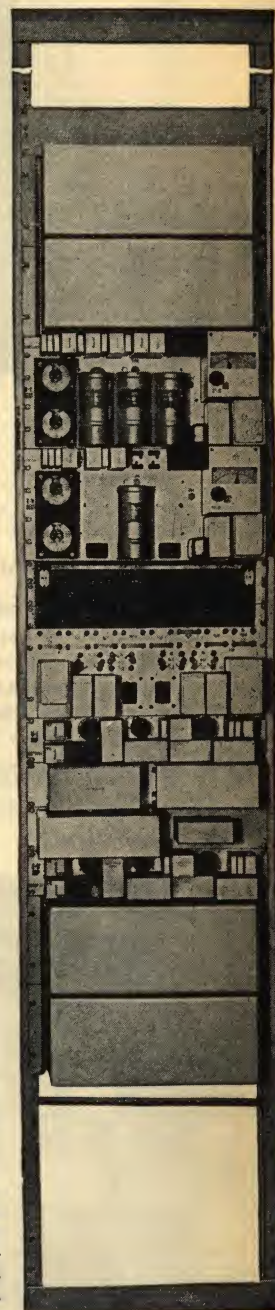
The Western Electric G1 Carrier Telephone System is a relatively simple and inexpensive single-channel system. The equipment is small in size and has been arranged for operation from an a.c. supply of 105-125 volts, 50-60 cycles.

The carrier frequency employed is 10.3 kc. It is generated by a vacuum-tube oscillator at one terminal only, which is called the active terminal. Both upper and lower sidebands are transmitted over the line and the carrier is transmitted along with them for use in modulation and demodulation at distant terminal which is called the inert terminal because it contains no vacuum-tube apparatus and requires no power supply. Transmission in the reverse direction is accomplished in the same way except for the fact that a phase corrector is required at the inert terminal.

For ringdown operation 20-cycle signaling is employed on a simplex basis. For cases where this is not feasible a simple composite set is available which provides two signaling paths, one for the carrier circuit and one for the voice circuit on which the carrier is superimposed.



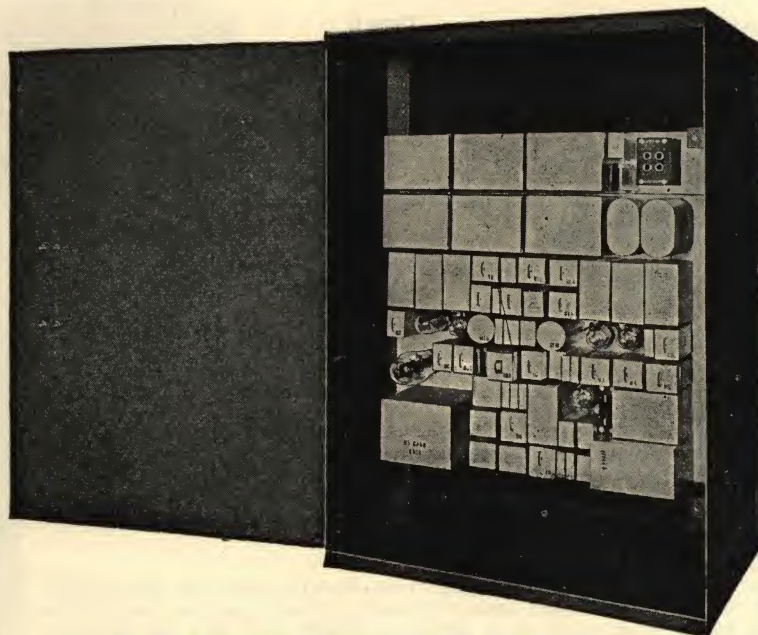
C5 Carrier Terminal



C1 Repeater



*Western Electric*  
No. H1 Type Carrier Telephone Systems



No. H1 Type Carrier Telephone—Terminal Panel, Line Filter, and Balancing Panel Mounted in Apparatus Cabinet

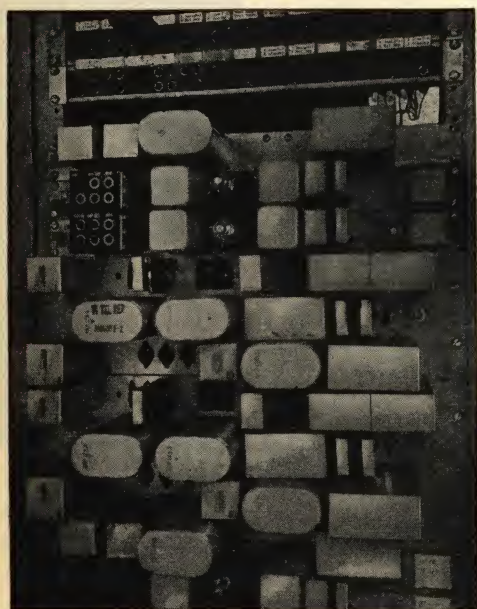
A single channel system for use on open wire lines.

Equipment includes provision for operation on a ring-down basis and can be applied on a line without the loss of any existing service. Suitable for use as a permanent installation, and also for temporary or emergency circuits. Typical applications are on the telephone lines of telephone, railroad, power, oil and pipe line companies where long distance telephone facilities are required.

The power supply may be either 105 to 125 volt, 50 to 60

cycles, single phase, a.c. or regular central office filament, signal and plate battery potentials.

This system, without an intermediate repeater, finds its widest application on open wire circuits of about 50 to 200 miles in length. With one or two intermediate repeaters this system is applicable on circuits up to as much as 500 or 600 miles in length, depending on gage of open wire conductors, amount of intermediate cable in line, number of bridged way stations, etc.



*Western Electric*  
No. V1 Telephone Repeater  
A.C. Operated

Designed to fill requirements for railroads and pipeline companies for trunkline or dispatch purposes.

When used as a toll line or trunk repeater, it may be equipped for various kinds of signalling (20, 135, or 1000 cycles) and may be operated on the same circuit with a telegraph channel when the necessary composite set is used.

Also provided with precision line balancing networks for use with uniform lines or adjustable networks for use with lines having non-uniform impedance characteristics.

When used as a dispatch repeater, it is equipped with a by-pass for the  $3\frac{1}{2}$  cycle signals of the train dispatching equipment and is not arranged for operation with telegraph or on a phantom group basis. The dispatcher repeater is limited to open wire use.

The power supply unit, the rectifier of the signal battery, and the ringing supply unit operate on a 105 to 125 volt, 50-60 cyclesource.

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.



## Western Electric Voice Frequency Loading Coils

### Available Voice Frequency Loading Coils and Loading Units for 2-Wire Telephone Circuits



M Type Loading Unit  
Phantom Group



No. 632 Loading Group

By the application of loading coils on telephone cable circuits the unit loss can usually be reduced to the order of one-third to one-fourth the non-loaded value. The reduction is less than this amount at low frequencies and more at high frequencies, resulting in a nearly constant loss at all important voice frequencies. This contributes to the fidelity of reproduction, which is dependent largely upon a uniform transmission of the various frequencies required for intelligibility and naturalness. The loaded circuit is superior to the non-loaded circuit with respect to both loss and transmission distortion.

The following table lists the code numbers of the individual coils and loading units which comprise the different classes and include their nominal design inductance values.

Class	Code No.	Nominal Inductance—Henry	Class	Loading Units	NOMINAL INDUCTANCES—HENRY	
					Each Side Circuit	Phantom Circuit
I-a	632	.088	II	MF1	.172	.063
	638	.044		MF3	.044	.025
	639	.022		MF4	.031	.018
I-b	643	.135		MF5	.031	.018
	644	.175		MF6	.031	.018
	645	.250		MF9	.088	.050
				MF10	.088	.050
				MF11	.088	.050

#### Loading Coil Cases

Potting arrangements for the loading coils and units listed are available for a wide range of installation conditions and circuit complement sizes.

When only a few loaded circuits are required, the small size of the non-phantom type coils make it especially economical to pot these coils in individual containers suitable for installation within cable splice sleeves in aerial and underground installations. For larger groups of non-phantomed circuits, up to about 100 Class I-a coils and 25 Class I-b coils, or for locations where conditions may be difficult for "Splice Sleeve" loading, low cost types of lead sleeve cases are available. These designs are suitable for aerial and underground installations. For larger loading complements, welded steel case designs are available; these differ in finish and minor installation details, for aerial and underground installations. Also, a limited number of case designs are available for small complement office installations on apparatus racks.

For phantom loading units, lead sleeve type case designs are available for 1, 2, and 3 loading units and welded steel designs provide for complements in the range of 4 to 80 loading units.

## Western Electric No. 1417 Type Magneto Telephones

A local battery magneto wall set arranged for anti-sidetone rural service. Equipped with high efficiency No. 635A transmitter and No. 706A receiver. Furnished with a shelf for writing.

The standard type telephone set operates on three dry cells and is equipped with a No. 48 type (5-bar) generator.

#### Equipment

Two or three batteries are required but must be ordered separately. In addition to the apparatus mentioned, telephone is equipped with the following:

Code No. 635A Transmitter  
Code No. 706A Receiver  
Code No. R2DW Receiver Cord  
Code No. 143Y Switch-Hook  
Code No. T1C Transmitter Cord (6 Inches)  
Code No. 113D Induction Coil  
Code No. 8A Transmitter Bracket

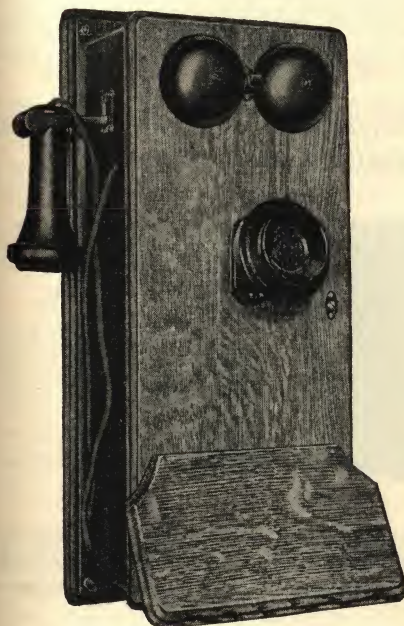
#### 3-Cell Type

Code No.	Code No.	RINGER—Resistance (Ohms)	Generator Code No.	Condenser Code No.	CLASS OF SIGNAL SERVICE Telephone to Central Office	Central Office to Telephone	Line Conditions as Regards Load
1417AH	38AG	1000	22A	*	Code	Code	Medium
1417N	38FG	1600	48A	...	Code	Code	Medium
1417P	38BG	2500	48A	...	Code	Code	Heavily
1417R	38FG	1600	48A	149E	Code	Code	Medium
1417S	38BG	2500	48A	149E	Code	Code	Heavily

#### 2-Cell Type

1417CH	53AG	1020	22BA	*	Code	Code	Lightly
1417CN	53FG	1620	50F	...	Code	Code	Medium
1417CP	53BG	2500	50F	...	Code	Code	Heavily
1417CR	53FG	1620	50F	149E	Code	Code	Medium
1417CS	53BG	2500	50F	149E	Code	Code	Heavily

\*Arranged for a No. 149E condenser which may be wired in the ringer or receiver circuit if desired.



3-Cell, Closed View

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.



## Western Electric Magneto Mine Telephones No. 1336 Type



No. 1336—Outer and Inner Doors Open

These are metal case magneto telephones having all apparatus and parts treated to resist the action of moisture. Primarily designed for use on heavily loaded lines where code ringing is employed. Intended chiefly for mine service where danger from explosive gases is not present. Also recommended for outdoor use.

**DRY CELLS.** Two standard size dry cells are required for each telephone to furnish current for talking.

Two special cartons, impregnated with moisture-proofing compound are furnished with each No. 1336 type telephone. These are to be substituted for the standard cartons furnished

with the dry cells. These cartons resist the action of any moisture that may form on the inside of the case and prevent current leakage and rapid deterioration.

No. 1336A. This telephone is not equipped with a ringer as it is intended for use where an extension bell is preferred to the regular telephone ringer. Also for service where all the calls will be outgoing.

Nos. 1336E and 1336K. These telephones differ from the No. 1336A in that they are equipped with a ringer and an iron hood for protecting the gongs.

No. 1336J. This telephone differs from the No. 1336E only in that a condenser is provided to permit the ringers of this telephone as well as others on the same line, being rung even though its receiver may have been left off the switchhook.

Transmitter No. 647 type. Receiver No. 706. Generator No. 48C.

Code No.	Receiver Cord	Condenser	RINGER Code No. Resistance		Signaling Service	For Line Load
1336A	R2DW	None	None			
1336E		None	45BG	2500	{ Code Ringing }	{ Heavily Loaded }
1336J	15-In.	149A	45BG	2500		
1336K		149A	45FG	1600		

In addition to the apparatus listed above the No. 1336 type telephone is equipped with a No. 143J switchhook and a No. 31 induction coil.

Special No. 1336 type telephones equipped with a heavy brass padlock and with two keys are obtainable. The padlock is attached to the chain in place of the latch pin. Orders must state that padlocks are desired.

### No. 1536E Explosion-Proof Mine Telephone

This type of telephone is for use in mines where explosive gas is present. In the words of the United States Bureau of Mines the Western Electric Mine Telephone Type No. 1536E "is permissible for use in mines or other locations where methane or other explosive gases or coal dust are or are likely to be present in dangerous proportions."

This telephone set is enclosed in a cast iron housing  $8\frac{7}{16} \times 11\frac{1}{4} \times 17\frac{1}{2}$  inches having a sloping roof and a hood extending out from the top of the door. These two features protect the working parts of the set from damage by falling debris and facilitate the shedding of water. This

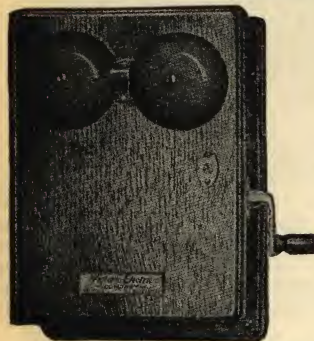


Closed View

construction permits mounting the transmitter, receiver and generator-handle entirely exposed on the door but under the protection of the hood. The set is therefore under all conditions immediately recognizable as a telephone.

The design of this set safeguards against the explosions which might result from the sparking of the switchhook and generator shunt spring contacts. Safeguards against explosions due to sparking caused by poor or loose connections also have been incorporated and every precaution has been used to guard against mechanical injuries to coils and other parts which might later develop into sparking points.

## Western Electric Subscriber Magneto Desk Set Boxes



### No. 300 Type with No. 48 Type Generators

With ringers to operate on a.c. for code ringing service between central office and telephones.

Used with desk stands and No. 250 type telephone sets.

## Western Electric No. 684BA Subscriber Sets



A small anti-sidetone common battery subscriber set intended for use in two party selective or four party semi-selective flat rate service in dial areas subject to inductive interference.

Ringer No. B1AL; condenser No. 195A; and induction coil No. 101A. (The No. B1AL ringer is equipped with one No. 41A and one No. 41B gong).

Code No.	COMPOSED OF			Condenser No.	For Ringing Service	Used on Lines as Regards Load
	Generator No.	Ringer No.	Resistance Ohms			
300K	48A	*51BG	2500	....	Code	Heavily
300L	48A	38FG	1600	....	Code	Medium
300M	48A	38FG	1600	149A	Code	Medium
300N	48A	38BG	2500	149A	Code	Heavily

\*No. 38BG ringer can be furnished when specified.

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.



## Western Electric

### No. 302 Type Central Battery Telephone Sets



No. 302AW-3



No. 302BW-3

The combined telephone set consists of a housing and a base on which is mounted the induction coil, condenser, ringer, and other apparatus. Telephone set mounting and a hand set form the complete telephone set.

Intended for use in common battery service.

Nos. 302AW-3 and BW-3. For individual line, P.B.X. extensions, and bridged stations.

Nos. 302EW-3 and FW-3. For 2-party selective and 4-party semi-selective stations, and divided code ringing.

The suffix -3 refers to a black finish telephone set.

Code No.	Tel. Set Mounting	Dial No.	Dial Adapter No.	Apparatus Blank No.	§Cords	Hand Set
†302AW-3	H1-3	.....	.....	82A-3	¶D2D-9	F1AW-3
*†302BW-3	H1-3	5HA-3	59A	.....	¶D2D-9	F1AW-3
†302EW-3	H1-3	.....	.....	82A-3	¶D3AL-9	F1AW-3
*†302FW-3	H1-3	5HA-3	59A	.....	¶D3AL-9	F1AW-3

\*When specified can be equipped with No. 61P filter to suppress dialing induction into radio receiving sets.

†For use at manual stations. ¶For use at dial stations.

§Cords are 5½ feet long. Can be obtained in 9, 13, and 25-foot lengths when specified in the order.

¶When specified No. D2E-9 cord assembled with No. 273A plug can be obtained instead of No. D2D-9.

¶When specified No. D3AD-9 cord assembled with No. 273A plug can be obtained instead of No. D3AL-9.

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.

## Western Electric

### No. 250 Type Telephone Sets



With proper connections this set can be in common battery dial on manual areas.

Each set consists of an F1AW-3 hand set, an AA1-3 telephone set mounting, and the necessary cords and wiring. Each set requires a suitable subscriber's set associated with it in order to complete the station equipment.

Code No.....	250AW-3	†250BW-3
Dial No.....	.....	5HA-3
Dial Adapter No.....	.....	59A

Apparatus Blank No.....	82A-3	.....
-------------------------	-------	-------

‡Cord No.....	D4AL-9	D4AL-9
---------------	--------	--------

†When specified in order, set can be obtained equipped with No. 61P filter to suppress dialing induction into radio receiving sets.

‡Cords 5½ feet long furnished unless otherwise ordered. Available in 9, 13, and 25-foot lengths. If cord equipped with plug is desired, specify D4W-9 cord and 283B plug.

### No. 251 Type Telephone Set

Same as the No. 302 type except that it is furnished without ringers and provided with a special ringer mounting for a Stromberg-Carlson No. D-2993 harmonic ringer.

Code No.....	251AW-3	251BW-3
Color.....	Black	Black
Used for.....	Manual Systems	Dial Systems

## Western Electric

### Hand Set Telephones

#### No. 1011A



For installer's and repairman's use in manual areas. Consists of soft rubber handle containing the following:

- No. F1 Transmitter Unit
- No. HAI Receiver Unit
- No. W2BT Cord, 4 Ft. Long, Connected Externally
- Condenser (.10 Min., .15 Max. Mf.)
- Talking and Monitoring Switch
- Apparatus Blank

The switch is connected so as to shunt out the condenser when in the talking position.



## Western Electric Central Battery Telephone Sets

### No. 300 Type—For Outdoor Use



Closed View

For outdoor use in anti-sidetone equipment in manual or dial service. Consists of a gray finished metal mounting in which induction coil, ringer, and condensers are assembled. A moisture-proofed handset is hung on a switch hook which is assembled to inner door. Inner door provides a method of mounting dial or apparatus blank. Outer door is fastened by means of a lock and has an instruction card holder welded to its inside surface.

A No. 29A bracket is required for use in mounting each of the telephone sets on buildings, fences, poles, etc., and must be ordered separately.

Approximate overall dimensions: height, 1 foot 1 inch; width, 9 inches; depth, 6 $\frac{1}{4}$  inches.

### No. 320 Type



Intended for use in Class 1, Groups B, C, and D atmospheres, as defined by the National Electrical Code.

The component parts of this set, except the hand set, are contained within an enclosure consisting of a cast aluminum housing and base having a threaded joint. Protection against probability of flames resulting from internal explosion reaching surrounding atmosphere is accomplished by strength of castings and by controlling length and clearance of openings through which any element in the design is brought through the housing.

Intended for use in common battery systems and for individual lines.

## Western Electric Connecting Blocks

### No. 8A



One screw and cord tip terminal on each connector.  
Number of connectors, 6.  
Ebonized wood base: length, 5 inches; width, 1 inch; thickness,  $\frac{5}{8}$  inch.

### No. 11 Type



No. 11A

Two screw terminals on each connector. Opposite terminals electrically connected.  
Base: length, 1 $\frac{1}{2}$  inches; width, 1 $\frac{1}{2}$  inches; thickness,  $\frac{1}{16}$  inch.

Code No.....	11A	*11B	†11C
No. Connectors.....	2	2	2

\*Consists of No. 11A with black finished metal cover.

†Same as No. 11B except under-surface of top of cover has insulating strip to protect terminals from short circuits.

### No. 12 Type



No. 12E

Same as No. 11 Type except has three slots in under side of base.

Base: length, 1 $\frac{1}{16}$  inches; width, 1 $\frac{1}{8}$  inches; thickness,  $\frac{1}{16}$  inch.

Code No.....	12E	†12F
No. Connectors.....	3	3

†Consists of No. 12E with black finished metal cover.

### No. 30 Type



Binding posts have locknuts with posts spun over to prevent loss of locknuts.

Composition base: width, 1 $\frac{1}{2}$  inches; thickness,  $\frac{1}{2}$  inch.

Code No.....	30A	30B	30C	30D
No. Connectors.....	12	22	32	52
Length Base..... inches	4 $\frac{3}{16}$	7 $\frac{1}{16}$	10 $\frac{7}{16}$	16 $\frac{1}{16}$

### No. 31 Type



Each connector has one locknut binding post and one soldering terminal, brought out on the side.

Composition base: width, 1 $\frac{1}{2}$  inches; thickness,  $\frac{1}{2}$  inch.

Code No.....	31A	31B	31C	31D
No. Connectors.....	12	22	32	52
Length Base..... inches	4 $\frac{3}{16}$	7 $\frac{1}{16}$	10 $\frac{7}{16}$	16 $\frac{1}{16}$

### No. 42A Type



Cover Off

For use with combined handset mountings for fastening the handset mounting cord and the inside wire. Has a removable metal cover.

Composition base: length, 1 $\frac{1}{16}$  inches; width, 1 $\frac{1}{16}$  inches; thickness,  $\frac{1}{32}$  inch.

No.....	42A-4	42A-9
Color.....	Ivory	Brown

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.



## Western Electric Telephone Cords

There is a Western Electric cord to fit any telephone set or switchboard. If none of the cords described below meet your requirements, write us, sending if possible a sample cord or a sketch, paying particular attention to the kind of tip required. Always specify length of cord when ordering.

### Desk Stand Cords

Code No.	Maker of Tinsel Conductor	Covering	Length Feet	Use
D2D9	2	Cotton	5½	302 Type Combined Tel. Set
D3AK9	3	Cotton	5½	Desk Stands, B1—Hand Set Mounting
D4AL9	4	Cotton	5½	302 Combination Telephone Sets Hand Set and Desk Stands

### Hand Set Cords

H3AA9	3	Cotton	4	E1 and F1 Hand Set
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### Switching Cords

S2A	2	Cotton	3, 4, 6 or 8	All Type Boards
S3B	3	Cotton	4, 5, 6 or 8	

### Operators Cords

L4B	4	Cotton	...	Head & Chest Sets
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### Receivers Cords

R2CE	2	Cotton	2½	40P Transmitter Arm
R2DW	2	Cotton	3	144 and 706A Receiver
R2EY	2	Cotton	3	706 Type Receiver
R2FA	2	Cotton	2	716 Type Receiver

## Western Electric Tubular Fuses

### Fiber Shell Type

Lead fuse wire prevents possibility of overheating shell. Fuses carry rated currents indefinitely without injury; act reliably on one and one-half times rated values.

Fuses of same code number and rated capacity give consistent performance as to rated and operating current values.

### No. 7T



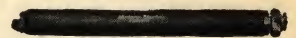
Used with B cable terminals and fuse chambers. Rated capacity, 7 amperes.

### No. 11C



Used with Nos. 98A and 1079AP protectors. Rated capacity, 7 amperes.

### No. 7A

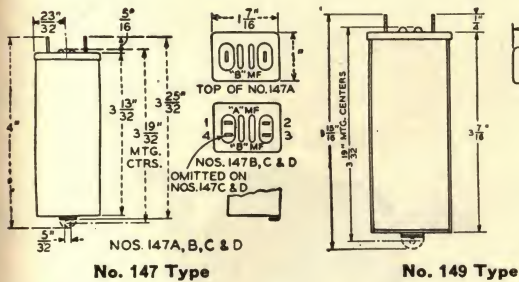


Used with Nos. 77, 1074A, 1075A, and 1078A protectors. Rated capacity, 1, 2, 3, 4, 5, or 7 amperes, as specified.

## Western Electric Condensers

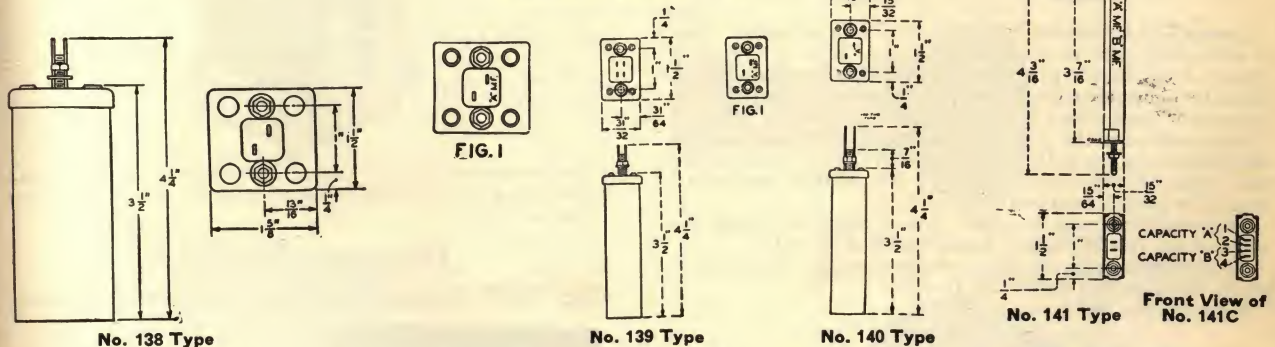
Western Electric telephone condensers are of tinfoil and paper type. Paper dielectric used in separating tinfoil plates is prepared from selected stock.

### Unmounted Type



Tested on 500 volts d. c.

### Mounting Plate Type



Code No.	Fig. No.	CAPACITY M.F.				Tested on Voltage
		Minimum	STAMPED ON CONDENSER AT		Maximum	
138A	1	1.00	A	B	1.25	1000 A.C.
139A	1	2.00	2.00	...	2.50	500 D.C.
140B	.	.50	.50	...	.62	1000 A.C.
140E	.	.125	.125	...	.160	1000 A.C.
141A	.	1.00	1.00	...	1.25	500 D.C.
*141C	{	.50	.50	...	.625	500 D.C.
		.50	...	.50	.625	
141D	.	.25	.25	...	.32	500 D.C.
141J	.	.125	.125	...	.16	500 D.C.

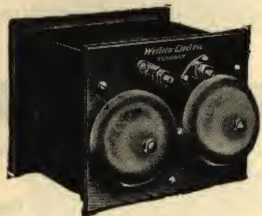
\*Values stamped at "A" are measured between terminals 1 and 2; values at "B", between terminals 3 and 4.

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.



**Western Electric****Subscriber Extension Bell Sets**

Intended for auxiliary use as extension bells in connection with wall, desk, and transmitter arm telephones.

**No. 127 Type**

Set consists of a ringer mounted on the cover of a box. Each set is equipped with No. 2A binding posts for making line connections.

Operating current, a.c., not biased.

Golden oak finish.

Approximate overall dimensions: width, 6½ inches; height, 5⅞ inches; depth, 4⅞ inches.

Code No.....	127F	127G
Ringer.....	38BG	38BG
Approx. Resist.....ohms	2500	1620

**No. 592 Type—Loud Ringing**

Consists of a die-cast base upon which is mounted: what is essentially the mechanism of a No. B1A or No. B3A ringer; a condenser (when required); two No. 26B (3-inch diameter) gongs; and suitable terminals for connecting the subscriber set in the telephone circuit.

Resonators for the gongs are cast as an integral part of this base. The set is intended for both indoor and outdoor use. For indoor installations, the No. 169AW backboard should be used for mounting the set.

Also available with No. 42A (4-inch diameter) gongs instead of the No. 26B gongs when specified on order.

Approximate overall dimensions: length, 7¼ inches; width, 6⅞ inches; depth, 2⅞ inches.

Replaces No. 392 type.

No.	Con- denser	D.C. Resistance, Ohms	Vacuum Tube	Use
592AW	198A	4600	.....	In Manual or Dial Lines, in Individual Two-Party Selective and Four-Party Selective Line Service.
592BW	.....	4600	.....	On Magneto Non-Polarized Ringing Lines.
592CW	.....	2000	359A	In Four-Party Full Selective and Eight-Party Semi-Selective Service.

**Western Electric****Hand Generators****No. 48 Type****No. 48A**

A powerful generator. Used in telephones for heavily loaded line service.

With a non-inductive load of 1500 ohms and an armature speed of 1025 rpm., this generator will give 80 volts a.c.

Code No.	Voltage	Normal Condition of Generator Circuit	Principal Use and Description
48A	80 A.C.	Closed	Standard for Telephones Intended for Use on Heavily Loaded Lines
48C	80 A.C.	Closed	Mine Telephone — All Parts are Treated to Resist the Action of Moisture and Fumes
48G	80 A.C.	Closed	No. 1800 Switchboards
48H	80 A.C.	Open	Switchboards
48J	80 A.C.	Open	No. 1800 Switchboards
48P	80 A.C.	Open	Switchboards

**No. 50 Type**

Delivers 60 volts a.c. under a 1500-ohm non-inductive load (after being short-circuited for ½ minute) and an armature speed of 1025 rpm.

**Western Electric****No. 299F Subscriber (Hand Generator) Sets**

Consists of a No. 48A generator mounted in an oak cabinet having a hinged cover.

For alternating current.

Width, 8 inches; depth, 6 inches; 9 inches.



## Western Electric

### No. 98 Type Telephone Set Protectors



Protects central battery and magneto telephones against high potential (lightning) and abnormal current (crosses with electrical circuit).

Has two No. 11C fuses. Line protection, 2 wire.

Code No. .... 98A 98B  
With Two Protector Blocks, Nos. ... 26 and 27 26 and 30

## Western Electric Protector Blocks



No. 26



No. 27

Ordinary lightning discharges will cause an arc across the air gap between the carbon blocks but will not heat them sufficiently to melt the cement used for holding the carbon plug in place. A cross with an electric light or power line, however, will cause a discharge or repeated discharges of such duration that the heating of the carbon insert of the No. 27 blocks will melt the cement holding it in place. This allows the mounting spring to push it into direct contact with the No. 26 block, thus permanently grounding the line.

**No. 26.** A solid piece of hard non-dusting carbon. Used with Nos. 27 and 30 type protector blocks.

**No. 27.** Used in central office protectors. Consists of a white porcelain frame with a countersunk hard carbon plug fastened in place with low temperature fusing cement.

## Western Electric Accessories

**JACKS.** Welded frame or cast, single or multiple mounting, single or multiple springs for use with standard Western Electric plugs are available for all purposes.

**KEYS.** Push button or lever type with practically any spring combination can be supplied.

**PLUGS.** Single or multiple, 1, 2, or 3-conductor for use with jack can be supplied.

**RELAYS.** Many types and innumerable spring combinations for low voltage work can be supplied.

**RESISTANCES.** Inductively and non-induction on brass core, single and double wound on Miconite core, spool type of various values and Lavite core types can be supplied.

**TELEPHONE WIRES.** Textile insulated, lacquer treated in 14, 16, 18, 19, 20, 22, 24 gage, single, paired, triple, and quadruple. In various colors for all low voltage work.

## Western Electric Protector Mountings

No. 83A

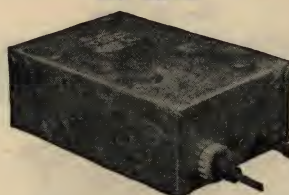


Protects drop wires between overhead lines and subscriber's telephone set from lightning.

Consists of an iron box  $8\frac{3}{4} \times 3\frac{1}{2} \times 2\frac{1}{2}$  inches with a hinged cover having a No. 84A protector mounting within it. Arranged for pole mounting. Intended to be equipped with Nos. 26 and 30 protector blocks for cable protection for five pairs of wires. Box mounted underneath crossarms on poles. Two mounting lugs are provided for this purpose.

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar Office.

## Western Electric Protector Mountings No. 93AW



Consists of a galvanized metal box having a slip cover with locking screws and two screws for mounting protector in box. Cover includes a shield of insulating material which protects line terminals from gases expelled during fuse operation. For use in housing No. 98A protector in outdoor installations. When equipped with a No. 98A protector entirely replaces the No. 1086A protector and is coded the 1093AW protector mounting.

Overall dimensions,  $7\frac{3}{4} \times 5\frac{1}{2} \times 2\frac{1}{8}$  inches.

## Western Electric Receivers No. 716 Type



No.	Receiver Unit	Receiver Holder	Receiver	Head-band	Use
716C	HA4	11	.....	* ....	Waystations in Train Dispatching Systems
716D	....	..	716A	11A	Common Battery Circuits
716E	....	..	716B	11A	Local Battery Circuits

\*Used with No. 11A headband which must be ordered separately.

No. 706A



Consists of a moulded case with HA-1 receiver unit. Springs for making electrical contact with receiver unit and a cap for holding unit in place are provided.

## Western Electric No. 635A Transmitters

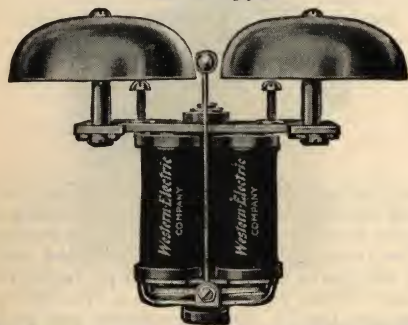


Designed to permit the use of the high quality F1 transmitter unit in desk stands and wall sets. Furnishes a better grade of transmission than older desk stand transmitters using a carbon button.



## Western Electric Ringers

No. 38 Type

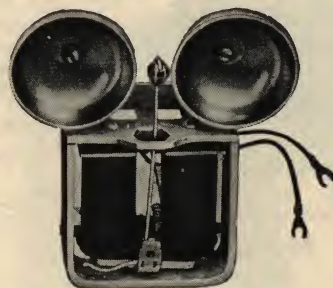


Western Electric Company ringers are wound with black enamel wire of Western Electric manufacture. Designed to give maximum ringing efficiency and at the same time offer high impedance to voice currents.

The gong posts are designed for engaging slotted gongs thereby assuring permanent gong adjustment.

Code No.	Ringer Code No.	Resistance Ohms	Biasing Feature	Current Adjusted for	Gong Posts Woodwork		Code No.	Gongs Diam. In.
					Length In.	Thick. In.		
38BG	38B	2500	None	A.C.	1 37/64	5/8	26A	3
53AG	53A	1020	None	A.C.	1 1/16	5/8	29A	2 1/2
53BG	53B	2500	None	A.C.	1 1/16	5/8	29A	2 1/2
53FG	53F	1620	None	A.C.	1 1/16	5/8	29A	2 1/2

No. B1AL



A unit type biased ringer intended for use in H1 type telephone set mountings. Has a cantilever type biasing spring arranged for three settings and a stroke adjusting stop for adjusting the sound output.

Equipped with one No. 41A and one No. 41B gong. Can also be obtained equipped with two No. 40C or one No. 40D and one No. 40E gong when specified on the order. These ringers can also be obtained with a wooden clapper (P-465312) instead of a metal clapper, when specified in the order.

Has two coils having a total d.c. resistance of 4600 ohms  $\pm 10\%$ . The 900-cycle inductance is minimum 20 henries.

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.

## Western Electric

### No. 551 Type P.B.X. Private Branch Exchange Switchboards

No. 551A



A switchboard of the single position, non-multiple type. Arranged for operation with either a manual or a dial central office.

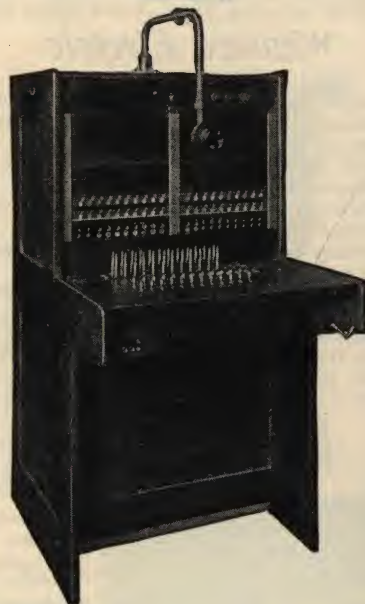
Switchboard in either oak with natural finish or in mahogany with a mahogany-walnut finish. Lumber is kiln dried and thoroughly seasoned to prevent warping and cracking.

#### Capacity

Station Line Circuits.....	40
Trunk Circuits.....	10
Cord Circuits.....	10

Ten station line circuits may be equipped with line relays for long lines.

No. 551B



Similar to the No. 551A except has larger capacity, as follows:

Station Line Circuits.....	320
Trunk Circuits.....	15
Cord Circuits.....	15

Twenty of the station line circuits may be equipped with line relays.

This switchboard has a maximum capacity of 320 lines but may be had with a capacity of eighty lines, the different capacities being arranged for by the use of different local cables.

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.



## Western Electric

### No. 1801 Private Branch Exchange Switchboards Sectional Unit Type



No. 1801 Switchboard  
Showing Method of Enlarging



No. 1801 P.B.X. Switchboard System B,  
Wall Mounted with Cord Casing



No. 1801 P.B.X. Switchboard System D,  
Desk Mounted

The Western Electric No. 1801 P.B.X. is a manual central battery system utilizing a small single position, non-multiple switchboard of the sectional unit type.

Suitable for use in medium-size industrial plants, department stores, apartment buildings, schools, hospitals, sanitariums, hotels, and public buildings.

May be used with either a dial or a manual central battery central office. It is flexible and economical in operation, particularly suited to locations where the final capacity cannot be determined initially and is readily adaptable to the diversified line and traffic conditions encountered on private branch exchanges.

The units which comprise the No. 1801 P.B.X. can be assembled in the same way as those of a sectional bookcase.

The wood may be either oak in full red oak finish, or birch in mahogany finish.

#### Equipment Arrangements

The following four equipment arrangements are available:

SYSTEM A. Communication between attendant and stations.

SYSTEM B. Communication between attendant and stations.

Intercommunication between stations.

SYSTEM C. Communication between attendant and stations.

Intercommunication between stations. Trunk lines to a central battery central office. Direct current ringing.

SYSTEM D. Similar to System C, except that station bells are rung with alternating current and the trunks of System D may be connected into either a dial or a manual central battery central office.

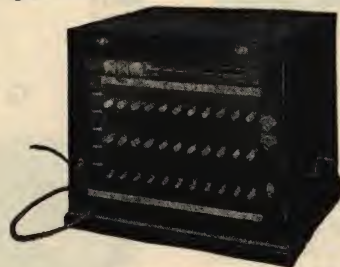
#### Power Requirements

Since the quality of service obtained from a P.B.X. is affected materially by the efficiency of the power supply, power equipment designed particularly for this kind of service should be selected.

For talking, signaling, and direct current ringing, the No. 1801 P.B.X. requires a 20-28-volt, single battery supply. The 20-cycle alternating current ringing current required for System D may be obtained from a source outside the P.B.X. or at the P.B.X. by the use of a hand generator.

## Western Electric

### No. 506 Type Cordless P.B.X. Switchboards



No. 506A

A single position turret of the cordless type. All connections are made by operation of keys.

Circuits are arranged for local manual service and for operation into either manual or machine switching central

offices. The wiring and equipment are same for all systems.

A desk stand is provided for use of attendant. When required a dial is furnished with desk stand so connections can be made to a dial central office.

Code No.	Capacity	506A	506B
Positions.....		1	1
Trunk Circuits.....		3	5
Connecting Circuits.....		5	5
Station Line Circuits.....		7	12
Attendants Telephone Circuit.....		1	1
Ringing and Buzzer Circuit.....		1	1

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.



### Western Electric No. 301A Portable Telephone Sets



For applications where a portable magneto telephone of rugged construction is required.

Set consists of a hand set and an aluminum chassis on which are mounted a hand generator, an induction coil, condenser, two battery containers, and a ringer mounting bracket. Assembled chassis is mounted in black fiber, wood-lined carrying case equipped with shoulder strap.

The F3CW-3 handset includes No. F1 transmitter unit and No. HA-1 receiver unit. A push-button switch in handset handle is used to set up the talking condition.

A ringer may be mounted in this set if one is desired; specify when ordering.

Four Type D, 1.5-volt dry cell flashlight batteries are required for operation. The low battery drain of the transmitter unit insures a long battery life. The batteries should be specified on the order if desired.

### Western Electric No. F1AW-3 Type Hand Sets



No. F1AW-3. For use with and forms a part of the No. 302 type combined telephone set. For general use at subscriber stations.

Consists of: No. F1 transmitter unit; No. HA1 receiver unit; No. H3C-9, 4-foot cord; No. F1W-3 hand set handle; No. P-456236 receiver cap; No. P-456235 transmitter cap.

No. F2AW-3. For use in central offices and P.B.X. systems. Similar to No. F1AW-3 except with 4-conductor cord terminating in twin plug. Replaces the No. E2A-3.

Consists of: No. F1 transmitter unit; No. HA1 receiver unit; No. H4U cord; No. 289A plug; No. F2W-3 hand set handle; No. P-456236 receiver cap; No. P-456235 transmitter cap.

No. F2BW-3. For use in anti-sidetone local battery talking, common battery signaling subscribers' stations in manual and dial areas, and in key cabinets. Similar to No. F1AW-3 except that it employs a 4-conductor cord.

Consists of: No. F1 transmitter unit; No. HA1 receiver unit; No. H4T-9 cord; No. F2W-3 hand set handle; No. P-456236 receiver cap; No. P-456235 transmitter cap.

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.

### Western Electric Portable Test Sets No. 1017C



No. 1017 Type

In birch mahogany finish case; length,  $6\frac{5}{8}$  inches; width,  $4\frac{7}{16}$  inches; height,  $8\frac{1}{16}$  inches. Weight, 7 pounds.

No. 1017E

Similar to No. 1017C set except equipped for use on either composited or straight telephone lines.

Contains the following:

- |                       |  |
|-----------------------|--|
| *No. 29F Generator    | No. 714 Eveready Battery                                 |
| No. 2E Buzzer         | (must be ordered separately)                             |
| No. 716B Receiver     | No. R2CD Cord, 2 feet                                    |
| No. 13 Induction Coil | No. 6000A Interrupter                                    |
| No. 649A Transmitter  | *Operates a No. 56A drop through 11,500 ohms resistance. |



No. 90530

List No.	Generator No.	RINGER		Gen. Operates Ringer Through Ohms
		Type	Ohms	
90530	22K	19B	2500	10,000
90510	22K	19H	500	35,000
90511	22N	19A	1000	50,000
90512	22N	19B	2500	100,000

Nos. 90510 to 90530

Consists of a generator and ringer in series for testing through various line resistances.

Birch finished case measures  $5\frac{3}{4} \times 6\frac{3}{8} \times 5\frac{1}{4}$  inches. A leather strap handle is provided.

### Western Electric G Type Handset Mountings



Arranged for use with the Nos. F1AW and F2BW or similar type hand sets.

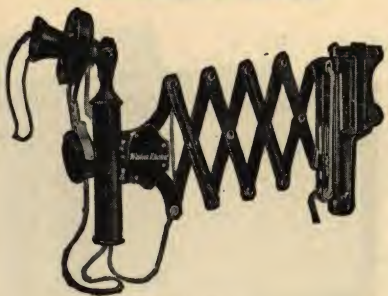
Equipped with a bracket designed to permit adjustment of mounting to various lengths of desk top overhang. Bracket also permits mounting to be secured for hand set to hang on either side of the mounting or in front of the mounting.

Cardretainergroup P298106 must be ordered separately.



## Western Electric Railway Train Dispatching Telephone Systems

### Transmitter Arms



No. 1148DD

**No. 1148 DA.** Adjustable folding arm having telephone set incorporated in it; includes one No. 48DA transmitter arm, one No. 635B transmitter, one No. 716B receiver equipped with a No. 11A headband, one No. R2CT cord (2½ feet), one No. D3AB cord (8 feet), and two No. T1C cords (9½ inches); mounts on the side of a roll top desk.

**No. 1148DB.** Same as No. 1148DA, except that it is arranged to mount on the side of a flat top desk.

**No. 1148DC.** Same as No. 1148DA, except that it is arranged to mount on the top of a flat top desk.

**No. 1148DD.** Same as No. 1148DA, except that it is arranged to mount on a wall.

Intended for use in way stations in conjunction with Nos. 501A and 501B subscriber sets in train dispatching circuits.

### No. 650B Transmitters

Chest type transmitter intended for use in local battery circuits in train dispatching systems.

Contains an F2 transmitter unit.

Used with a No. 716B receiver and a No. 11A headband.



### Transmitter Attachments

Used for supporting chest type transmitter.

**No. 2A.**—Buckle only.

**No. 3A.**—Buckle and slate colored tape.

**No. 3B.**—Buckle and black colored tape.

**No. 3C.**—Buckle and white colored tape.



No. 3A

### Repeating Coils Nos. 70A and 77A



No. 70A



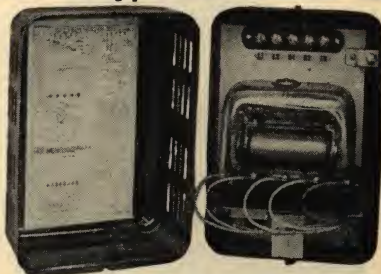
No. 77A

Intended for use in phantom and simplex circuits. No. 70A is for use in connection with a.c. selectors. No. 77A has coil mounted on a wood base.

	70A	77A
No. of Coils.....	1	1
No. of Windings Each Coil.....	4	4
Resistances, Ohms:		
Primary.....	2 of 45	2 of 20
Secondary.....	2 of 40	2 of 21
Impedance Ratio.....	1 to 1	1 to 1
Wood Base.....inches	11x8½	6x4

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.

### No. 162 Type A.C. Selector Sets



No. 162C Equipped with No. 60 Type Selector

For new installations. Replaces the No. 160 type.

Furnished in two models, both of which are identical in appearance and size, the components being mounted on a steel chassis which is housed in the metal backs, 9¾ inches high, 7 inches wide, and 6½ inches deep.

Finished in black and arranged for wall mounting.

**No. 162C** is for use at way stations in circuits which are not operated through repeating coils.

**No. 162R** is for use at way stations in circuits operated through repeating coils.

Mounting facilities are provided for the No. 60 type selector, which, however, is not furnished as part of the set because varying conditions require the use of different models of this unit. Includes features that permit their use in train dispatching, telephone systems employing Type C & H Carrier telephone equipment.

### No. 341A Transformers



Designed for use at a train dispatcher's station when the No. 60 type selectors on dispatching and message circuits are operated through transformers.

Especially designed to transmit low frequency selector impulses on long lines on which a large number of selectors are operated.

Approximate dimensions, 6x5x5½ inches.

### Foot Switches



No. 1B

Consists of a black finish case with a foot pedal and a set of contact springs.

Dimensions: 7½x3¾x5½ inches, including foot pedal.

**No. 1B.** Used with No. 502A Subscriber Set at train dispatching stations. Has single make contact for connecting battery to transmitter for talking.

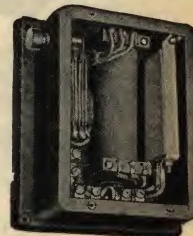
**No. 3B.** Used with No. 502A Subscriber Set at train dispatching stations. Has one break and two make contacts and is used with loudspeaker.

**No. 3C.** Used with No. 501B Subscriber Set at way stations. Has two break and three make contacts for connecting battery to transmitter, for talking, and for changing the turn ratio of the induction coil to increase the efficiency of the subscriber set when transmitting and receiving.

**No. 3D.** Used with No. 501B Subscriber Set at waystations. Has two break and four make contacts and is used when a loudspeaker set is connected to the subscriber set.

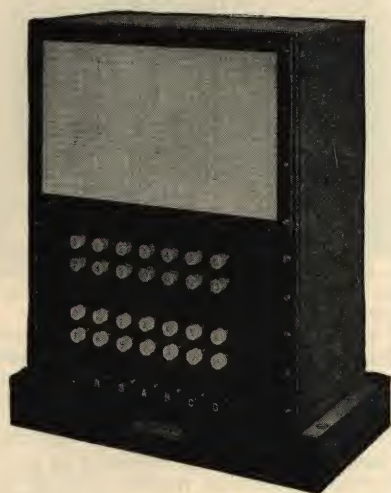
### Way Station Desk Set Boxes

Used on train dispatching circuits in way station telephone sets with desk stand, flexiphones or transmitter arm, equipped with No. 635B transmitter and No. 716 type receiver.

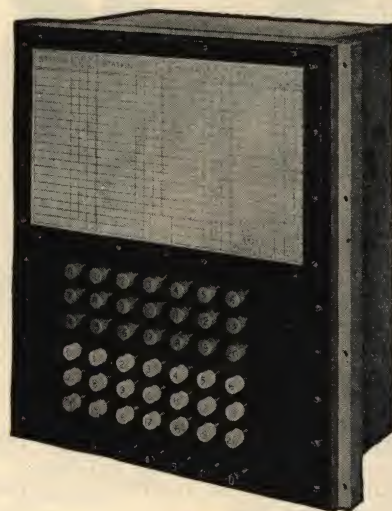


No.	Con- denser	Induction Coil	Description
501A	142B	42	Equipped with One No. 1014A Push Button
501B	142B	42	Arranged for No. 3C Foot Switch



*Western Electric*
**Railway Train Dispatching Telephone Systems  
Selector Keys**


No. 62A



No. 63B

The Nos. 62 and 63 type selector keys are motor driven master calling keys designed to operate any one or all No. 60 type selectors in a train dispatching telephone system.

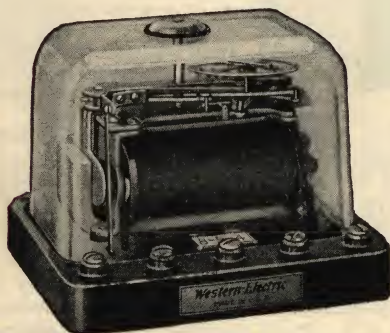
No. 62 type is arranged for desk or table mounting.

No. 63 type is mounted in the face equipment of a No. 604 P.B.X. switchboard.

Available in two models of each type, the A model being

intended for use in systems using a 17 step selector signalling code and the B model for use in systems using a 27 step selector signalling code.

Code No.....	62A	62B	63A	63B
Approx. Height.....inches	12½	12½	10½	10½
Approx. Width.....inches	10¼	10¼	9¾	9¾
Approx. Depth.....inches	6½	6½	6¼	6¼

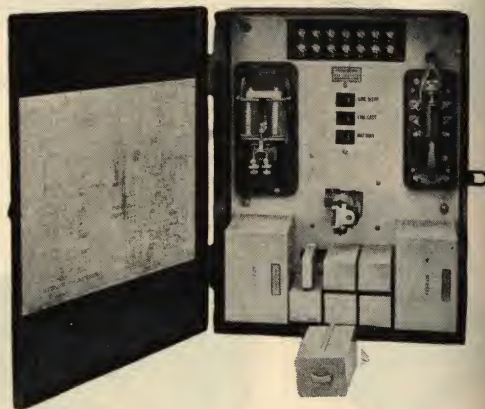
**Nos. 60AP and 60BP Selectors**

Operates on alternating current and is designed for use at waystations in train dispatching telephone systems in conjunction with Nos. 162C and 162R selector sets.

No. 60AP and 60BP selectors are designed to operate in a system using 17 or 27 step selector signalling code. The 60AP is equipped for receiving time signals.

No. 60BP is equipped with four selective ringing terminals instead of one as in No. 60AP but is not equipped to receive time signals.

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.

**No. 62B Selector Apparatus Cases**

Designed for use at the dispatcher's office in a train dispatching telephone system, and contains all of the signalling apparatus required at this station except the selector keys which are mounted separately.

Consists of a black finished metal box measuring 12¼x15¼x6½ inches, equipped with a hinged cover and latch and a metal chassis on which the component apparatus is mounted.

Arranged for wall mounting.



## Burgess Acousti-Booths

Acoustic Doorless Telephone Booths

### No. 601 Scout Shelf Type



A wall or shelf type booth for use in bus terminals, hotels, hospitals, stores, railway stations, banks, institutions and offices. Ideal for busy public places where available space is limited. Users can enjoy a comparative zone of quiet regardless of the noise and confusion nearby. Conversations are clearer, understandable and private. Thick walls of sound-absorbent material

soak up both direct and reflected noises.

Made of reinforced plywood; walnut finish.

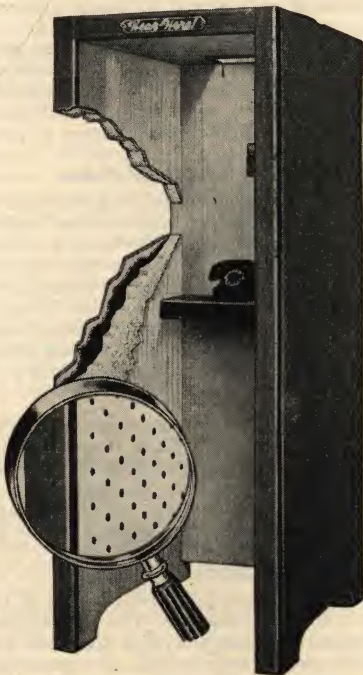
Has instrument shelf, 23½x17 inches.

Outside dimensions: width, 28 inches; height, 32 inches; depth, 26 inches.

Shipping weight, 80 pounds.

No. 601 ..... each \$90.00

### No. 201 Floor Type



Because this booth is doorless, there is ample circulation of air to relieve the stuffiness which is common to the conventional door type telephone booth.

The acoustic walls absorb disturbing noises so that the voice is heard without reverberation or echo.

Made of a thick layer of acoustic material sandwiched between plywood panels. The interior panels are perforated to allow the sound to soak into the acoustic filler.

Has rich brown walnut stain finish. An electric fixture in the ceiling provides illumination. Clean and sanitary—the pedestal foundation makes sweeping easy.

Outside dimensions: width, 30 inches; height, 79½ inches; depth, 38 inches.

Inside dimensions: width, 24 inches, height, 76½ inches; depth, 35 inches.

Wood instrument shelf, 24x8¼ inches, provides a convenient support for taking notes.

Approximate shipping weight, 225 pounds.

No. 210 ..... each \$175.00

## No. 100 Churchill Telephone Booths



No. 100 Booth



Showing Light and Ventilator

A self-contained booth designed to meet the need of a booth without a floor. Acoustically designed; every effort is made to make this booth as sound-proof as possible.

For single or multiple installation.

Equipped with a reinforced back panel for mounting a wall telephone or coin collector.

Available in selected white oak, finished medium golden oak and selected birch, finished medium mahogany.

Has folding door with glass in door only.

The following equipment is furnished as standard: automatic door switch for lights and electric ventilator; silent electric ventilator; and complete metal lining.

Seats are also available in either type of lumber, as extras.

Overall dimensions: height, 84¾ inches; width, 30½ inches; depth, 30¾ inches.

Shipped knocked down and crated.



## Western Electric

## Lead Covered Telephone Cable



2121 Pair Cable

## Types of Cable

Lead-covered cable may be divided into three general classes as follows:

1. Paper insulated cable for aerial or underground use. (Lead covered or lead covered and jute protected or lead covered and steel tape armored).
2. Paper insulated cable, submarine or gully type. (Lead covered, steel wire armored).
3. Textile insulated cable.

## Aerial or Underground Cable

## Lead Covered

Under the usual conditions of installation of telephone cables the same type of cable may be used for aerial construction or in ducts underground. The various types of lead-covered cable for aerial or underground use are as follows: NH, CNB, CSA, BPA, DSM, and BST.

## Jute Protected

A type of cover for the cable sheath has been developed which effectively protects the sheath from soil corrosion. This protection consists of wrappings of paper and jute which have been impregnated with preservative compound and which are flooded with asphaltic compound while being applied to the cable. Cables having this covering are referred to as jute protected. Jute protected cables are about .2 inch larger in overall diameter than unprotected cables for smaller sizes and about .3 inch larger for full size cables. Any lead-covered cable can be furnished jute protected if so noted on the order.

## Tape Armored

This type of sheath covering is similar to that used for the jute protected cables except for the addition of the steel tapes and a further covering of asphalt flooded jute. For the tape armored cable the increase in diameter varies with the size of the cable from about .3 to .6 inches. Any lead-covered cable can be furnished tape armored if so noted on the order.

## Galvanized Tape Armored

Galvanized tape armored cable for aerial use can be furnished where some protection against low frequency induction from power lines is desired. If individual condition necessitates this type of cable, write nearest distributor, getting details and information; prices will be furnished.

## Unit Stranded Cable—Paper Pulp Insulation

A new form of paper insulation has been developed by the Western Electric Company which is known as pulp insulation because of its method of application to the wire. Paper is made directly on conductor in such a way as to form a continuous, seamless tube.

## Submarine and Gully Type Cable, Wire Armored

Paper insulated submarine and gully type cable may be divided into three general classes:

1. High dielectric strength, tight core cable. Used in comparatively long lengths where cost of repairing a break in cable will be less than cost of new cable.
2. High dielectric strength, loose core cable. Used in comparatively short lengths where high transmission efficiency and high dielectric strength are of importance. For example, a short crossing cable connecting important open wire.
3. Single paper insulated loose core cable. Used in comparatively short lengths where so high a dielectric strength is not necessary. For example, a short crossing cable connecting land cables.

## Submarine Type

Single or double armored cable can be furnished. Double armor is used in cases of severe mechanical requirements. In still water with a mud bottom, single armor will be sufficient. With a rocky or uneven bottom, or with strong tides or currents, double armor should be considered.

## Gully Type

A light wire armored cable for crossing gullies, small streams and swamps. This cable provides greater mechanical strength than the tape armored cable and is lighter and less expensive than standard wire armored submarine design. Has same protection against soil corrosion as jute protected cable.

## Textile Insulated Cable

Paper insulated cables are usually terminated in buildings by splicing on a short piece of lead covered textile insulated cable. Commercial textile yarns are liable to contain soluble salts, which will cause electrolytic action when exposed to moist atmospheres and result in poor insulation and sometimes produce corrosion of the conductors. It has been found that by removing such impurities substantial improvements of the insulating properties of the textiles are obtained. Only purified textiles are used in Western Electric Cables.

## Special Cable

Special conditions often require cables with different characteristics from those which have been standardized and coded. Paper insulated cable, designed to withstand test potentials up to 1,500 volts a.c., is supplied for special circuits such as for telegraph or signal circuits. If an individual condition necessitates special cable, write the nearest distributor.

## Composite Cable

Composite cable, composed of conductors of two or more gages can be furnished if desired. The combinations of pairs which will utilize the space within the lead sheath most economically are somewhat limited. Recommendations will be made along this line. Consult nearest distributor.

## Quadded Cable

Paper and textile insulated quadded lead covered cable for toll telephone and telegraph purposes can be furnished if desired. Recommendations will be made upon receipt of detailed information. Consult nearest distributor.

## Reels

Cable is shipped on reels. Ends of cable are fastened securely to reels, and unarmored cable is protected by lags nailed around periphery of reel.

## Guarantee

Coding of cables is on basis of actual number of pairs in cable. The number of pairs indicated in tables are guaranteed to be free from opens, shorts, crosses, and grounds. The capacitance and the conductor resistance are guaranteed not to increase nor the insulation resistance to decrease beyond the limits stated due to defective material or manufacture.



## Western Electric

## Lead Covered Telephone Cable

## Advantages

As a means to practically uninterrupted communication, Western Electric Lead Covered Cable offers a number of conspicuous advantages, making for better service, better public relations, and money economies.

This lead covered cable possesses several advantages of material benefit to its users, among which are:

1. They make use of the most suitable designs and materials to secure and maintain the highest class of telephone transmission, as determined by many years of research work conducted by Bell Telephone Laboratories, and by constant tests in the field, in close cooperation with the largest users of telephone cable in the world.

2. The reliability of the Western Electric product is proved by the fact that more than half the telephone cable throughout the world is of Western Electric design.

3. Cables are manufactured by the Western Electric as an essential part of the telephone plant which must not only give the most efficient performance possible, but must maintain this efficiency through the greatest possible number of years. To accomplish this object, every part of telephone cable is designed not only to give the electrical qualities required, but to insure a maximum of mechanical ruggedness and protection against damage. As an example of this, a given mutual capacitance can be obtained in either a soft core or a hard core cable. The hard core cable is somewhat larger in diameter and contains a larger amount of insulating paper. The soft core cable is bound to be soft or mushy to such an extent that it has a decided tendency to buckle when bent. It is therefore more difficult to install than the harder core cable. Western Electric cables are designed to have satisfactory mechanical characteristics.

## Transmission

Transmission efficiency of telephone cable depends upon its capacitance and conductor resistance. When telephone cable forms a portion of a completed telephone connection, the transmission efficiency of the telephone connection as affected by the cable portion depends somewhat on the relative position of the cable in that circuit and also on the type of other construction to which it is connected.

The length of circuit which, when connected to short subscribers' loops, will cause a transmission loss of 30 db. (units of transmission loss, called decibels) is considered about the maximum length over which commercial transmission can be secured.

## Type NH—Paper-Ribbon Insulated

**SHEATH.** Lead antimony.

**CONDUCTORS.** No. 16 A.W.G. single dry paper tape insulation. Blue-orange pairs alternating with green-orange pairs, except for two orange-white tracer pairs, one in the center and one in the outside layer and a red-orange pair in each layer containing an odd number of pairs.

**MUTUAL CAPACITANCE.** A.c. testing average any reel not exceeding .072 microfarad per mile of cable at 60°F.

**CONDUCTOR RESISTANCE.** Not exceeding 23 ohms per mile of cable at 68°F.; any conductor.

**INSULATION RESISTANCE.** Not less than 500 megohm miles at 60°F.; any conductor.

**DIELECTRIC STRENGTH.** Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 1000 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Feet on Reels	Approx. Weight Pounds per Foot
NH 26	26	.080	1.13	2000	1.8
NH 51	51	.089	1.52	1500	2.9
NH101	101	.103	2.11	1000	5.1
NH152	152	.113	2.54	750	7.1

## Capacitance

The capacitance of a cable circuit is important because it limits to a large extent the length of cable through which it is possible to transmit speech. The capacitance may be specified either as mutual, that is, the capacitance between the two wires or a pair; or as grounded, that is, the capacitance between a wire and all the other wires and the sheath. Mutual capacitance is preferable in defining the quality of the cable for telephone transmission, since the conductors are used in pairs as metallic circuits and seldom, if ever, singly as grounded lines. The grounded capacitance is about 1.6 times the mutual, but this ratio varies somewhat for different cables.

Capacitance may be measured by the d.c. charge method, the d.c. discharge method, or the a.c. method. The a.c. method, using a frequency of 800 cycles or higher, is preferable because it measures the true capacitance for the voice currents. The d.c. capacitance tends to be higher than the a.c. capacitance. The d.c. charge method is less subject to error due to improper manipulation of the testing equipment than the d.c. discharge method.

Western Electric cables are tested for mutual capacitance by the a.c. method, unless specifically requested otherwise.

## Extra Pairs

Extra pairs are placed in all cables containing conductors smaller than No. 16 to take care of any pairs which may become defective in manufacture. In the majority of cables all or part of the extra pairs will often be found good and may be used for additional circuits. All pairs of No. 16 A.W.G. and larger except in submarine cable are guaranteed to meet the specification requirements when the cable leaves the factory.

The coding of all cables is on the basis of the actual number of pairs. Actual and guaranteed numbers of pairs in the various sizes of standard cables containing conductors smaller than No. 16 A.W.G. are as follows:

Actual Pairs	Guaranteed Pairs
6 to 149	Actual pairs less one
150 to 249	Actual pairs less two
250 to 349	Actual pairs less three
350 to 449	Actual pairs less four
450 to 505	Actual pairs less five
606	Actual pairs less six
909	Actual pairs less nine
1212	Actual pairs less twelve
1818	Actual pairs less eighteen

## For Aerial or Underground Use

## Type CNB—Paper-Ribbon Insulated

**SHEATH AND INSULATION RESISTANCE.** Same as for Type NH. **CONDUCTORS.** No. 19 A.W.G. single dry paper tape insulation, with color groups depending upon size.

**MUTUAL CAPACITANCE.** A.c. testing, average any reel not exceeding .090 microfarad per mile of cable at 60°F.

**CONDUCTOR RESISTANCE.** Not exceeding 46 ohms per mile of cable at 68°F.; any conductor.

**DIELECTRIC STRENGTH.** Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Feet on Reels	Approx. Weight Pounds per Foot
CNB 6	5	.063	.42	2800	.41
CNB 11	10	.065	.52	3000	.56
CNB 16	15	.067	.60	4000	.70
CNB 26	25	.070	.72	3000	.93
CNB 51	50	.075	.95	2500	1.46
CNB 76	75	.080	1.14	2200	1.99
CNB101	100	.084	1.29	1700	2.46
CNB152	151	.090	1.56	1400	3.38
CNB202	201	.095	1.78	1400	4.27
CNB303	302	.104	2.15	900	5.97
CNB404	402	.112	2.47	700	7.68
CNB455	452	.115	2.61	650	8.48



## Western Electric

## Lead Covered Telephone Cable

For Aerial or Underground Use

## Type BPA—Paper-Ribbon Insulated

SHEATH. Lead antimony.

CONDUCTORS. No. 22 A.W.G. double dry paper tape insulation, with color groups depending upon size.

MUTUAL CAPACITANCE. A.c. testing, average any reel not exceeding .095 microfarad per mile of cable at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 92 ohms per mile of cable at 68°F.; any conductor.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.; any conductor.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds any a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thick- ness Sheath Inches	Mean O.D. Inches	Convenient No. of Feet on Reels	Approx. Weight Pounds per Foot
BPA 6	5	.061	.36	3500	.31
BPA 11	10	.063	.42	3500	.40
BPA 16	15	.064	.47	3500	.48
BPA 26	25	.066	.55	3500	.62
BPA 51	50	.070	.73	3500	.95
BPA 76	75	.073	.85	3500	1.20
BPA101	100	.076	.96	3000	1.50
BPA152	151	.080	1.14	2000	2.00
BPA202	201	.084	1.29	2000	2.50
BPA303	301	.090	1.56	1500	3.40
BPA404	401	.095	1.78	1500	4.30
BPA606	602	.105	2.18	1060	6.10

## Type CSA—Paper-Pulp Insulated

SHEATH. Lead antimony.

CONDUCTORS. No. 22 A.W.G. pulp insulation, with color groups depending upon size.

STRANDING. Multiple-unit design 152 pairs and larger.

MUTUAL CAPACITANCE. A.c. testing, average any reel not exceeding .090 microfarad per mile of cable at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 92 ohms per mile of cable at 68°F.; any conductor.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.; any conductor.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 500 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

CSA 11	10	.063	.42	3500	.40
CSA 16	15	.064	.47	3500	.48
CSA 26	25	.066	.57	4200	.63
CSA 51	50	.070	.73	3000	.95
CSA 76	75	.073	.86	2400	1.20
CSA101	100	.076	.98	3000	1.50
CSA152	151	.080	1.16	1700	2.00
CSA202	201	.084	1.32	1600	2.50
CSA303	301	.091	1.59	1400	3.50
CSA404	401	.095	1.78	1200	4.30
CSA606	602	.104	2.15	900	6.00
CSA909	903	.115	2.61	650	8.50

## Type BST—Paper-Pulp Insulated

SHEATH. Lead antimony.

CONDUCTORS. No. 26 A.W.G. pulp insulation, with color groups depending upon size.

STRANDING. Multiple-unit design 152 pairs and larger.

MUTUAL CAPACITANCE. A.c. testing, average any reel not exceeding .085 microfarad per mile of cable at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 230 ohms per mile of cable at 68°F.; any conductor.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.; any conductor.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 500 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1200 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thick- ness Sheath Inches	Mean O.D. Inches	Convenient No. of Feet on Reels	Approx. Weight Pounds per Foot
BST 11	10	.061	.33	3500	.27
BST 16	15	.061	.36	3300	.31
BST 26	25	.063	.43	4000	.40
BST 51	50	.065	.52	4200	.55
BST 76	75	.067	.60	3700	.69
BST 101	100	.069	.69	3500	.84
BST 152	150	.072	.80	2400	1.00
BST 202	200	.074	.90	2500	1.30
BST 303	300	.078	1.08	1600	1.80
BST 404	400	.082	1.21	1600	2.20
BST 606	601	.087	1.45	1400	2.90
BST 909	902	.094	1.75	1100	4.00
BST1212	1203	.100	2.00	900	5.10
BST1515	1505	.105	2.21	650	6.1
BST1818	1806	.110	2.41	650	7.20
BST2121	2108	.115	2.61	650	8.20

## Type DSM—Paper-Pulp Insulated

SHEATH. Lead antimony.

CONDUCTORS. No. 24 A.W.G. pulp insulation, with color groups depending upon size.

STRANDING. Multiple-unit design 152 pairs and larger.

MUTUAL CAPACITANCE. A.c. testing, average any reel not exceeding .090 microfarad per mile of cable, at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 145 ohms per mile of cable, at 68°F.; any conductor.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.; any conductor.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 500 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

DSM 11	10	.061	.36	3300	.31
DSM 16	15	.062	.39	2900	.36
DSM 26	25	.064	.48	4500	.47
DSM 51	50	.067	.60	4200	.70
DSM 76	75	.069	.70	3000	.88
DSM 101	100	.071	.78	3000	1.00
DSM 152	150	.075	.93	2800	1.40
DSM 202	200	.078	1.05	2200	1.70
DSM 303	300	.082	1.24	1600	2.30
DSM 404	400	.087	1.42	1400	2.90
DSM 606	601	.093	1.71	1100	4.00
DSM 909	902	.101	2.04	900	5.60
DSM1212	1203	.109	2.35	650	7.10
DSM1515	1505	.115	2.61	650	8.60



## Western Electric Lead Covered Telephone Cable

### Type AFA—For Inside Construction

**SHEATH.** Pure lead.

**CONDUCTORS.** No. 22 A.W.G. tinned, double acetate yarn and single cotton insulation, covering on each pair colored white and red-white.

**STRANDING.** Multiple, unit design 152 pairs and larger.

**TRACER PAIR.** One in outer layer colored white-blue or white-brown.

**INSULATION RESISTANCE.** Not less than 500 megohm miles at 60°F.

**CONDUCTOR RESISTANCE.** Not exceeding 96 ohms per mile of cable at 68°F.

**DIELECTRIC STRENGTH.** Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Ft. on Reels	Approx. Wt. Lb. per Foot
AFA101	101	.064	.97	1000	1.4
AFA152	151	.071	1.17	1000	2.0
AFA202	201	.077	1.33	1000	2.5
AFA303	302	.088	1.61	800	3.6
AFA404	403	.097	1.85	700	4.7
AFA606	605	.111	2.24	500	6.8

### Type AGA—For Inside Construction

**SHEATH.** Pure lead.

**CONDUCTORS.** No. 22 A.W.G. tinned, double acetate yarn and single cotton insulation, colored in accordance with a standard color scheme so that each pair is distinguishable from other pairs in the cable.

**CONDUCTOR RESISTANCE.** Not exceeding 96 ohms per mile of cable at 68°F.

**INSULATION RESISTANCE.** Not less than 500 megohm miles at 60°F.

**DIELECTRIC STRENGTH.** Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

AGA6	6	.040	.31	1000	.20
AGA11	11	.042	.38	1000	.28
AGA16	16	.045	.45	1000	.36
AGA21	21	.047	.50	1000	.44
AGA26	26	.048	.53	1000	.49
AGA31	31	.049	.58	1000	.56
AGA41	41	.052	.65	1000	.69
AGA51	51	.055	.72	1000	.82
AGA76	76	.059	.85	1000	1.10
AGA101	101	.064	.97	1000	1.40
AGA152	151	.071	1.17	1000	2.00
AGA202	201	.077	1.33	1000	2.50

### Type BUA—For Inside Construction

**SHEATH.** Pure lead.

**CONDUCTORS.** No. 22 A.W.G. tinned, double cotton insulation, coated with cellulose acetate lacquer, colored in accordance with a standard color scheme so that each pair is distinguishable from other pairs in the cable.

**CONDUCTOR RESISTANCE.** Not exceeding 96 ohms per mile of cable at 68°F.

**INSULATION RESISTANCE.** Not less than 10 megohm miles at 60°F.

**DIELECTRIC STRENGTH.** Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

BUA6	6	.040	.33	1000	.25
BUA11	11	.043	.41	1000	.32
BUA16	16	.045	.47	1000	.39
BUA21	21	.047	.51	1000	.45
BUA26	26	.049	.57	1000	.51
BUA31	31	.050	.60	1000	.56
BUA41	41	.053	.69	1000	.66
BUA51	51	.056	.75	1000	.94
BUA76	76	.061	.89	1000	1.19
BUA101	101	.065	1.01	1000	1.42

### Type NFA—For Inside Construction

**SHEATH.** Pure lead.

**CONDUCTORS.** No. 22 A.W.G. tinned, enamel, double acetate yarn and single cotton insulation, covering on each pair colored white and red-white.

**STRANDING.** Multiple, unit design 152 pairs and larger.

**TRACER PAIR.** One in outer layer colored white-blue or white-brown.

**INSULATION RESISTANCE.** Not less than 500 megohm miles at 60°F.

**CONDUCTOR RESISTANCE.** Not exceeding 96 ohms per mile of cable at 68°F.

**DIELECTRIC STRENGTH.** Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Ft. on Reels	Approx. Wt. Lb. per Foot
NFA101	101	.064	.97	1000	1.4
NFA152	151	.071	1.17	1000	2.0
NFA202	201	.077	1.33	1000	2.5
NFA303	302	.088	1.61	800	3.6
NFA404	403	.097	1.85	700	4.7
NFA606	605	.111	2.24	500	6.8

### Type NGA—For Inside Construction

**SHEATH.** Pure lead.

**CONDUCTORS.** No. 22 A.W.G. tinned, enamel, double acetate yarn and single cotton insulation, colored in accordance with a standard color scheme so that each pair is distinguishable from other pairs in the cable.

**CONDUCTOR RESISTANCE.** Not exceeding 96 ohms per mile of cable at 68°F.

**INSULATION RESISTANCE.** Not less than 500 megohm miles at 60°F.

**DIELECTRIC STRENGTH.** Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

NGA6	6	.040	.31	1000	.20
NGA11	11	.042	.38	1000	.28
NGA16	16	.045	.45	1000	.36
NGA21	21	.047	.50	1000	.44
NGA26	26	.048	.53	1000	.49
NGA31	31	.049	.58	1000	.56
NGA41	41	.052	.65	1000	.69
NGA51	51	.055	.72	1000	.82
NGA76	76	.059	.85	1000	1.10
NGA101	101	.064	.97	1000	1.40
NGA152	151	.071	1.17	1000	2.00
NGA202	201	.077	1.33	1000	2.50

### Type OUA—For Inside Construction

**SHEATH.** Pure lead.

**CONDUCTORS.** No. 22 A.W.G. tinned, enamel, double cotton lacquered insulation, colored in accordance with standard color scheme so that each pair is distinguishable from other pairs in the cable.

**CONDUCTOR RESISTANCE.** Not exceeding 96 ohms per mile of cable at 68°F.

**INSULATION RESISTANCE.** Not less than 20 megohm miles at 60°F.

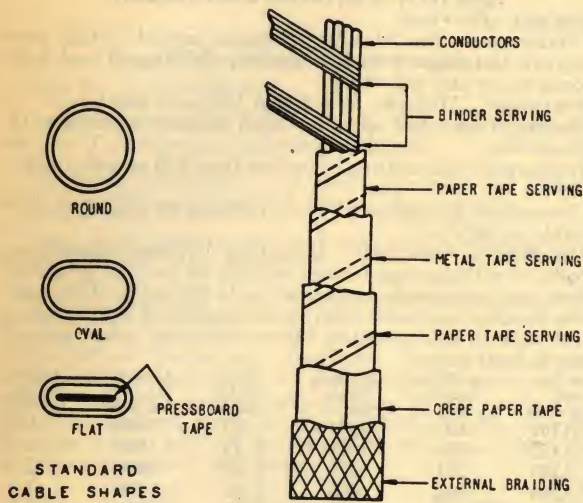
**DIELECTRIC STRENGTH.** Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

OUA6	6	.040	.33	1000	.21
OUA11	11	.043	.41	1000	.30
OUA16	16	.045	.47	1000	.38
OUA21	21	.047	.51	1000	.46
OUA26	26	.049	.57	1000	.53
OUA31	31	.050	.60	1000	.58
OUA41	41	.053	.69	1000	.71
OUA51	51	.056	.75	1000	.86
OUA76	76	.061	.89	1000	1.10
OUA101	101	.065	1.01	1000	1.40

For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.



## Western Electric Type CL Switchboard Cable



SHOWING BINDER SERVING NOT USED ON QUADDED CABLE

### Tinned Conductors Double Acetate Yarn, Single Cotton Insulation, Lacquered

Code No.	*Conductors	Pairs		Singles		Dimen.	Shape	Replaces
		No. Gage	†Color	No. Gage or	†Color	In.		
16CL	63	20 22	1-20	20 22	1-20	.350x.760	Oval	6016-6201
24CL	43	20 22	1-20	.. .. .	.. .. .	.330x.560	Oval	6024-6196
50CL	33	10 22	1-10	10 22	1-10	$1\frac{3}{16}$ Diam.	Rd.	6050
62CL	63	15 22	1-15	.. .. .	.. .. .	$\frac{9}{16}$ Diam.	Rd.	6035-6062
		15 22	21-35	.. .. .	.. .. .			
		40 22	1-40	.. .. .	.. .. .			
66CL	103	5 22	121-125	.. .. .	.. .. .	.72 Diam.	Rd.	1066-6066
		5 22	141-145	.. .. .	.. .. .			
		20 22	1-20	.. .. .	.. .. .			
		20 22	1-20	.. .. .	.. .. .			
69CL	208	20 22	1-20	.. .. .	.. .. .	.98 Diam.	Rd.	1069-6069
		20 22	1-20	.. .. .	.. .. .			
		20 22	1-20	.. .. .	.. .. .			
70CL	83	20 22	1-20	.. .. .	.. .. .	$1\frac{5}{32}$ x $1\frac{1}{16}$	Oval	6070
74CL	21	10 22	181-190	.. .. .	.. .. .	$\frac{3}{8}$ Diam.	Rd.	6074, 6079
97CL	132	64 22	1-64	.. .. .	.. .. .	.81 Diam.	Rd.	1097-6097
100CL	83	20 24	1-20	.. .. .	.. .. .	.73x.49	Oval	1100-6100
		20 24	141-160	.. .. .	.. .. .			
103CL	42	20 24	1-20	.. .. .	.. .. .	.58x.37	Oval	1103-6103
106CL	103	20 22	1-20	20 22	1-20	$1\frac{1}{16}$ Diam.	Rd.	6106
		20 22	141-160	.. .. .	.. .. .			
125CL	23	10 19	1-10	.. .. .	.. .. .	.52 Diam.	Rd.	1125-6125
182CL	13	6 22	181-186	.. .. .	.. .. .	$\frac{1}{4}$ Diam.	Rd.	6182
183CL	53	10 22	1-10	10 22	1-10	$1\frac{1}{4}$ Diam.	Rd.	6183
		10 22	141-150	.. .. .	.. .. .			
191CL	93	20 22	1-20	30 12	21-50	.61 Diam.	Rd.	6191
205CL	39	12 22	1-12	12 22	21-32	.42 Diam.	Rd.	6205-6227
232CL	83	20 22	1-20	.. .. .	.. .. .	.350x1.570	Flat	.. .. .
		20 22	141-160	.. .. .	.. .. .			
233CL	123	20 22	1-20	40 22	1-40	.68 Diam.	Rd.	6233
		20 22	21-40	.. .. .	.. .. .			
		20 22	1-20	.. .. .	.. .. .			
234CL	164	20 22	21-40	.. .. .	.. .. .	.81 Diam.	Rd.	6234
		20 22	121-140	.. .. .	.. .. .			
		20 22	141-160	.. .. .	.. .. .			
		20 22	1-20	.. .. .	.. .. .			
235CL	205	20 22	21-40	40 22	1-40	.88 Diam.	Rd.	6235
		20 22	121-140	.. .. .	.. .. .			
		20 22	141-160	.. .. .	.. .. .			
236CL	63	20 24	1-20	20 24	1-20	.82x.44	Flat	1236
239CL	103	20 22	1-20	20 22	1-20	.370x1.57	Flat	.. .. .
		20 22	161-180	.. .. .	.. .. .			
241CL	43	20 22	1-20	.. .. .	.. .. .	.33x.76	Flat	.. .. .
242CL	63	20 22	1-20	20 22	1-20	.33x1.57	Flat	.. .. .
		20 22	1-20	20 22	1-20			
		20 22	1-20	20 22	1-20			
243CL	312	20 22	1-20	20 22	1-20	1.11 Diam.	Rd.	6237
		20 22	1-20	20 22	1-20			
		20 22	1-20	20 22	1-20			

\*Includes spares.

†Numbers refer to color combinations. Write for further information.

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 11.  
Consult your nearby Graybar office and warehouse.

This cable represents the highest development in the art of switchboard cable manufacture.

The CL type cable listed in the following tables consists of copper conductors, either tinned or enameled, with two servings of double acetate yarn and one serving of cotton impregnated with cellulose acetate.

Cellulose acetate impregnated conductors are referred to in the tabulation as lacquered conductors.

Cables having enameled conductors are identified by four digit code numbers, 1016CL, 1024CL, etc. All CL cables except the quadded 500CL and 1500CL type have an outer covering consisting of the following: the core of each cable is bound with a binder serving of cotton; a serving of paper tape; a serving of metal tape; a second serving of paper tape; and a serving of crepe paper applied longitudinally. Over this is applied a close braiding of cotton. The completed cable is painted with gray cable paint.

In quadded cable (500CL and 1500CL types), the cotton binder serving is omitted and a heavier first serving of paper tape is used.

Designed in three general shapes, flat, oval, and round. In the following tabulations the larger dimensions for oval or flat cable represent the width and the smaller dimensions the thickness.

### Tinned Enameled Conductors Double Acetate Yarn, Single Cotton Insulation, Lacquered

Code No.	*Conductors	Pairs		Singles		Dimen.	Shape	Replaces
		No. Gage	†Color	No. Gage	†Color	Inches		
1016CL	63	20 22	1-20	20 22	1-20	.79x.39	Oval	1016
1024CL	43	20 22	1-20	.. .. .	.. .. .	.55x.42	Oval	1024
1050CL	33	10 22	1-10	10 22	1-10	.42 Diam.	Rd.	1050
		40 22	1-40	.. .. .	.. .. .			
1066CL	103	5 22	121-125	.. .. .	.. .. .	.73 Diam.	Rd.	1066
		5 22	141-145	.. .. .	.. .. .			
		20 22	1-20	.. .. .	.. .. .			
1069CL	208	20 22	1-20	.. .. .	.. .. .	.109 Diam.	Rd.	1069
		20 22	1-20	.. .. .	.. .. .			
		20 22	1-20	.. .. .	.. .. .			
1070CL	83	20 22	1-20	.. .. .	.. .. .	.79x.50	Oval	1070
		20 22	141-160	.. .. .	.. .. .			
1074CL	21	10 22	181-190	.. .. .	.. .. .	.39 Diam.	Rd.	1074
1125CL	23	10 19	1-10	.. .. .	.. .. .	.58x.36	Oval	.. .. .
1182CL	13	6 22	181-186	.. .. .	.. .. .	.32 Diam.	Rd.	1182
1475CL	12	16 22	181-186	.. .. .	.. .. .	.40 Diam.	Rd.	1475
1476CL	24	12 22	181-192	.. .. .	.. .. .	.5 Diam.	Rd.	1476

†Made up of shielded twisted pairs. The wires are twisted in pairs and a ground wire is laid longitudinally with the twisted pair. On each pair is a braided shield of copper wire. Intended for use in multi channel carrier circuits.

### Toll Quadded Cable—Tinned Conductors Double Acetate Yarn, Single Cotton Insulation, Lacquered

Code No.	*Conductors	No. of Quads	Gage	†Quad Color	Diameter Inches	Shape
500CL	8	2	22	1 & 2	.28	Round
501CL	16	4	22	1-4 Incl.	.40	Round
502CL	32	8	22	1-8 Incl.	.50	Round
503CL	40	10	22	1-10 Incl.	.56	Round
504CL	52	12	22	1-12 Incl.	.59	Round
505CL	68	16	22	1-16 Incl.	.68	Round
506CL	84	20	22	1-20 Incl.	.71	Round

### Toll Quadded Cable—Tinned Enameled Conductors Double Acetate Yarn, Single Cotton Insulation, Lacquered

Code No.	*Conductors	No. of Quads	Gage	†Quad Color	Diameter Inches	Shape
1500CL	8	2	22	1 & 2	.28	Round
1501CL	16	4	22	1-4 Incl.	.40	Round
1502CL	32	8	22	1-8 Incl.	.50	Round
1503CL	40	10	22	1-10 Incl.	.56	Round
1504CL	52	12	22	1-12 Incl.	.59	Round
1505CL	68	16	22	1-16 Incl.	.68	Round
1506CL	84	20	22	1-20 Incl.	.71	Round



## Western Electric Cable Terminals

### Type B—Protected



No. B26, Open

The listing of Type B cable terminals complete includes a terminal box, equipped with fuse chambers and binding post chambers, each of which is supplied with a cable stub attached and potheaded. Fuse chambers and binding post chambers may be ordered as separate items.

No. B26 terminal will terminate both a 26 pair underground cable and a 26 pair aerial cable. It provides for cross-connection. Other sizes have similar capacity ratings.

Pole seats may be used with the two smaller sizes of Type B cable terminals. These together with balconies for the large terminals can be obtained.

Code No.	Capacity Pairs	Cable Terminal Box	*Fuse Chamber		Binding Post Chamber	
			No.	Qty.	No.	Qty.
B 26	26	B 26	B 26A	1	B 26A	1
B 51	51	B 51	B 51A	1	B 51A	1
B 76	76	B 76	B 76A	1	B 76A	1
B101	101	B101	B101A	1	B101A	1
B152	152	B152	B 76B	2	B 76B	2
B202	202	B202	B101B	2	B101B	2
B304	304	B304	B 76B	2	B 76B	2
			B 76C	2	B 76C	2
			B101B	2	B101B	2
B404	404	B404	B101C	2	B101C	2

\*B fuse chambers do not include the No. 7T fuses which must be ordered separately.

### Type F—Unprotected



Open

Provides a moisture-proof seal for lead-covered cables terminated on outside walls or poles.

Consists essentially of a metal sealing chamber having an insulating panel with binding posts, nuts, and washers. Provided with galvanized slip cover and detachable metal mounting plate. Terminal may be mounted with stubs out of top or bottom of mounting. With 5½-foot cable stub projecting from top of terminal. Can be furnished with 10 or 12-foot cable stub (out of top only), or 8-foot cable stub (out of top or bottom as specified). Side View

Code No. ....	F10	F16	F26
No. Pairs of Conductors Arranged for. . .	10	16	26
Overall Height. . . . . inches	8½	10½	15½
Overall Width. . . . . inches	7½	7½	7½
Overall Depth. . . . . inches	4½	4½	4½

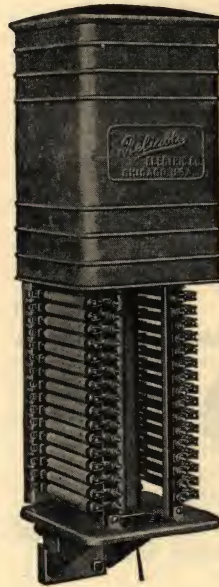
For more complete information on all types of telephone apparatus and cable, consult your nearby Graybar office.

## Reliable Protected Cable Terminals

Type B27 with No. 27L 5-Ampere Fuse

Type B56 with No. 56 5-Ampere Fiber Fuse

Type B55 with No. 55 5-Ampere Fiber Fuse



For terminating lead covered cable with facilities for drop wire distribution. Adds to the convenience of installation, wiring and maintenance. A detachable mounting bracket simplifies the installation.

The cable chamber is on the pole side and is accessible by removing the terminal from the bracket. All drop wiring is done on the side away from the pole.

Individual clips for carbons and fuses, prevent the carbons from crossing when removing fuses. It is unnecessary to remove these fuses when installing jumper wires as all binding posts are at right angles to the fuses.

The heavy binding posts are treated to prevent season cracking Mounted in molded bakelite and cannot short or turn.

Fuse clips and all other metal parts are rounded to prevent scratches to linemen. Beveled washers on binding posts make it easy for linemen to insert wires. Jumper wires enter the terminal through a heavy fiber fanning hole in bottomplate.

The cast cable chamber is air tight with a full round rubber gasket which seals cable wires. Cable wires are terminated in hollow studs and can be soldered outside of the cable chamber.

The can top is square with a heavy cast cover which acts as protection against bending or puncturing. It is guided from three points to prevent contact with live parts.

Supplied with No. P495 saw-tooth discharge blocks, No. P197 carbons and 7-foot, No. 22 A.W.G. stub.

Capacity Pairs	Each	Overall Height Inches	Stub Inches	Shipping Weight Pounds
11	\$17.50	14½	None	21
	20.10	14½	7	30
16	24.15	17½	None	24
	27.30	17½	7	35
26	33.10	23¾	None	27
	37.00	23¾	7	37

## Type RP Reliable Protected Cable Terminals

Type RP-27 with No. 27L 5-Ampere Fuses

Type RP-56 with No. 56 5-Ampere Fuses



This is a compactly designed, reversible protected cable terminal. Designed to meet requirements for a small protected terminal of high quality and fine workmanship.

Rugged in construction, yet light in weight. The mounting bracket is detachable for easy installation. The cable chamber is a durable casting—will outlast the cable. A sliding cover is provided making the terminal reversible and eliminating the bother of handling separate types for installation with stub at top and bottom.

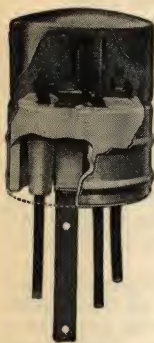
Made of corrosion resistant aluminum alloy throughout. Insulation is molded bakelite.

Furnished with P495 sawtooth discharge blocks, P1384 carbons, and a 6-foot, No. 22 A.W.G. stub out of top.

Type. . . . .	RP
Each. . . . .	\$13.00
Capacity. . . . . pairs	6
Height. . . . . inches	11
Stub. . . . . feet	6
Weight. . . . . pounds	9½



### No. 402RR Reliable Two-Wire Cross Arm Arresters



Has galvanized steel bracket and an aluminum cover.

Furnished with P495 discharge block and P1384 carbon block.

Furnished with dry spot base of heavy porcelain.

Diameter, 3 inches. Length, 8½ inches.

Standard package, 2.

Shipping weight, 2 pounds.

No. 402RR.....each \$1.00

### No. P495 Reliable Sawtooth Discharge Blocks



Standard package, 20.

No. P495, Ship. Wt. per 100, 2 Pounds.....per 100 \$7.50

### Reliable Fuses

#### For Protectors and Terminals

1, 3, 5, and 7 Ampere Capacity

Unless otherwise specified, 7-ampere fuses will be supplied.

1⅜-Inch Tip Diameter



Made in four lengths.

No.	Per 100	Shoulder to Shoulder Inches	Material	Std. Pkg.	Ship. Wt. Lb. per 100
27L	\$9.00	4¾	Ceramic	50	6
77	16.80	4¾	Fiber	50	5
95L	9.00	4	Ceramic	50	5
31L	9.00	3	Ceramic	50	5

1⅛-Inch Diameter Tip

Made in two lengths.

No.	Per 100	Shoulder to Shoulder Inches	Material	Std. Pkg.	Ship. Wt. Lb. per 100
30	\$9.00	3	Ceramic	50	7
106	15.00	3⅛	Fiber	50	4

7/16-Inch Round Fiber

With ⅜-Inch Hexagon Nuts, Both Ends



Made in two lengths.

No.	Per 100	Shoulder to Shoulder Inches	Material	Std. Pkg.	Ship. Wt. Lb. per 100
53	\$18.00	3¾	Fiber	50	6
55	18.00	4⅞	Fiber	50	7

7/16-Inch Round Fiber

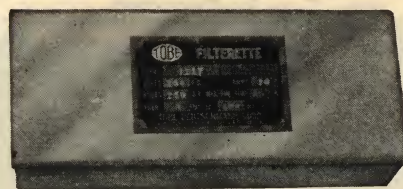
With ⅜-Inch Hexagon Nut, One End



No.	Per 100	Shoulder to Shoulder Inches	Material	Std. Pkg.	Ship. Wt. Lb. per 100
56	\$20.00	4⅞	Fiber	50	8

### Tobe Filterettes

#### No. 1217 For Permanent Installation



Used with oil burners, refrigerators, call systems, relays, traffic beacons, small sign flashers, dish washers, printing press motors, and small generators.

For operation at 250 volts a.c. or d.c.

Handles up to 10 amperes. Equipped with screw terminals. Frequency range, 300 kc. to 400 mc.

Contained in steel knockout box 8⅞x3⅞x1⅞ inches.

Has ¼-inch mounting holes on 2⅞x6⅞-inch centers in back of box.

Individually boxed.

Furnished in standard packages of 6 units.

No. 1217.....each \$12.50

#### No. 1209 For Permanent Installation

Used with large motors, d.c. generators, rotary converters, and electro-medical equipment.

For operation at 125 volts a.c. or d.c.

Handles up to 50 amperes.

Contained in steel knockout box 4⅞x7⅞x3¼ inches.

Has No. 4 mounting holes on 3¼x6-inch centers.

Screw terminals have 10-32 slotted hex head screws, with lockwashers.

Individually boxed.

Furnished in standard packages of 4 units.

No. 1209.....each \$26.00

#### No. 1239 For Fluorescent Lamps



Connects across 115-volt input to fluorescent lamp to stop feed-back of radio noise along lamp cord or wiring.

Contained in molded phenolic case, 1⅜x1⅞ inches, with wrap-around bracket for single screw mounting.

Has insulated flexible leads for connection to a.c. or d.c. line.

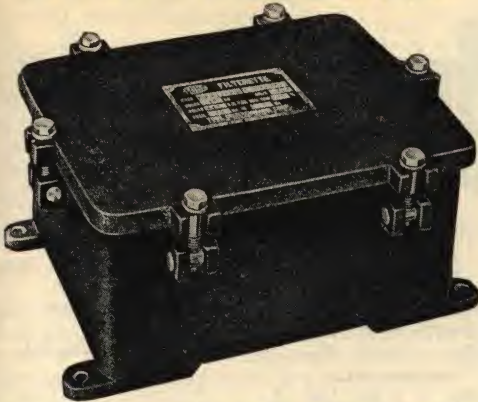
Convenient, flat shape fits small space in lamp base or fixture housing. Works well in broadcast and popular short wave bands.

Standard package, 12.

No. 1239.....each \$.95



## Tobe Filterettes No. 1168AD For Permanent Installation



For marine service, or for use in refrigerating plants and where high humidity is encountered. For operation at 40 volts a.c. or d.c.; handles up to 55 amperes.

Contained in cast housing  $8\frac{3}{4} \times 6\frac{1}{4} \times 4\frac{1}{8}$  inches, with rigid cover held on by six swing bolts; integral mounting lugs with  $\frac{3}{8}$ -inch holes on  $9\frac{1}{8} \times 5\frac{7}{16}$ -inch centers; 10-32 terminal screws. Standard package, 1.

No. 1168AD.....each \$34.00

### No. 1197 For Permanent Installation

For marine service. For operation at 250 volts a.c. or d.c.; handles up to 50 amperes.

Contained in cast housing  $6\frac{3}{8} \times 5\frac{5}{16} \times 3\frac{7}{8}$  inches with integral lugs for mounting on 4 by 4-inch centers.

Cover is fastened by 4 screws.

Standard package, 2.  
No. 1197.....each \$34.00

### Screen Booth Filters

For insertion in power supply line to shielded test rooms; these units provide wide-band attenuation ample to allow operation of sensitive, high-frequency apparatus in close proximity to electrical equipment of all types.

Welded steel housings have knock-outs for conduit at each end; threaded studs facilitate cable lug attachment.

#### Heavy Duty Filters

No.	Amp.	Volts	Volt. Drop per Circuit	Freq. Range Megacycles	Wt. Lb.
*1179-A	100	500 A.C./D.C.	.2	0.15 to 400	40
†1182-A	100	500 A.C./D.C.	.2	0.15 to 400	65
<b>Medium Duty Filters (Two Wire)</b>					
1137	20	{ 110/220 A.C. 500 D.C. }	.5	0.15 to 20	17
1116	50	{ 110/220 A.C. 500 D.C. }	.5	0.15 to 20	17

\*Two Wire. †Three Wire.

### Tobe Manufacturers' Type Filterettes



The Tobe "Filtered" Tag, which carries with it a consumer acceptance value, is made available to manufacturers.

Designed and engineered to suppress static caused by oil burners, barbers' clippers, ozonators, traffic signals, and a multitude of equipment and household appliances.



Graybar is prepared to facilitate solutions to all inquiries which may arise in connection with noise suppression.

## Tobe Filterettes

### No. 1218 For Portable Equipment



Used with office machines, large food mixers (commercial type), and light electro-medical equipment.

Operates on 125/250 volt a.c. or d.c. circuits at loads up to 10 amperes, over a frequency range of 300 kc. to 30 mc.

Has steel case  $8\frac{3}{8} \times 3\frac{5}{16} \times 1\frac{11}{16}$  inches.

Has 6-foot rubber insulated cord and standard two-contact receptacle; screw is provided for return connection to frame of noise maker.

Individually boxed and furnished in standard packages of 6.

No. 1218.....each \$12.50

### No. 1214 For Portable Equipment



Used with appliances driven by universal or d.c. motors, such as vacuum cleaners, hair dryers, sewing machines, food mixers, and cash registers. Most effective in the broadcast band and adjacent short-wave bands.

Operates on 125 volts a.c. or d.c. at current up to 15 amperes.

Plastic case is  $1\frac{1}{2} \times 2\frac{3}{8}$  inches.

Individually packaged and furnished in counter display boxes of 12 units. Weight each,  $2\frac{1}{2}$  ounces.

No. 1214.....each \$1.98

### No. 1215 For Electric Razors



Used with electric razors. Operates on 125 volts a.c. or d.c. at current up to 15 amperes.

Plastic case is  $1\frac{1}{2} \times 2\frac{3}{8}$  inches.

Individually packaged and furnished in counter display boxes of 12 units. Weight, each  $2\frac{1}{2}$  ounces.

No. 1215.....each \$1.98

### No. 1220 For Portable Equipment



Used with appliances of the series-motored or universal-motored type. Recommended when the nearest radio station is more than 100 miles away.

Operates on 125 volts, a.c. or d.c. at current up to 15 amperes.

Has steel case  $2\frac{1}{8} \times 2\frac{7}{8} \times 1\frac{1}{4}$  inches with strap bracket for mounting on  $3\frac{1}{16}$ -inch centers.

Furnished with 6-foot rubber-insulated cord and plug, and a two-contact receptacle.

Individually boxed and packaged in standard lots of 6.

No. 1220.....each \$5.50



## Type PRF Tobe Oil-Paper Capacitors

## For A.C. Service



No. PRF-3310

Designed for intermittent or continuous a.-c. service and for power factor correction. Oil-filled, oil-impregnated and furnished in hermetically sealed steel cases with solder lug terminals on a leak-proof insulator assembly.

In higher voltage ratings, the solder-lug terminals are provided with cup-type bushings for a longer leakage path.

Dependable service in ambient temperatures up to 75°C. is accomplished with stable capacitance and stable power factor.

Mounting provisions include the permanently attached base plate, designated by the suffix P to the type number; the hook hold-down bracket with spade lug, designated H; the flange type hook hold-down bracket, designated F; and the universal wrap-around (adjustable) bracket, designated U.

## Type PRF Bases

Base	Thickness Inches	Width Inches	Base	Thickness Inches	Width Inches
A	1 1/16	1 13/16	E	2 1/4	3 3/4
B	1 3/16	2 1/2	F	2 1/2	3 3/4
C	1 1/4	3 3/4	G	3 3/16	3 3/4
D	1 3/4	3 3/4	H	4 9/16	3 3/4

110-330 V., A.C.				440 V., A.C.				660 V., A.C.			
Capacity Mfd.	No.	Base	Height In.	Capacity Mfd.	No.	Base	Height In.	Capacity Mfd.	No.	Base	Height In.
1	PRF-331	*A	2 1/8	1	PRF-441	*A	2 5/8	1	PRF-661	A	4
2	PRF-332	*A	2 5/8	2	PRF-442	*A	4	2	PRF-662	B	4 1/4
3	PRF-333	*A	4	3	PRF-443	B	3 1/2	3	PRF-663	C	3 1/2
4	PRF-334	B	3 1/2	4	PRF-444	B	4 3/4	4	PRF-664	D	3 3/8
5	PRF-335	B	4 1/4	5	PRF-445	C	4	5	PRF-665	D	4 1/4
6	PRF-336	B	4 3/4	6	PRF-446	C	4 3/4	6	PRF-666	E	4 1/4
7	PRF-337	...	...	7	PRF-447	...	...	7	PRF-667	E	4 1/4
8	PRF-338	C	4	8	PRF-448	D	4	8	PRF-668	F	4 3/4
10	PRF-3310	C	4 3/4	10	PRF-4410	D	4 3/4	10	PRF-6610	G	4 3/4
12	PRF-3312	D	4	12	PRF-4412	E	4 3/4	12	PRF-6612	H	4 3/4
15	PRF-3315	D	4 3/4	15	PRF-4415	G	4	15	PRF-6615	H	5 3/4
20	PRF-3320	E	4 3/4	20	PRF-4420	H	4 3/4	20	PRF-6620	H	7 1/2
25	PRF-3325	G	4 1/2	25	PRF-4425	H	5 3/4	25	PRF-6625	...	...
30	PRF-3330	H	4	30	PRF-4430	H	6 1/2	30	PRF-6630	...	...
40	PRF-3340	H	4 3/4	40	PRF-4440	...	...	40	PRF-6640	...	...
50	PRF-3350	H	5 1/2	50	PRF-4450	...	...	50	PRF-6650	...	...
60	PRF-3360	H	6 1/2	60	PRF-4460	...	...	60	PRF-6660	...	...
80	PRF-3380	H	8 1/2	80	PRF-4480	...	...	80	PRF-6680	...	...

\*Cup bushings cannot be furnished.

## Tobe N-Erg-Y Capacitors



Designed for use with portable speed-flash units. Has high energy storage combined with compactness and light weight.

Dependability under diversified operating requirements suits all types of indoor and outdoor service in modern super-speed, photo-flash work.

Available in two ratings, 100 watt-seconds and 25 watt-seconds.

## 100 Watt-Seconds

Peak rating of 2500 volts d.c.; holds peak charge for approximately 24 hours.

Hermetically sealed steel case, cup-type phenolic bushings, heavy duty screw terminals for large cable connections to handle high instantaneous currents.

Negligible inductance and resistance in windings and connections allows high instantaneous current values up to 1250 amperes.

Has 10,000 charge-discharge cycles at peak rating.

Dimensions: height, 6 1/2 inches; and 3 3/4 x 4 5/8-inch base.

Weight, 6 1/2 pounds.

## 25 Watt-Seconds

Has same features as 100 watt seconds capacitor except height, 4 3/4 inches; and 3 3/4 x 2 1/2-inch base.

Weight, 2 1/2 pounds.

## Tobe A.C. Oil Type Motor Capacitors



Designed for long life under the stress of a.c. motor starting and power factor correction.

Non-inductively wound, mineral oil impregnated and filled. Has low power factor and high degree of stability as to all characteristics, at temperatures up to 85°C.

Non-removable solder-lug terminals are assembled to hermetically sealed cylindrical steel cases.

Mounting brackets can be furnished in flat or curved style.

220 Volts A.C.				375 Volts A.C.			
No.	Capacity Mfd.	Diam. In.	Ht. In.	No.	Capacity Mfd.	Diam. In.	Ht. In.
MRR-221-75	1.75	1 3/8	2 1/2	MRR-387	7.00	2 1/2	5 1/2
MRR-224-75	4.75	2 3/16	2 5/8				
MRR-225	5.00	2 3/16	2 5/8				
330 Volts A.C.				440 Volts A.C.			
MRR-332	3.00	1 3/8	3	MRR-444-5	4.50	2 1/2	5 1/2
MRR-333-3	3.30	2	2 3/8	MRR-445	5.00	2 1/2	5 1/2
MRR-333-5	3.50	2	2 3/8	MRR-447	7.00	2 1/2	5 1/2
MRR-334	4.00	2 3/16	2 3/8	MRR-448	8.00	2 1/2	5 1/2
MRR-335	5.00	2 3/16	2 3/8				

## Tobe Electrolytic Type Motor-Starting Capacitors



For use in a.c. motor starting circuits at temperatures from minus 76°F. to plus 185°F.

Cylindrical metal cases in three standard sizes: KM1C1, 1 3/8-inch diam. 3 3/8-inch height; KM1C2, 2-inch diam. 3 3/8-inch height; KM1C6, 2-inch diam. 4 3/8-inch height.

Furnished with screw or solder-lug terminals. Standard mounting hardware as required.

110 Volts A.C.				110 Volts A.C.			
CAPACITANCE—				CAPACITANCE—			
No.	Min.	Max.		No.	Min.	Max.	
KM1C1-020-110	20	24		KM1C2-189-110	189	210	
KM1C1-027-110	27	30		KM1C2-216-110	216	240	
KM1C1-032-110	32	36		KM1C2-243-110	243	270	
KM1C1-043-110	43	48		KM1C2-270-110	270	300	
KM1C1-054-110	54	60		KM1C6-324-110	324	360	
KM1C1-064-110	64	71		KM1C6-378-110	378	420	
KM1C1-070-110	70	78					
KM1C1-076-110	76	84					
KM1C1-086-110	86	96					
KM1C1-097-110	97	107					
KM1C1-108-110	108	120					
KM1C1-124-110	124	138					
KM1C1-145-110	145	161					
KM1C2-162-110	162	180					
220 Volts A.C.				220 Volts A.C.			
KM1C1-020-220	20	24		KM1C1-026-220	26	30	
KM1C1-026-220	26	30		KM1C6-032-220	32	36	
KM1C6-032-220	32	36		KM1C6-038-220	38	42	
KM1C6-038-220	38	42		KM1C6-043-220	43	48	
KM1C6-043-220	43	48		KM1C6-053-220	53	60	
KM1C6-053-220	53	60					

## Tobe Oil Type Fluorescent Lamp Capacitors



## Type FCR

Round Case—2 3/8 Inches High			
No.	A.C. Capacity Volts Mfd.	Diam. In.	Ht. In.
FCR-332-5	330 2.5	2 1/32	
FCR-333	330 3.0	2 1/32	
FCR-333-5	330 3.5	2 1/32	
FCR-334	330 4.0	2 1/32	
FCR-441-5	440 1.5	2 1/32	
FCR-442	440 2.0	2 1/32	

Designed to meet the special a.c. requirements of fluorescent lamp and other a.c. services.

Mineral oil impregnated and filled.

Hermetically sealed in metal cases with oil-proof solder-lug terminals.

Available in round and oval styles.

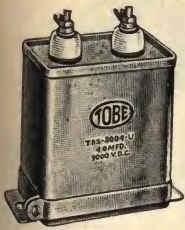


## Type FCO

Oval Case—2 3/8 x 1 1/4-In. Base			
No.	A.C. Capacity Volts Mfd.	Diam. In.	Ht. In.
FCO-223-5	220 3.50	3 3/4	
FCO-223-75	220 3.75	4 1/4	
FCO-224	220 4.00	4 3/8	
FCO-224-5	220 4.50	4 1/4	
FCO-224-75	220 4.75	4 1/4	
FCO-333	330 3.00	3 3/8	
FCO-333-5	330 3.50	2 3/8	
FCO-333-75	330 3.75	4 1/4	
FCO-334	330 4.00	4 3/8	
FCO-334-25	330 4.25	4 3/8	



## Type TRS Tobe Oil-Paper Capacitors



No. TRS-3004-U

For use in filter, transmitting, and timing circuits. Capable of withstanding transient voltages and temperatures encountered in such service.

For filter circuit applications, capacitor is rated in terms of R.M.S. voltage at the input to the rectifier.

Impregnated and filled with mineral oil. Is of non-inductive type. Hermetically sealed steel case of squeeze-seam construction can be furnished with permanently attached mounting feet,

hook hold-down brackets, or adjustable wrap-around brackets, all of which provide for upright or inverted mounting. Wrap-around bracket permits capacitor to be set into a sub-panel or chassis with terminals at any desired distance above mounting surface.

Terminal assemblies are of oil-tight construction with insulation adequate to rated voltage of capacitor. Heavy shakeproof type soldering lugs, assembled to terminal studs, will handle connecting wires in sizes up to No. 15. Terminals are white porcelain; washers, black bakelite.

Type numbers identify capacitor without mounting. For mounting feet, add P to type number; for hook type bracket add H; for universal wrap-around bracket, add U.

No.	Capacity Mfd.	Volts D.C.	DIMENSIONS, INCHES		
			Height	Width	Thickness
TRS-650	.50	600	2 1/8	1 13/16	1 1/16
TRS-601	1.0	600	2 7/8	1 13/16	1 1/16
TRS-602	2.0	600	2 7/8	1 13/16	1 1/16
TRS-603	3.0	600	4	1 13/16	1 1/16
TRS-604	4.0	600	3 1/2	2 1/2	1 1/16
TRS-605	5.0	600	4	2 1/2	1 1/16
TRS-606	6.0	600	4 3/4	2 1/2	1 1/16
TRS-608	8.0	600	3 1/2	3 3/4	1 1/4
TRS-6010	10.	600	4	3 3/4	1 1/4
TRS-612	12.	600	4 3/4	3 3/4	1 1/4
TRS-6020	20.	600	4	3 3/4	2 1/4
TRS-6040	40.	600	4 1/4	3 3/4	4 9/16
TRS-6050	50.	600	4 3/4	3 3/4	4 9/16
TRS-1050	.50	1000	2 7/8	1 13/16	1 1/16
TRS-1001	1.0	1000	2 7/8	1 13/16	1 1/16
TRS-1002	2.0	1000	4	1 13/16	1 1/16
TRS-1004	4.0	1000	4 3/4	2 1/2	1 1/16
TRS-1005	5.0	1000	4	3 3/4	1 1/4
TRS-1008	8.0	1000	4 3/4	3 3/4	1 1/4
TRS-10010	10.	1000	4 3/4	3 3/4	1 3/4
TRS-10012	12.	1000	4	3 3/4	2 1/4
TRS-10015	15.	1000	4 3/4	3 3/4	2 1/4
TRS-1510	.10	1500	2 7/8	1 13/16	1 1/16
TRS-1525	.25	1500	2 7/8	1 13/16	1 1/16
TRS-1550	.50	1500	2 7/8	1 13/16	1 1/16
TRS-1501	1.0	1500	4	1 13/16	1 1/16
TRS-1502	2.0	1500	4 1/4	2 1/2	1 1/16
TRS-1504	4.0	1500	4 3/4	3 3/4	1 1/4
TRS-1506	6.1	1500	4 3/4	3 3/4	1 3/4
TRS-2010	.20	2000	2 7/8	1 13/16	1 1/16
TRS-2025	.55	2000	2 1/2	1 13/16	1 1/16
TRS-2050	.00	2000	2 5/8	1 13/16	1 1/16
TRS-2001	1.0	2000	3 1/2	2 1/2	1 1/16
TRS-2002	2.0	2000	4	3 3/4	1 1/4
TRS-2004	4.0	2000	4	3 3/4	2 1/4
TRS-25003	.03	2500	2 1/8	1 13/16	1 1/16
TRS-2501	1.0	2500	3 1/4	3 3/4	1 3/4
TRS-2502	2.0	2500	4 3/4	3 3/4	1 3/4
TRS-2504	4.0	2500	4	3 3/4	4 9/16
TRS-30001	.10	3000	2	2 1/2	1 3/16
TRS-30002	.20	3000	2 1/2	2 1/2	1 3/16
TRS-3025	.25	3000	2 1/2	2 1/2	1 3/16
TRS-3050	.50	3000	4	2 1/2	1 3/16
TRS-3001	1.0	3000	4	3 3/4	2 1/4
TRS-3002	2.0	3000	4 1/4	3 3/4	3 9/16
TRS-3004	4.0	3000	4 3/4	3 3/4	4 9/16
TRS-4001	1.0	4000	5	3 3/4	2 1/4
TRS-600025	.25	6000	4	3 3/4	1 1/4
TRS-6001	1.0	6000	4 3/4	3 3/4	4 9/16

## Type VRC Tobe Television Type Capacitors



Designed to meet all requirements for the television service.

Hermetically sealed, mineral oil-filled.

Can be furnished in wide variety to meet specifications.

No.	Volts D.C.	Capacity Mfd.	Dimensions, In.	Ter- minals
VRC-8010	8000	0.1	3 3/4 x 2 1/4 x 4 1/8	2
VRC-16005-T1	16000	0.05	3 3/4 x 1 3/4 x 5 3/8	1

## Tobe Oil-Paper Capacitors

## Type RLO



Provides the convenient versatility of the bathtub design with the operating advantages of oil-impregnated and oil-filled construction.

Seamless, drawn case is hermetically sealed and is tinned for protection against corrosion. When specified, a lacquer finish can be furnished instead of tinning. Projecting ears on ends of case are provided for mounting.

Heavy, tinned copper soldering terminals, supported on molded phenolic insulators, can be located on the top, the bottom, or the side of the drawn metal case. The location of the terminals is indicated by suffix letters added to the type designations as follows: for terminals on the bottom, suffix L (example, RLO-L650); for terminals on the top the suffix is N; the basic type number RLO indicates terminals on the side of the case.

Characteristics of mineral oil used for impregnating and filling these capacitors are such that they can be used through a temperature range of minus 55° to plus 185°F.

Case Size	DIMENSIONS, INCHES				Overall
	Lgth.	Width	Thickness	Mgt. Ctrs.	
A-2	1 13/16	1	7/8	2 1/8	2 1/2
B-1	2	1 3/4	7/8	2 3/8	2 3/4
C-3	2	2	1 1/4	2 3/8	2 3/4

Capacity Mfd.	600 V., D.C.		1000 V., D.C.	
	No.	Case Size	No.	Case Size
0.01	RLO-6001	A2	RLO-10001	A2
0.02	RLO-6002	A2	RLO-10002	A2
0.05	RLO-6005	A2	RLO-10005	A2
0.1	RLO-610	A2	RLO-1010	A2
0.25	RLO-625	A2	RLO-1025	A2
0.5	RLO-650	A2	RLO-1050	B1
1.0	RLO-601	B1	RLO-1001	C3
2.0	RLO-602	C3		
.05-.05	RLO-6205-3	A2	RLO-10205-3	A2
.1 -.1	RLO-6210-3	A2	RLO-10210-3	A2
.25-.25	RLO-6225-3	A2	RLO-10225-3	B1
.5 -.5	RLO-6250-3	B1	RLO-10250-3	C3
1. -.1.	RLO-621-3	C3		
.05-.05-.05	RLO-6305	A2		
.1 -.1 -.1	RLO-6310	A2	RLO-10310	B1
.25-.25-.25	RLO-6325	B1	RLO-10325	C3
.5 -.5 -.5	RLO-6350	C3		

## Tobe High Temperature Capacitors

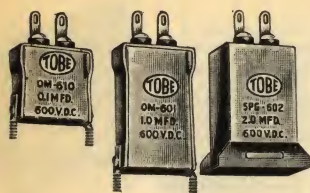
Temperatures up to 135°C. are successfully withstood by this capacitor.

Meets particular service requirements.

Inquiries are solicited on specialized capacitor designs for laboratory, research, and industrial applications.



## Tobe Oil-Mites Oil-Paper Capacitors



Oil impregnated and filled.

Hermetically sealed in drawn metal cases.

Mineral oil impregnant affords stable capacitance and power factor from minus 55°F. to plus 185°F. with insulation resistance of 2000 megohms, or higher, and

dissipation factor below 0.008 (measured at 1000 cycles).

Furnished in any of three styles: without mounting brackets; with detachable hold-down bracket permitting either upright or inverted mounting; and with permanently attached flange-type mounting bracket soldered to the case for upright or inverted mounting, according to specifications.

When ordering, state mounting style required. On special order, the type and position of terminal lug can be varied.

## 200 Volts

No.	Capacity Mfd.	CASE SIZE, INCHES		
		Height	Width	Thickness
OMM-2001	0.01	1 5/32	1 3/8	5/8
OMM-2002	0.02	1 5/32	1 3/8	5/8
OMM-2005	0.05	1 5/32	1 3/8	5/8
OMM-210	0.10	1 5/32	1 3/8	5/8
OMM-225	0.25	1 5/32	1 3/8	5/8
OMIU-250	0.50	1 7/32	1 3/8	5/8
OMIU-201	1.0	1 7/32	1 3/8	5/8
OM-202	2.0	2 1/2	1 3/16	1 3/16
OMM-2205	2x0.05	1 5/32	1 3/8	5/8
OMM-2210	2x0.10	1 5/32	1 3/8	5/8

## 400 Volts

No.	Capacity Mfd.	Height	Width	Thickness
OMM-4001	0.01	1 5/32	1 3/8	5/8
OMM-4002	0.02	1 5/32	1 3/8	5/8
OMM-4005	0.05	1 5/32	1 3/8	5/8
OMM-410	0.10	1 5/32	1 3/8	5/8
OMM-425	0.25	1 5/32	1 3/8	5/8
OMIU-450	0.50	1 7/32	1 3/8	5/8
OM-401	1.0	2 1/4	1 3/8	5/8
OM-402	2.0	2 1/2	1 3/16	1 3/16
OMM-4205	2x0.05	1 5/32	1 3/8	5/8
OMM-4210	2x0.10	1 5/32	1 3/8	5/8

## 600 Volts

No.	Capacity Mfd.	Height	Width	Thickness
OMM-6001	0.01	1 5/32	1 3/8	5/8
OMM-6002	0.02	1 5/32	1 3/8	5/8
OMM-6005	0.05	1 5/32	1 3/8	5/8
OMM-610	0.10	1 5/32	1 3/8	5/8
OMM-625	0.25	1 5/32	1 3/8	5/8
OMIU-650	0.50	1 7/32	1 3/8	5/8
OM-601	1.0	2 1/4	1 3/8	5/8
OM-602	2.0	2 1/2	1 3/16	1 3/16
OMM-6205	2x0.05	1 5/32	1 3/8	5/8
OMM-6210	2x0.10	1 5/32	1 3/8	5/8

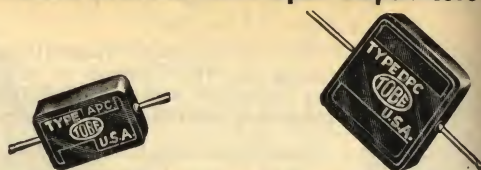
## 1000 Volts

No.	Capacity Mfd.	Height	Width	Thickness
OMM-10001	0.01	1 5/32	1 3/8	5/8
OMM-10002	0.02	1 5/32	1 3/8	5/8
OMM-10005	0.05	1 5/32	1 3/8	5/8
OMM-1010	0.10	1 5/32	1 3/8	5/8
OMIU-1025	0.25	1 7/32	1 3/8	5/8
OM-1050	0.50	2 1/4	1 3/8	5/8
OM-1001	1.0	2 1/2	1 3/16	1 3/16

Dimensions include thickness of bracket.

Flange mounting adds 1/32-inch to height and 1/16-inch to width; designate flange mount by prefix SPG in number (example SPG-1001 is 1 mfd. 1000 v. capacitor with flange mounting).

## Tobe Molded Oil-Paper Capacitors



Designed for use where the requirements are for minimum-size, easily installed capacitors capable of withstanding temperature and humidity beyond the usual limits for tubular by-pass capacitors.

Non-inductively wound, paper-dielectric sections are thoroughly vacuum-dried, impregnated with mineral oil, and molded in mica-filled phenolic housings.

Non-hygroscopic lacquer coating, applied to the completed capacitor, seals the phenolic and minimizes moisture absorption.

Suitable for use at radio frequencies up to 40 megacycles, for audio frequency by-pass service, and for use in filter circuits, these units have extremely low series resistance, high shunt resistance, and can carry relatively large R.R. currents. Compact, rectangular shape and light weight allows them to be mounted by connecting leads alone.

For applications under extreme humidity and tropical conditions, these capacitors can be furnished with a neoprene terminal seal, bonding the wire terminal leads to the phenolic case and assuring positive protection against moisture.

## Type APC—Size, 1 1/16x2 3/4x7/32 Inches

No.	Capacitance Mfd.	Working Voltage, D.C.			
		200	400	600	800
APC-0005	500	200	400	600	800
APC-001	1000	200	400	600	800
APC-0015	1500	200	400	600	800
APC-002	2000	200	400	600	800
APC-003	3000	200	400	600	800
APC-004	4000	200	400	600	800
APC-005	5000	200	400	600	800
APC-006	6000	200	400	600	800
APC-007	7000	200	400	600	800
APC-008	8000	200	400	600	800
APC-01	10000	200	400	600	800

## Type DPC—Size, 1 1/16x2 3/4x1/4 Inches

No.	Capacitance Mfd.	200	400	600	800	1000
DPC-001	1000	200	400	600	800	1000
DPC-0015	1500	200	400	600	800	1000
DPC-002	2000	200	400	600	800	1000
DPC-0025	2500	200	400	600	800	1000
DPC-003	3000	200	400	600	800	1000
DPC-004	4000	200	400	600	800	1000
DPC-005	5000	200	400	600	800	1000
DPC-006	6000	200	400	600	800	1000
DPC-007	7000	200	400	600	800	1000
DPC-008	8000	200	400	600	800	1000
DPC-01	10000	200	400	600	800	1000
DPC-015	15000	200	400	600	800	1000
DPC-02	20000	200	400	600	800	1000
DPC-03	30000	200	400	600	800	1000
DPC-04	40000	200	400	600	800	1000
DPC-05	50000	200	400	600	800	1000

## Type EPC—Size, 1 1/16x2 3/4x1/2 Inches

No.	Capacitance Mfd.	200	400	600	800	1000
EPC-005	5000	200	400	600	800	1000
EPC-006	6000	200	400	600	800	1000
EPC-007	7000	200	400	600	800	1000
EPC-008	8000	200	400	600	800	1000
EPC-01	10000	200	400	600	800	1000
EPC-015	15000	200	400	600	800	1000
EPC-02	20000	200	400	600	800	1000
EPC-03	30000	200	400	600	800	1000
EPC-04	40000	200	400	600	800	1000
EPC-05	50000	200	400	600	800	1000
EPC-06	60000	200	400	600	800	1000
EPC-08	80000	200	400	600	800	1000
EPC-10	100000	200	400	600	800	1000
EPC-20	200000	200	400	600	800	1000

## Tobe Miniature Molded Oil-Paper Capacitors

Designed to meet requirements for miniature components to be used in hearing aids, pocket radio receivers, airborne radio apparatus, etc.

Paper-dielectric, oil-impregnated, and molded in phenolic cases, sealed to withstand 90 per cent relative humidity. Working temperatures from minus 55°C. to plus 65°C.; .001 mfd. and .005 mfd. ratings are available for plus 85°C service at additional cost.

Rated working voltage, 75 volts d.c.; capacitance tolerance, plus 60 per cent, minus 20 per cent.

No.	Capacitance Mfd.	CASE SIZE, INCHES			WIRE SIZE, IN.	
		Length	Width	Thick.	Diam.	Length
HAC-001	0.001	9/16	5/16	3/32	0.025	1 1/2
HAC-005	0.005	9/16	5/16	3/32	0.025	1 1/2
HAC-01	0.010	11/16	7/16	1/2	0.032	1 1/2
APC-05	0.050	1 1/4	29/64	1/2	0.032	1 1/2



## Western Electric Transmitters



No. 405 B-2

The Western Electric line of broadcasting transmitters includes units for standard AM service and FM service.

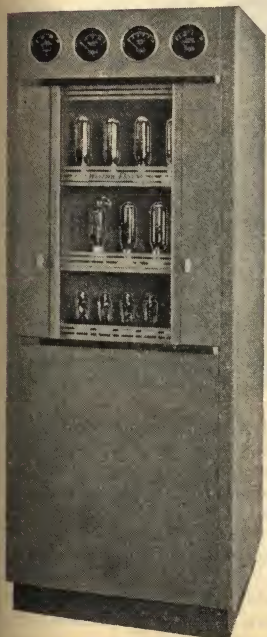
### For Standard AM Service:

No. 451A-1.....	250 Watts
No. 442A-1.....	500 Watts
No. 443A-1.....	1000 Watts
No. 405B-2.....	5000 Watts
No. 407A-1.....	50000 Watts

### For FM Service:

No. 501 C-2.....	250 Watts
No. 503B-2.....	1000 Watts
No. 504B-2.....	3000 Watts
No. 506B-2.....	10000 Watts
No. 507B-2.....	50000 Watts

## Western Electric 2A Phase Monitors



No. 451A-1



Designed for measuring the phase and amplitude relations of the currents in the antenna elements of directional arrays, so that these relations can be correlated with the field pattern.

The 2A Phase Monitor consists principally of: two meters for indicating relative amplitudes of tower current; a phase-measuring condenser and its associated circuit; an amplifier detector circuit for obtaining an indication of balance; and a self-contained power supply.

**Frequency Range:** 540 to 1600 kilocycles.

**Phase Angle Range:** 0 to 360°.

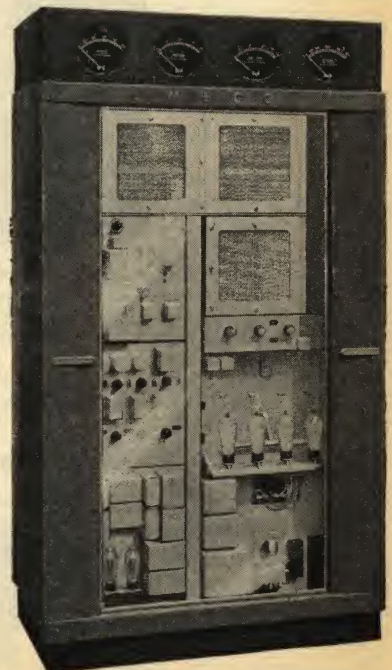
**Rated Frequency Input Power:** minimum 1/2-watt.

**Power Supply:** 105-125 volts, 40 to 60 cycles.

**Power Consumption:** 40 watts.

**Dimensions:** 16x19x8 inches.

**Weight,** 43 pounds.

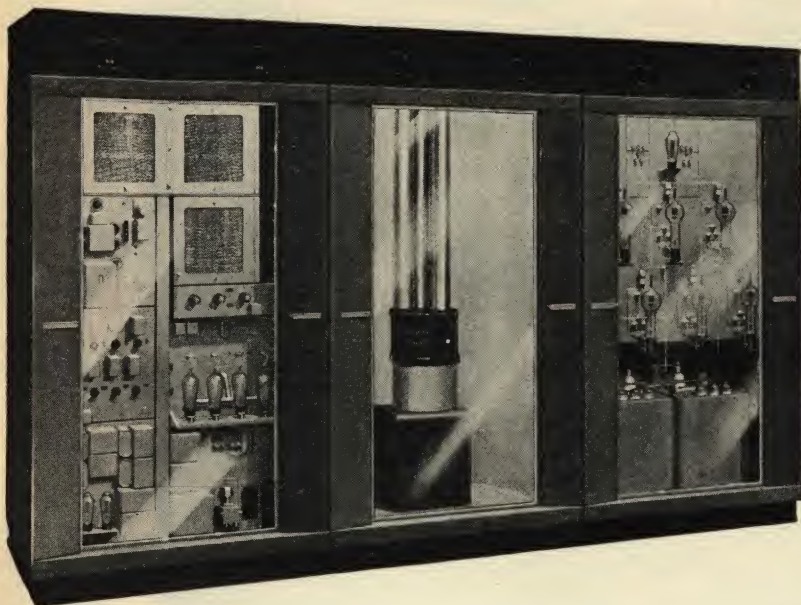


No. 503B-2



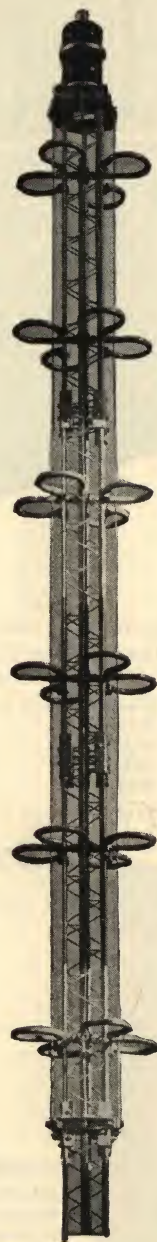
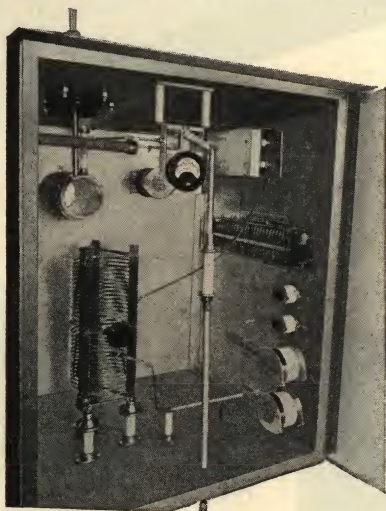
**Western Electric No. 506B-2 Transmitters**

10,000 Watts  
For FM Service

**Western Electric**

No. 54A  
Clover-Leaf  
FM Antenna

For Broadcasting

**Western Electric No. 101A Antenna Coupling Equipment**

Designed to match the impedance of a base insulated antenna having a resistance of not less than 15 ohms and a reactance of not more than 650 ohms, to the characteristic impedance of a concentric transmission line from a transmitter having a rated output power of 5 kilowatts or less at radio frequencies between 540 and 1600 kilocycles.

Series-excited antenna.

Cabinet is an all-weather metal type. Dimensions: 46 inches high; 36 inches wide; and 33 inches deep. Shipping weight, 600 pounds.

**Blaw-Knox Towers**

A complete broadcast tower line available in the following types:

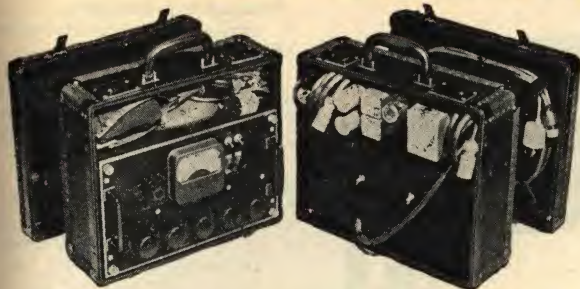
- Types CH and CN vertical AM radiators;
- Types CFN and CFH for combination FM-AM radiators;
- Types N16, N28, H21, and H40 for FM antenna support, all self-supporting;
- Types SGN, DGN, SGH, and DGH guyed towers for FM, AM, and FM-AM combination.

**No. 54A Clover-Leaf FM Broadcast Antenna**

Designed to radiate horizontally polarized radio waves and to concentrate this radiated energy in a service area surrounding the transmitting station. Engineered for frequency modulation broadcast stations operating at carrier frequencies between 88 and 108 megacycles and at power levels up to and including 50 kilowatts. The antenna, providing a power gain of 1.3 to 4.7, comprises an array of two or more vertically stacked radiating units. Each radiating unit is composed of a cluster of four curved elements which, in plan view, forms a symmetrical shape similar to a four-leaf clover.



## Western Electric No. 22D Portable Speech Input Equipment



A compact system, light in weight and designed to provide complete pick-up facilities both for established remote and for on-the-spot broadcasts.

Consists of a combination amplifier and control unit with a carrying case and a second carrying case for either a power unit for a.c. operation or a battery holder for battery operation, or both, as specified.

No. 22D includes a four channel parallel mixing circuit for operation with 30-ohm dynamic microphones or other sources of comparable impedance.

Master gain control, indirectly illuminated volume indicator, binding posts for two-program lines, jacks for two monitoring headsets, and both binding posts and a jack for an order wire telephone set are furnished.

**Frequency Response:** uniform within  $\pm 1$  decibel from 30 to 10,000 cycles.

**Source Impedance:** 30 ohms, nominal.

**Load Impedance:** 150 or 600 ohms.

**Gain:** maximum, 92 decibels; typical operating, 70 decibels.

**Maximum Output:** +18 dbm. with less than 1 per cent harmonic distortion.

**Power Supply:** a.c. operation, 110-120 volts, 50-60 cycles; power consumption is 28 watts at 115 volts; battery operation, filament 1.6 amperes at 6 volts and plate 21 milliamperes at 180 volts.

**Dimensions:** each case, approximately 14x17x8 inches.

**Weight:** complete, 50 to 60 pounds.

## Western Electric No. 1304A and No. 1304B Reproducer Sets

An electrical transcription and disc record reproducing unit for professional use in broadcasting and sound system installations.

Modern styling, harmonizes with modern studio units. Quiet, dependable, trouble free, powerful drive mechanism. Standard 16-inch diameter record platter, felt surfaced. Interchangeable center pins for outside record center holes. Speed selection of either 33 $\frac{1}{3}$  or 78 rpm. by operating an electrical switch.

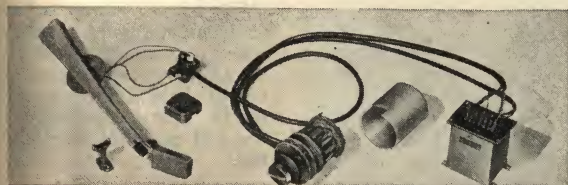
Flutter (including wow) less than 1 per cent at 33 $\frac{1}{3}$  or 78 rpm. Total playing time variation over 15 minute program at 33 $\frac{1}{3}$  or 78 rpm.,  $\pm 4.5$  seconds, (platter speed constant within  $\pm 5$  per cent.)

Turntable has built-in isolation to eliminate motor and building vibrations as a factor in operation. No rubber-tired or rim-drive wheels to flatten or wear out. Ample proportioning of power transmission mechanism. Rapid starting, from standstill to full constant speed in approximately  $\frac{1}{2}$  revolution at 33 $\frac{1}{3}$  rpm. and 1 $\frac{1}{2}$  revolutions at 78 rpm. Operates on 115-volt ( $\pm 5$  per cent), 60 cycles a.c. Motor and drive pulley replaceable for application with other than 115-volt, 60 cycle a.c. power.

Lubrication and inspection accomplished by removing the turntable platter.



## Western Electric Type 109 Reproducer Groups



For faithful reproduction of both vertical and lateral cut disc type recordings. Meets the requirements of radio broadcasting and high quality sound distribution systems.

**No. 109AA Reproducer Group** consists of: No. 9A reproducer, No. 5A reproducer arm, No. KS-13386 equalizer and cable assembly, No. 171A repeating coil, and No. 711A bracket.

**No. 109B Reproducer Group** consists of: No. 9B reproducer, No. 5A reproducer arm, No. KS-13386 equalizer and cable assembly, No. 171A repeating coil, and No. 711A bracket.

Nos. 9A and 9B reproducers differ only in stylus tip radius and material. Either plays vertical or lateral records but No. 9A favors vertical and No. 9B lateral reproduction.

## Western Electric No. 120C Pre-Mixing Amplifiers

Designed to fulfill requirements as a pre-mixing or booster amplifier and for use in no gain bridging amplifier circuits. A compact, two-stage, 44-decibel gain amplifier unit having excellent frequency response, low distortion, and a balanced input transformer with an electrostatic shield and extra electromagnetic shielding.

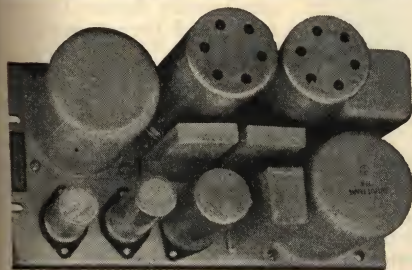
Resistors in cathode circuits are provided to permit checking the currents of the tubes by means of a Western Electric No. KS-10003 type or equivalent meter.

**Frequency Response:** flat within  $\pm 1$  decibel over the range 50 to 15,000 cycles, from nominal impedances.

**Source Impedance:** 30 or 250 ohms, nominal.

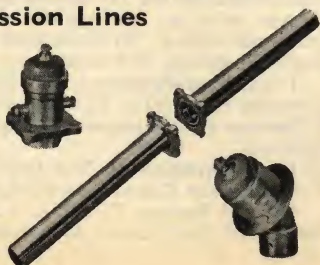
**Load Impedance:** 600 ohms.

**Gain:** 44 decibels.



## Transmission Lines

Graybar distributes Communication Products Aircore concentric transmission lines and fittings in sizes from  $\frac{1}{4}$ -inch to 6 $\frac{1}{2}$  inches to meet all requirements for standard and FM broadcast as well as dehydrators and line maintenance accessories.



## Western Electric

### No. 5A Frequency and Modulation Monitors

The Western Electric 5A Frequency and Modulation Monitor for FM broadcast-stations fulfills all the F.C.C. and RMA requirements by a good margin, and incorporates many features which extend its usefulness.





## Western Electric No. 25B Speech Input Equipment

A complete a.c. operated broadcast studio console-type program production unit for the amplification, control, and monitoring of programs originated by microphones, transcriptions, remote lines or equivalent sources.

Has two main program channels capable of simultaneous operation on separate programs without interference, plus a monitor amplifier for loud-speaker monitoring and cueing operations.

Terminals are provided for eight microphone or low level transcription input circuits and switching keys are included for selection of either of two low level inputs for each of four pre-amplifiers.

Three additional simultaneous microphone inputs can be had by using the line mixers and external amplifiers.

Consists of five principal units: the desk style No. 40A Console Control Unit, the No. KS-10284 Table, a compact No. 12A Power Supply, and two flush type wall junction boxes (Nos. 7A and 7B).



**Frequency Response:**  $\pm \frac{1}{2}$  decibel, 50 to 15,000 cycles.

**Source Impedance:**

Microphone Inputs, 30, 250, or 600 ohms, nominal; Line Inputs, 600 ohms; Utility Inputs, 600 ohms; Air cue Inputs, 600 ohms.

**Load Impedance:**

Line Output, 600 ohms; Addition Output, 600 ohms; Monitor-Amplifier Outputs, furnished adjusted for loud-speaker impedances of 3 to 10 ohms (may be reconnected to impedances 1 to 1200 ohms).

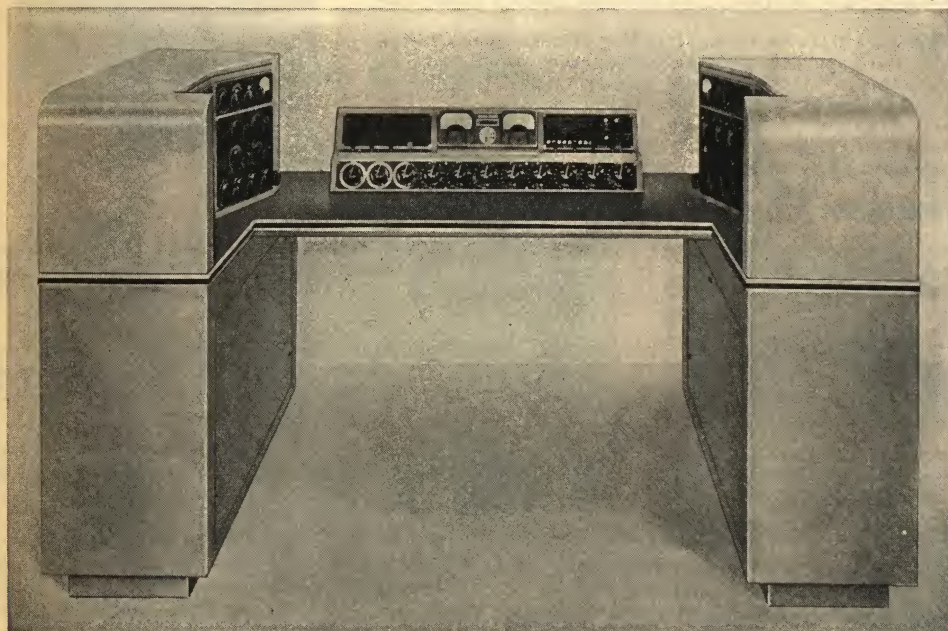
**Maximum Output Power:**

+18 dbm., allows 10 decibel margin for peak factor above +8 vu. which is the normal program output for the equipment.

**Power Source:** 105-125 volts, 50 to 60 cycles a.c., approximately 225 watts.

**Dimensions:** Console, 36x55x28 inches; Power Supply, 16 $\frac{1}{2}$ x28x10 inches; Junction Boxes, 18x20x4 inches.

## Western Electric Custom-Built Consoles

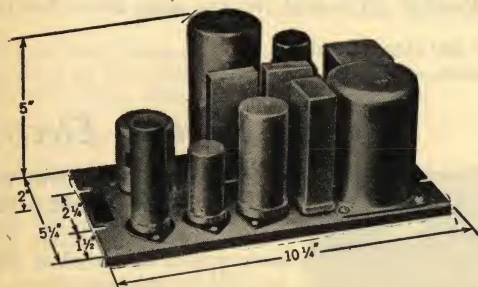


Western Electric Custom-Built Consoles, engineered to customer's requirements, are noted for their versatility, utility, and attractive appearance.

They are designed to have uniform frequency response, inherently low distortion level, and low noise level, all better than the limits set by the FCC for the highest quality AM and FM broadcasting.

Each installation incorporates standard Western Electric components combined into circuit arrangements and cabinet designs to meet individual requirements.

## Western Electric Type 132 Main Amplifiers



**No. 132A Main Amplifier** is a compact, two-stage main amplifier for feeding normally equalized transmission lines or master switching circuits, with adequate power to handle

program bus systems or studio auditioning facilities. Operates from an external power supply, and is suited for desk or rack mounting. Resistors in cathode circuits permit tube checks.

**No. 132B Amplifier** is essentially the same as No. 132A except that it has 50 decibel gain, a balanced input transformer with an electrostatic shield and an extra electromagnetic shield. The nominal source impedances for No. 132B are 30 and 250 ohms.

**Frequency Response:** No. 132A, uniform within 1 decibel over the range 50 to 15,000 cycles, nominal impedances.

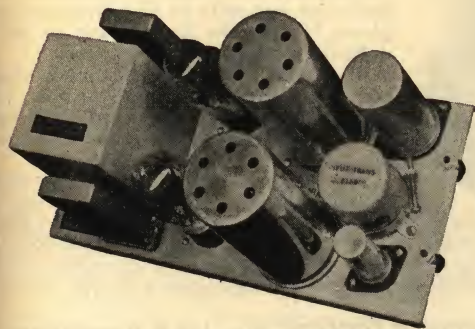
**Source Impedances:** No. 132A, 30 or 250 or 600 ohms, nominal.

**Load Impedance:** No. 132A, 600 ohms.

**Maximum Gain:** No. 132A, 48 decibels.

**Output Power:** No. 132A, +29 dbm. with 1 per cent total harmonic distortion at 400 cycles; +27 dbm. at 50 to 7500 cycles.



**Western Electric No. 133A Line Amplifiers**

A multi-purpose unit of the two-stage, push-pull type, with stabilized feedback.

Can be used as a line amplifier, an isolation amplifier, a general monitor amplifier.

Has sufficient power for many line and studio loud-speaker applications.

Incorporates an output transformer with taps, which will satisfactorily feed circuit impedances over a range from 1 to 1200 ohms. Resistors in cathode circuits permit easy tube checks with a Western Electric No. KS-10003 meter or equivalent.

**Frequency Response:** uniform within  $\pm 1$  decibel over the range 50 to 15,000 cycles, from nominal impedances.

**Source Impedance:** nominal, 600 ohms for matching, 600 ohms circuit for bridging (input impedance approximately 20,000 ohms for bridging).

**Load Impedance:** tapped transformer for operation into 1 to 1,200 ohms load.

**Gain:** 47 decibels with 600-ohm source input; 21.5 decibels when bridged on 600-ohm circuit.

**Maximum Output Power:** 4 watts (+36 dbm.) with 1 per cent harmonics, 50 to 7500 cycles; 8 watts (+39 dbm.) with 2 per cent harmonics, 50 to 7500 cycles.

**Western Electric No. 20B Rectifiers**

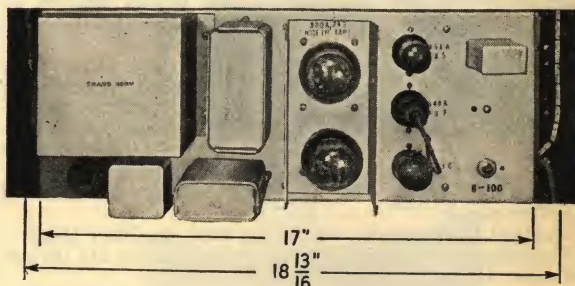
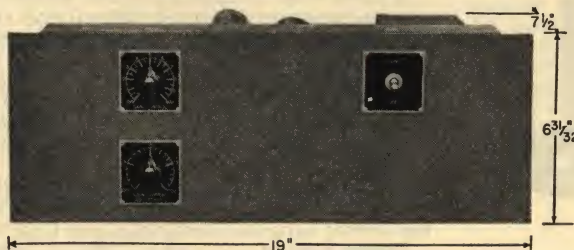
A full-wave vacuum tube rectifier incorporating a vacuum tube voltage regulating circuit.

Has negligible internal impedance which minimizes coupling between amplifiers due to the use of a common plate supply source.

**Input:** 100-130 volts, 50 to 60 cycles; power consumption, 196 watts, 1.7 amperes for rated load.

**Output:** rated load, plate supply 110 milliamperes at 275 volts d.c.; and filament supply, 10 amperes at 6.3 volts a.c.

Designed to mount on standard 19-inch relay rack or cabinet.

**Western Electric No. 124F Monitor and Talkback Amplifiers**

For speech input or sound systems.

Combines monitoring facilities, heretofore requiring two amplifiers, into a single, high quality, three-stage unit.

Incorporates two separate input circuits, offering the control engineer a means of feeding program to booth and studio loudspeakers, as well as cue-feeding to remote lines either from low level sources (microphones and reproducers) or from line or bus level sources.

The low level circuit is designed to permit talkback and cue to performers in an associated studio.

Each of the two input circuits provides a margin of gain adequate to satisfy all requirements for its particular type of service.

Separate gain controls are supplied which, in case of the low level input, may be duplicated at a remote point, if desired, as a measure of operating convenience.

Connected for an output power of 12 watts, normally considered ample for most monitoring conditions. If more than one loudspeaker is to be driven, however, or if a high volume level is required, 20 watts can be made available by a simple change in the wiring connections and using Western Electric tubes.

Tapes are provided in the output transformer which can be adjusted for operation into impedances ranging from 1 to

1200 ohms, so that a wide variety of loud speaker combinations can be matched in impedance without loss of power or introduction of harmonics.

**Frequency Response:** uniform within  $\pm 1$  decibel over the range 50 to 15,000 cycles with microphone input.

**Source Impedance:** Line input, 600 ohms or bridging; low level input, 15 to 250 ohms.

**Load Impedance:** 1 to 1200 ohms.

**Gain:** line input, 60 decibels maximum (600-ohm matching connection); 47 decibels maximum (20,000-ohm bridging connection); low level input, 104 decibels maximum.

**Gain Control:** line input, 20 decibels in 1 decibel steps, with off position; low level input, 35 decibels continuously adjustable with off position; (low level control on d.c. bias basis; either or both gain controls can be located remotely from amplifier).

**Output Power:** 12 watts (+41 dbm.) as shipped; 20 watts (+43 dbm.) available.

**Power Supply:** 105-125 volts, 50-60 cycles, 1.25 amperes, 125 watts.

**Dimensions:** height, 7 inches; width, 19 inches; depth, 7 inches.



## Western Electric No. 633A Dynamic Microphones



Designed for radio broadcasting, public address, announcing, and sound distribution systems.

For use with equipment nominally rated for 25 to 50 ohms source impedance.

Features ruggedness, dependability, high quality and either non-directional or semi-directional performance.

## Western Electric No. 640AA Microphones



In the broadcasting field, associated with its companion No. RA-1095 (single stage) Amplifier, the No. 640AA assures ultra-faithful sound pick-up.

Operates into high impedance grid circuit of closely associated vacuum tube amplifier

(such as Western Electric No. RA-1095 Amplifier).

Polarizing voltage, 200 volts, d.c., from well-regulated noise-free supply.

Mounted in structure containing first amplifier stage.

Dimensions: cylindrical shape, approximately 1x1 inches.

Weight, 1½ ounces.

## Western Electric Type 639 Microphones



Pre-eminent in the field of sound pick-up because of its high quality and cardoid directivity.

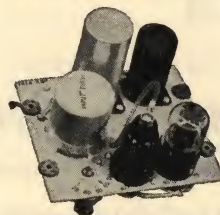
Excellent for broadcast and public address use, not only as all-purpose microphone but also as the solution to many difficult pick-up problems.

A combination of a dynamic moving coil type pressure element and an improved ribbon type velocity-actuated element enclosed in an attractive housing.

When these elements are combined equally, the directional characteristic is the heart-shaped cardoid curve C. Use of each element alone presents patterns D (dynamic), circular and R (ribbon), 8.

These characteristics are available with No. 639A or No. 639B. Additional patterns are available with No. 639B.

## Western Electric No. 141A Amplifiers



A three-stage pre-amplifier for use with basic (Nos. 142A and 143A) amplifiers and other amplifier combinations in public address and sound distribution systems. Meets requirements of R.M.A.

One No. 141A may be mounted on and arranged to derive its necessary power supplies from one of the basic amplifier units. Dimensions: 4½x5¼x5 inches.

**Frequency Response:** ±1 decibel from 35 to 15,000 cycles, from nominal impedance.

**Source Impedance:** 30, 250, and 600 ohms, nominal.

**Load Impedance:** any impedance above 600 ohms.

**Gain:** step control 40, 50, 60, and 70 decibels into 600-ohm load.

**Maximum Output Power:** +20 dbm., 50 to 7500 cycles, for 6000-ohm load.

**Power Required:** 0.9-amp. at 6.3 v.; 15 ma. at 250 v.

## Western Electric No. 1140A Amplifiers



A three-stage, push-pull a.c.-d.c. amplifier with stabilized feedback for use in wired program service, but suitable for all applications where a moderate output power a.c.-d.c. amplifier is desired. Input circuit is for direct connection to telephone lines where local telephone company practices permit.

Consists of the No. 140 Amplifier and the No. KS-13678 Cabinet.

**Frequency Response:** ±1 decibel, 50 to 10,000 cycles, from nominal impedances; ±2 decibels, 50 to 15,000 cycles, from nominal impedances.

**Source Impedance:** nominal, 150 to 600 ohms.

**Load Impedance:** 2 to 1500 ohms.

**Maximum Gain:** approximately 60 decibels.

**Output Power:** d.c. operation, 6 watts maximum; a.c. operation, 10 watts maximum; harmonic distortion, less than 5 per cent.

**Power Supply:** a.c. or d.c., 105 to 125 volts.

Dimensions: approximately 13x8x9 inches. Finish: chassis, gray enamel; cabinet, light aluminum gray.

## Western Electric Nos. 142A and 143A Amplifiers

Basic, self-contained power amplifier units arranged for rack or cabinet mounting for fixed or portable use. Meets the requirements of the R.M.A.

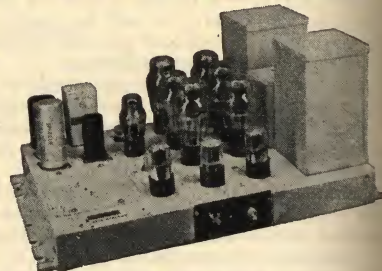
**Frequency Response:** ±1 decibel, 35 to 15,000 cycles, with high source impedance arranged to work into grid circuits.

**Load Impedance:** 2 to 24 ohms.

**Speaker Distribution Line:** 70 volts.

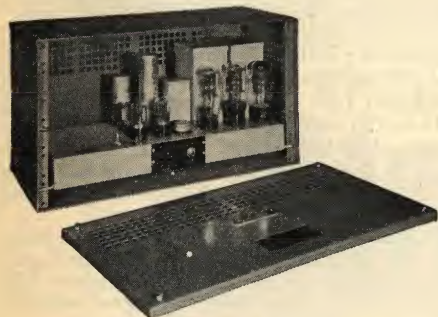
**Input Volts for Full Output:** basic chassis, 1 volt.

**Power Supply:** 110-120 volts, 50-60 cycles, a.c.



No. 143A

with less than 5 per cent harmonic distortion using Western Electric No. 350B tubes, 12 w. with No. 6L6 tubes; No. 143A, 75w., 50-7500 cy., with less than 5 per cent harmonic distortion, using Western Electric No. 350B tubes, 50 w. with No. 6L6 tubes.



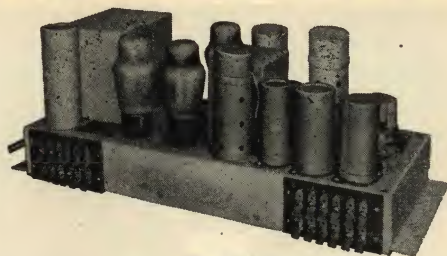
No. 142A

**Maximum Gain:** basic chassis with No. 116B Pre-Amplifier, 105 decibels; basic chassis with No. 141A Pre-Amplifier, 115 decibels; basic chassis with line transformer, 40 decibels bridging, 63 decibels high gain.

**Maximum Output Power:** No. 142A, 25w., 50-7500 cy.,



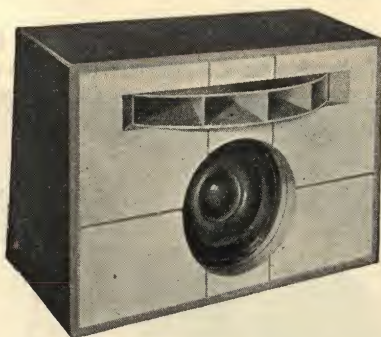
## Western Electric Nos. 124J and 124H Amplifiers



No. 124J

**No. 124J** makes use of the basic No. 124 Amplifier type of chassis and is arranged for single-channel operation. Equipped with an input transformer suitable for operation from telephone lines. Arranged for cabinet instead of relay rack mounting. Has its input and output connections brought out to screw terminals on the rear side wall of the chassis. Power is brought in through an attached cord and plug.

## Western Electric No. 757A Loudspeakers



Designed for highest quality public address and music reproduction systems and for wired program service, and for radio broadcast monitoring applications.

A two-band speaker consisting of a No. 728B Loudspeaker, No. 713C Receiver, No. KS-12027 Horn, and a No. 700A Attenuator, and a No. 702 Network mounted in a plain box.

**Frequency Range:** 60 to 15,000 cycles.

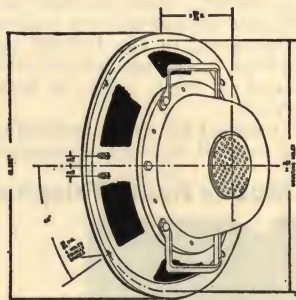
**Impedance:** 4 ohms.

**Power Capacity:** 25 watts.

**Angle of Distribution:** 90° horizontal, 90° vertical.

**Dimensions:** box, 20x30½x13¾ inches.

## Western Electric No. 728B Loudspeakers



Intended for high quality reproduction of sound in applications such as radio monitoring of speech and music, public address systems, and radio broadcast receivers.

It is a single, direct radiator type of loudspeaker.

**Nominal Frequency Response:** 60 to 8,000 cycles with a gradual roll-off to 10 decibels down at 10,000 cycles.

**Power Capacity:** 30 watts.

**Impedance:** 4 ohms.

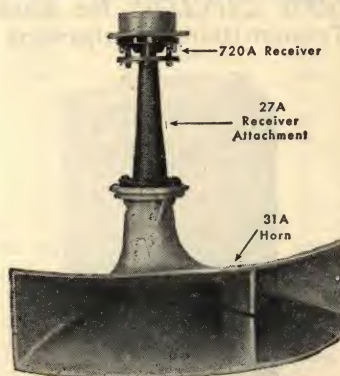
Optimum enclosure, 3 cubic feet.

**Dimensions,** approximately 13x4 inches.

**Weight,** 17 pounds.

**No. 124H** is very similar to No. 124J except that it is arranged for two-channel operation; that is, a microphone channel is provided in addition to the line channel on the No. 124J. It differs from the No. 124J in the following respects: the microphone channel is obtained by adding a No. 116B amplifier and its associated control; a line-mike switch is provided for selection of either the microphone channel or the line channel.

## Western Electric No. 720A Receivers

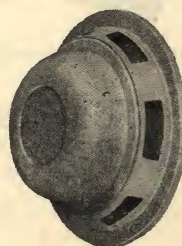


Permanent magnetic type used with the Western Electric No. 31A Horn for announcing and public address systems.

With the No. 31A Horn and No. 27A Receiver Attachment, the frequency range is 300 to 6500 cycles.

Has a phenolic diaphragm and a voice coil impedance of approximately 8 ohms and is capable, when used with a suitable horn, of handling peak powers up to 30 watts over the frequency range from 150 to 6500 cycles.

## Western Electric No. 755A Loudspeakers



Designed for a variety of applications in wired program service, public address systems, radio broadcast receivers, and radio monitoring.

A single, direct radiator type loudspeaker.

**Frequency Response:** 70 to 13,000 cycles.

**Impedance:** 4 ohms.

**Power Capacity:** 8 watts maximum.

Optimum enclosure, 2 cubic feet.

**Dimensions,** 8¾x3½ inches.

**Weight,** 4¾ pounds.



## Western Electric No. 1126C Program Operated Level Governing Amplifiers

A program operated level governing amplifier containing automatic means to reduce its gain almost instantaneously when the input level reaches a predetermined amount and to restore the gain at an adjustable rate as the input level falls below that amount.

Consists of a No. 126C three-stage, push-pull amplifier; No. 298A Control Panel; No. 20B Rectifier; and is designed to reduce excessive peaks, protecting against over-modulation in AM. Also protects against over-swing in FM; also against instantaneous overload and consequent distortion in other transmission systems.

Has an extremely short attack time.

The self-contained, automatically regulated power supply stabilizes the operation of the amplifier over a wide range of power supply conditions.



Flexible in installation due to separability of three units.

**Frequency Response:** uniform within  $\pm 1$  decibel over the range 50 to 15,000 cycles, from nominal impedance.

**Source Impedance:** 600 ohms, nominal.

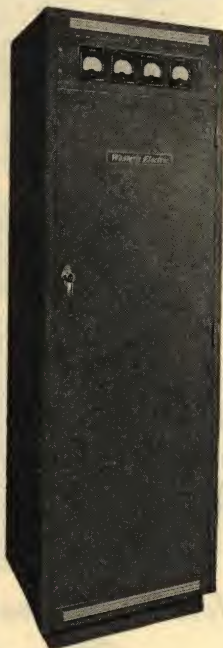
**Load Impedance:** 600 ohms.

**Maximum Gain:** 53.5 decibel maximum with all input and output fixed attenuators omitted (37 decibels as shipped with 10 decibel input and 6.5 decibel output attenuators connected) when working from 600 ohms and into 600 ohms, both adjustable attenuators at zero.

**Output Power:** +17 dbm. single frequency (as shipped and with adjustable output attenuator at zero) when gain reduction starts (+23.5 dbm., maximum, with all output fixed attenuators omitted).

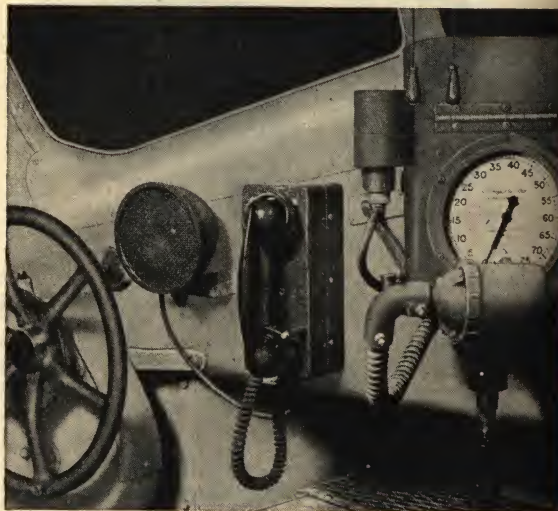
**Power Supply:** 105-125 volts, 0.7 ampere, 50-60 cycles, a.c.

## Western Electric No. 540A Radio Transmitting Equipment



For use as fixed station in mobile radio telephone service, 250 watts output.

## Western Electric Railroad Radio Telephone Communications



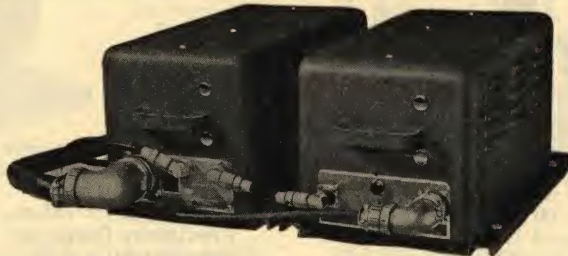
Loudspeaker and Handset Mounted in the Cab of a Diesel Locomotive

A mobile, phase-modulated radio telephone equipment designed specifically for railroad application.

Operating in the 152-162 megacycle frequency band, it provides telephone quality two-way communication for end to end of train, train to train, and fixed point to train service.

Designed for quick switching between any four frequencies located within one megacycle band.

## Western Electric Type 238 Mobile Radio Telephones



Type 238 System, featuring phase modulation and direct crystal control, is for mobile radio telephone communication in the 152-162 megacycle band. Available in two models: No. 238B for operation from a six-volt power supply; No. 238 C for operation from a twelve-volt power supply.

Adaptable for use in boats in nearby waters. Also used in urban areas.

Consists of Nos. 38B or 38C Transmitter, No. 38A Receiver, and No. 41A Control Unit, and associated antenna and accessories.



## GE Industrial Type Electronic Tubes

On this page and the next is found technical information and prices as of July 1, 1947 on a wide variety of General Electric tubes for industrial use. Any of Graybar's office and warehouse locations can furnish additional information, delivery available, and up-to-date price information (see back of catalog). Many of these tubes are carried in stock.

## Thyratrons—Grid-Controlled Gaseous-Discharge-Rectifier Tubes

No.	Each	No. of Electrodes	CATHODE		ANODE			Starting Grid Voltage	Temp. Range Condensed Mercury C.	Shipping Wt., Lb.
			Volts	Amperes	Peak Inv. Volts	Peak Amperes	Average Amperes			
GL-546	\$1.70	4	6.3	0.15	500	0.100	0.020	Negative	-40—+80	3
GL-884	1.70	3	6.3	0.60	350	0.300	0.075	Negative	.....	3
GL-885	1.80	3	2.5	1.40	350	0.300	0.075	Negative	.....	3
GL-2051	1.70	4	6.3	0.60	700	0.375	0.075	Negative	.....	3
GL-502-A	1.80	4	6.3	0.60	1300	0.500	0.100	Negative	.....	3
GL-2050	1.70	4	6.3	0.60	1300	0.500	0.100	Negative	.....	3
FG-178-A	20.00	3	2.5	2.25	500	0.500	0.125	Negative	-20—+50	2
FG-81-A	14.50	3	2.5	5.00	500	2.000	0.500	Negative	-20—+50	2
FG-98-A	22.00	4	2.5	5.00	500	2.000	0.500	Negative	-20—+50	4
FG-97	20.00	4	2.5	5.00	1000	2.000	0.500	Variable	40—80	4
GL-5557	6.50	3	2.5	5.00	5000	2.000	0.500	Negative	40—80	3
GL-627	15.00	3	2.5	6.00	2500	2.500	0.640	Negative	25—70	1
GL-3C23	12.00	3	2.5	7.00	1250	6.000	1.500	Negative	-40—+80	3
GL-393-A	12.00	3	2.5	7.00	1250	6.000	1.500	Negative	-40—+80	3
GL-672	25.00	4	5.0	6.00	1500	30.000	2.500	Negative	40—80	1 3/4
FG-154	32.00	4	5.0	7.00	500	10.000	2.500	Negative	-20—+50	7
GL-559	40.00	3	5.0	7.50	15000	6.000	1.600	Negative	25—50	3
FG-27-A	19.00	3	5.0	4.50	1000	10.000	2.500	Negative	40—80	3
FG-33	19.00	3	5.0	4.50	1000	15.000	2.500	Positive	35—80	7
GL-559	17.50	3	5.0	4.50	1000	15.000	2.500	Negative	40—80	7
FG-67	21.00	3	5.0	4.50	1000	15.000	2.500	Variable	40—80	3
GL-5560	21.00	4	5.0	4.50	1000	15.000	2.500	Variable	40—80	7
			15.5	5.00	1000	40.000	0.500	Variable	40—80	7
			5.0	10.00	2500	40.000	6.400	Variable	40—80	7
FG-105	44.00	4	15.5	11.00	750	77.000	2.500	Variable	30—95	7
			15.0	10.00	10000	16.000	4.000	Variable	25—50	7
FG-172	42.00	4	5.0	10.00	2000	40.000	6.400	Variable	40—80	7
			15.5	11.00	750	77.000	2.500	Variable	30—95	7
FG-44	165.00	3	5.0	20.00	10000	75.000	12.500	Negative	40—65	8
GL-414	100.00	4	5.0	20.00	2000	100.000	12.500	Negative	40—80	9

## Glow Tubes—Cold Cathode Tubes

## For Use as Voltage Regulators

No.	Each	Minimum Starting Supply Voltages, D.C.	Approximate Operating Voltage Maintained, D.C.	OPERATING CURRENT, MILLIAMPERES		Shipping Wt., Lb.
				Minimum	Maximum	
GL-OA3/VR-75	\$1.20	105	75	5	40	3
GL-OB3/VR-90	1.20	125	90	10	30	3
GL-874	2.50	125	90	10	50	3
GL-OC3/VR-105	1.20	133	105	5	40	3
GL-OD3/VR-150	1.20	185	150	5	40	3

## Phototubes—Light-Sensitive Tubes

No.	Each	Type	Spectral Response R.M.A. Standard	Anode Volts	Sensitivity in Microamperes per Lumen	Window Dimensions Inches	Maximum Ambient Temp. C.	Shipping Wt., Lb.
GL-1P29/FJ-401	\$2.55	Gas	S3	100	...	1 1/16 x 1 5/8	100	3
PJ-22	2.20	Vacuum	S1	500	20	1 1/16 x 1 5/8	100	3
GL-935	6.75	.....	..	...	...	.....	...	...
GL-441	4.50	Vacuum	S4	250	45	1 1/16 x 1 5/8	50	3
GL-868/PJ-23	2.15	Gas	S1	100	50	1 1/16 x 1 5/8	100	3
GL-917	3.00	Vacuum	S1	500	20	1 1/16 x 1 5/8	100	3
GL-918	2.60	Gas	S1	100	110	1 1/16 x 1 5/8	100	3
GL-919	3.00	Vacuum	S1	500	20	1 1/16 x 1 5/8	100	3
GL-920	3.60	Gas	S1	100	75	1/4 x 1 (Each Unit)	100	3
GL-921	1.75	Gas	S1	90	135	5/8 x 7/8	100	3
GL-922	1.80	Vacuum	S1	500	20	5/8 x 5/8	100	3
GL-923	1.75	Gas	S1	90	135	1 1/16 x 7/8	100	3
GL-927	2.50	Gas	S1	90	125	7/16 x 7/8	100	3
GL-929	1.75	Vacuum	S4	250	45	1 1/16 x 7/8	50	3
GL-930	1.50	Gas	S1	90	135	1 1/16 x 7/8	100	3
GL-931-A	9.25	Vacuum	S4	1250	2.0 Amps.	1 1/32 x 1	50	3

## Ballast Tubes—Resistor-Type Tubes

## Used to Maintain a Constant Average Current

No.	Each	Volts		AMPERES		Shipping Wt., Lb.
		Minimum	Maximum	Minimum	Maximum	
FB-50	\$5.50	5	8	0.225	0.275	3
B-25	5.00	7	16	1.070	1.160	3
B-47	6.00	8	18	2.050	2.350	3
B-46	6.00	8	18	2.700	3.250	3
B-6	7.00	15	21	0.950	1.010	3

\*Inert gas-filled, and the temperature ratings are expressed in terms of the ambient temperature range over which the tubes will operate.

†Apply only when the tube is used for ignitor firing.

‡Apply only when the tube is used in Thyratron welding-control service.



## GE Industrial Type Electronic Tubes—Concluded

## Ignitrons—High-Peak-Current, Pool-Cathode Tubes

No.	Each	Kva. Demand	Welding Control Types		Corresponding Kva. Demand	Type of Cooling	Shipping Wt., Lb.
			Corresponding Average Anode Current, Amps.	Maximum Average Anode Current, Amps.			
GL-415	\$42.00	300	12.1	22.4	100	Water	5
FG-271	70.00	600	30.2	56.0	200	Water	12
FG-235-A	105.00	1200	75.6	140.0	400	Water	17
FG-258-A	230.00	2400	192.0	355.0	800	Water	41

No.	Each	Volts D.C.	Power Rectifier Types		Average Amps. 1 Minute	Type of Cooling	Shipping Wt., Lb.
			Peak Amperes	Average Amperes			
GL-427	\$70.00	125	30	5.0	...	.....	3
FG-238-B	320.00	300	1800	300.0	400	Water	35
		600	1200	225.0	300	Water	35
FG-259-B	165.00	300	900	150.0	200	Water	22
		600	600	112.5	150	Water	22

## Kenotrons—High-Vacuum Rectifier Tubes

No.	Each	No. of Electrodes	CATHODE		PLATE		Shipping Wt., Lb.
			Volts	Amperes	Peak Volts	Peak Amperes	
FP-400	\$18.00	2	4.0	2.25	100	0.025	3
FP-85-A	19.00	2	10.0	5.00	20000	0.100	3
GL-8020	20.00	2	5.0	6.00	40000	0.750	8
GL-411	190.00	2	10.0	14.50	100000	0.300	9
KC-4	210.00	2	20.0	24.50	150000	0.750	9

## Phanotrons—Gaseous-Discharge Rectifier Tubes

No.	Each	No. of Electrodes	CATHODE		Peak Volts	Peak Amperes	Average Amperes	Temp. Range Condensed Mercury, C.	Shipping Wt., Lb.
			Volts	Amperes					
GL-866-A/866	\$1.75	2	2.5	5.0	10000	1	0.25	25—60	3
FG-190	29.00	3	2.5	12.0	175	5	1.25	*—20—+50	3
GL-872-A/872	7.50	2	5.0	7.5	10000	5	1.25	20—60	8
GL-8008	7.50	2	5.0	7.5	10000	5	1.25	20—60	8
FG-32	12.00	2	5.0	4.5	1000	15	2.50	40—80	3
GL-575-A	26.00	2	5.0	10.0	15000	6	1.50	20—60	3
GL-673	26.00	2	5.0	10.0	15000	6	1.50	20—60	3
GL-869-B	120.00	2	5.0	18.0	20000	15	2.50	30—40	7
					15000		15.00		
FG-280	39.00	2	5.0	10.0	2000	40	6.40	40—80	3
FG-104	33.00	2	5.0	10.0	3000	40	6.40	40—80	3
GL-857-B	190.00	2	5.0	30.0	22000	20	5.00	30—40	10
FG-166	100.00	2	2.5	100.0	1500	75	10.00	20—60	6

## Pliotrons—Grid-Controlled High-Vacuum Tubes

Control Types									
No.	Each	No. of Electrodes	CATHODE		PLATE		Maximum Dis. Watts	Micron	Shipping Wt., Lb.
			Volts	Amperes	Maximum Volts	Maximum Amperes			
PJ-21	\$10.00	3	4.5	1.10	350	0.0190	7.5	3.0	3
PJ- 7	9.00	3	4.5	1.10	350	0.0400	10.0	30.0	3
PJ- 8	8.00	3	4.5	1.10	350	0.0400	10.0	8.5	3
Specific Purpose									
FP-54	\$60.00	4	2.5	0.09	6	0.0060	Low Grid Current Measurement Tube		7
FP-62	40.00	3	4.5	1.48	112.5	0.0100	For Gas-Pressure Measurements		9

## Therapy Types

No.	Each	No. of Electrodes	CATHODE		Maximum Volts	Maximum Amperes	Maximum Input Watts	Maximum Dis. Watts	Micron	Shipping Wt., Lb.
			Volts	Amps.						
FP-285	\$18.00	3	10	3.25	1350	0.200	270	100	12	6
FP-265	27.00	3	10	5.20	1500	0.200	350	160	75	6

## Power Triodes—For High-Frequency Heating

No.	Each	No. of Electrodes	CATHODE		Maximum Volts	Maximum Amperes	Maximum Dis. Watts	Micron	Type of Cooling	Shipping Wt., Lb.
			Volts	Amperes						
GL-592	\$25.00	3	10.0	5.00	3500	0.250	200	24.0	.....	8
GL-807	2.30	5	6.3	0.90	600	0.100	25	8.0	.....	3
GL-810	12.50	3	10.0	5.40	2000	0.250	125	36.0	.....	8
GL-833-A	45.00	3	10.0	10.00	3000	0.500	300	35.0	.....	9
GL-851	230.00	3	11.0	15.50	2500	1.000	750	20.5	.....	8
GL-8002	120.00	3	16.0	39.00	3500	1.000	1200	20.5	Water	5
GL-889-A	190.00	3	11.0	125.00	8500	2.000	5000	21.0	Water	8
GL-889R-A	280.00	3	11.0	125.00	8500	2.000	5000	21.0	Forced-Air	52
GL-891	200.00	3	22.0	60.00	12000	2.000	6000	8.0	Water	10
GL-891-R	345.00	3	11.0	60.00	10000	2.000	4000	8.0	Forced-Air	..
GL-207	220.00	3	11.0	51.00	15000	2.000	10000	20.0	Water	10
GL-892	200.00	3	22.0	60.00	15000	2.000	10000	50.0	Water	10
GL-892-R	345.00	3	11.0	60.00	12500	2.000	4000	50.0	Forced-Air	..
GL-880	440.00	3	12.6	320.00	10500	6.000	20000	20.0	Water	21
GL-893-A	570.00	3	20.0	183.00	20000	4.000	20000	36.0	Water	25
GL-862-A	1050.00	3	33.0	207.00	20000	10.000	100000	45.0	Water	90
GL-893A-R	1050.00	3	10.0	61.00	20000	4.000	20000	25.0	Forced-Air	290
GL-895	825.00	3	19.0	138.00	17000	9.000	40000	37.0	Water	85
GL-895-R	1125.00	3	19.0	138.00	17000	9.000	20000	37.0	Forced-Air	455
GL-8002-R	137.50	3	16.0	38.00	3500	1.000	1200	20.5	Forced-Air	..

\*Inert gas-filled, and the temperature ratings are expressed in terms of the ambient temperature range over which the tubes will operate.

†For voltages of 600 volts rms. and below. Ignitor requirements are 200 volts and 30 amperes.

‡Requirements are 75–125 volts, 15–20 amperes; minimum, 150 volts, 40 amperes. §Quadrature operation.



## Thor Champion 1/4-Inch Portable Electric Drills

### Light Duty

Universal Motor—110 Volts—25 to 60 Cy.—Sgl. Ph.—A.C. or D.C.

For intermittent service. Ideal for maintenance work, automotive repair, electrical installation, plumbing, radio, cabinet work, and similar applications in wood or metal.

Capacity, 1/4-inch.

Oilite, self-lubricating bearings; special, alloy steel gears. Field case, handle and gear case are made of die-cast, aluminum alloy.

Free speed, 2000 rpm.

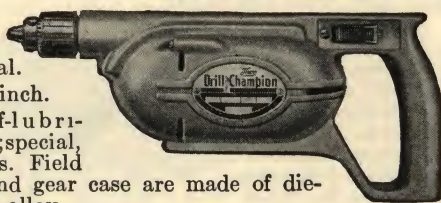
Standard equipment: 1/4-inch 3-jaw Jacobs chuck and key. Closed grip handle with recessed, thumb-control switch. 3-conductor cable with ground wire and plug.

Length, 11 3/4 inches.

Also available for 32, 220, 250 and special voltages.

Net weight, 4 pounds. Shipping weight, 6 pounds.

Each, Specify Voltage..... \$22.95



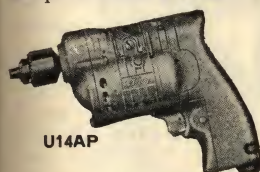
## 1/4-Inch Thor Portable Electric Drills

Universal Motor, A.C. or D.C.—For 110 Volts

A streamlined, ball bearing, lightweight drill. Heat treated alloy steel gears, extra long carbon brushes. Equipped with 3-jaw Jacobs chuck and key; 3-conductor cable with ground wire and plug. Standard voltage, 110; 220 and special voltages available if specified.

### U14AP Series—Standard Duty

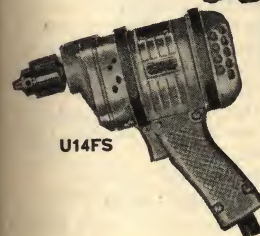
Available in four speeds for general use in maintenance and production service. Pistol grip handle, plunger switch.



No.	Each	Free Speed RPM.	Overall Length Inches	Wt. Lb.
U13AP	\$43.50	3750	7 3/4	3
U14AP	35.50	2500	7 3/4	3
U14DP	35.50	1900	7 3/4	3
U17AP	43.50	700	9	3 3/4

### U14F Series—Heavy Duty

Pistol grip handle trigger switch. Add letter S to No. for side handle with trigger switch.

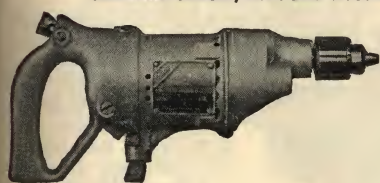


U12F	\$43.50	3750	8 5/16	3 3/4
U13F	43.50	5000	8 5/16	3 3/4
U14F	42.00	2500	8 3/4	3 7/8

All UFS series drills are \$43.00

## No. UKD 1/4-Inch Heavy Duty Thor Portable Electric Drills

Universal Motor, A.C. and D.C.—For 110 Volts



Designed for heavy duty service up to its rated capacity in production work. Armature revolves on ball bearings. Nickel-chromium, alloy steel reduction gears.

Tangential ventilation keeps motor running cool.

Free speed, 1400 rpm. Length, 12 1/2 inches.

Standard equipment: 3-jaw Jacobs chuck and key, 3-conductor cable with ground wire and plug, closed grip handle.

Net weight, 5 1/2 pounds; shipping weight, 9 pounds.

No. UKD, Specify Voltage..... each \$41.00

Also available for 32, 220 or 250 volts, as specified.

## Thor 1/4-Inch Thorite Plastic Portable Electric Drills

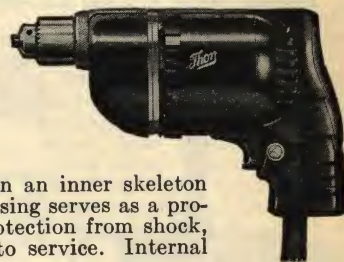
### Heavy Duty—Ball Bearing

Universal Motor—110 Volts—25 or 60 Cycles—A.C. or D.C.

A light, sturdy, durable drill with housing, field case, gear case and grip handle made of tough, specially developed Thorite plastic, a nonconductor. The operating parts are encased within an inner skeleton metal frame, plastic housing serves as a protective shell. Great protection from shock, cool-running and easy to service. Internal parts are metal mounted.

Equipped with 3-jaw Jacobs chuck and key, 3-conductor cable with ground wire and attachment plug, pistol grip handle with trigger switch.

Weight, 3 1/4 pounds. Shipping weight, 5 pounds.



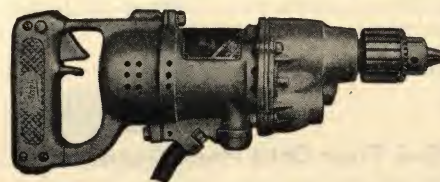
No.	U14K	U12K	U13K
Each	\$42.00	43.50	43.50
Free Speed	2500 rpm.	3750	5000

## No. UAD Thor 5/16-In. Portable Electric Drills

### Heavy Duty—Ball Bearing

Universal Motor—110 Volts, 25 to 60 Cycles, A.C. or D.C.

For production drilling in wood or metal. Fully balanced. Also used for repair service in garages, and for general maintenance work.



Standard equipment includes 3-jaw Jacobs chuck and key, 3-conductor cable with ground wire

and plug, and closed grip handle with momentary trigger switch.

Also available in 32, 220 and 250 volts; specify voltage.

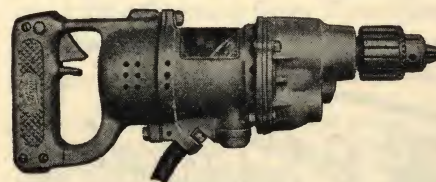
No.	UAD
Each	\$55.00
Free Speed	1700 rpm.
Length	13 3/8 inches
Net Weight	7 1/2 pounds
Shipping Weight	12 pounds

## No. UBD Thor 3/8-In. Portable Electric Drills

### Heavy Duty—Ball Bearing

Universal Motor—110 Volts, 25 to 60 Cycles, A.C. or D.C.

Used mainly in industrial plants and shops where it is necessary to drill all sizes of holes up to and including 3/8-inch.



Standard equipment includes 3-jaw Jacobs chuck and key, 3-conductor cable with ground wire

and plug, and closed grip handle with momentary trigger switch. Optional equipment includes a side switch at no extra charge; for side switch specify No. UBB.

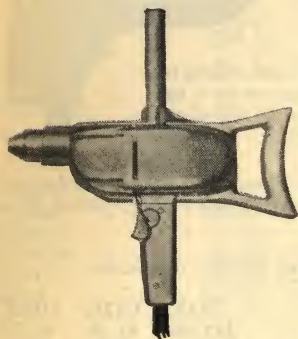
Also available in 32, 220 and 250 volts; specify voltage.

No.	UBD
Each	\$59.50
Free Speed	750 rpm.
Length	14 1/8 inches
Net Weight	8 3/4 pounds
Shipping Weight	13 pounds



## No. DMG Thor 1/2-Inch Portable Electric Drills

Universal Motor, A.C. and D.C.—For 110 Volts, 25-60 Cycles



For repair and construction work on the farm and in the home.

Can be used for wire brush work, buffing, polishing, carbon cleaning, rotary filing, and hole sawing (up to 3 inches).

Capacity in steel, 1/2 inch.

Capacity in wood, 1 inch.

Housings are heavy die-cast aluminum.

Triple-insulated motor has great overload capacity.

Bearings are permanently lubricated.

No load speed, 420 rpm. Overall length, 15 inches.

Standard equipment: Jacobs chuck with key, momentary switch with locking pin for continuous operation, side handle, closed grip handle and auxiliary handle, three-conductor cable (with ground wire), and a two-prong plug.

Weight, 9 1/2 pounds.

No. DMG.....each \$39.50

## No. DMG-5 Thor Drill Press Stands

For No. DMG Portable Electric Drill



Converts Thor No. DMG portable electric drill into a powerful drill press.

Sturdy bracket locks the tool in place quickly for stationary use.

Six-to-one leverage builds up great pressures.

Carefully machined parts assure accuracy.

Vertical movement, 7 inches.

Vertical adjustment, 12 1/2 inches.

Bench space required, 8 1/2 x 13 inches.

Weight, 40 pounds.

No. DMG-5.....each \$26.25

## Thor Champion 1/2-Inch Portable Electric Drills

Light Duty

Universal Motor—110 Volts—25 to 60 Cy.—Sgl. Ph.—A.C. or D.C.

For intermittent work in all-around shop service and occasional light production work. Also used for driving hole saws, wood augers, etc.

Capacity, 1/2-inch.

Self-lubricating bearings; special, alloy steel gears. Die-cast aluminum alloy housing.

Free speed, 420 rpm.

Standard equipment: 1/2-inch 3-jaw Jacobs chuck with key.

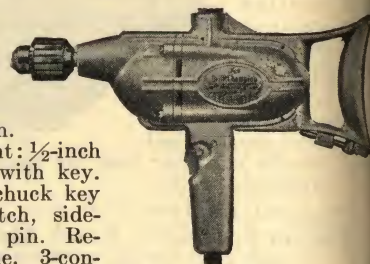
Spade handle with chuck key holder. Trigger switch, side-handle with locking pin. Removable dead handle. 3-conductor cable with ground wire and plug.

Length, 15 inches.

Also available for 32, 220, 250 and special voltages.

Net weight, 9 1/2 pounds. Shipping weight, 15 pounds.

Each, Specify Voltage.....\$39.50



## No. U44 1/2-Inch Heavy Duty Thor Portable Electric Drills

Universal Motor A.C. or D.C.—For 110 Volts, 25 to 60 Cy., Sgl. Ph.

Capacity, 1/2-inch. For continuous service on high production jobs.

Helical, alloy steel gears, insulated armature, ball bearings.

Free speed, 500 rpm.

Length, 12 inches.

Standard equipment:

1/2-inch 3-jaw Jacobs chuck and key, horizontal spade handle, side handle with lever switch which can be locked, 3-conductor cable with ground wire and plug. Detachable dead handle.

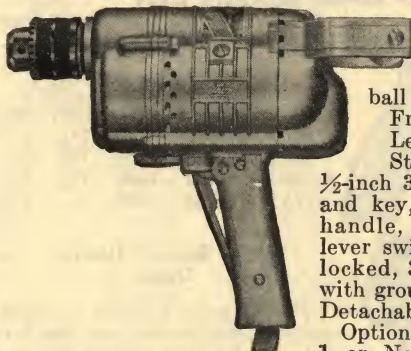
Optional equipment: No. 1 or No. 2 Morse Taper

socket instead of chuck, if specified.

Also available for 32, 220, 250 and special voltages.

Net weight, 9 1/2 pounds; shipping weight, 13 pounds.

No. U44, Specify Voltage.....each \$64.50



## No. UDA 1/2-Inch Heavy Duty Thor Electric Drills

Universal Motor, A.C. and D.C.—For 110 Volts

For deep drilling where great power and strength are required.

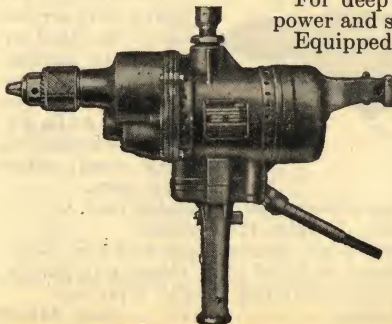
Equipped with Jacobs chuck, spade handle, side switch handle and dead handle. Feed screw may be substituted for space handle if desired.

Free speed 500 r.p.m. Overall length, 16 1/2 inches.

Weight 21 pounds.

Also available in 220 and special voltages if desired.

No. UDA, Specify Voltage.....each \$79.50





## Thor 5/8-Inch Portable Electric Drills Ball Bearing

Universal Motor, A.C. or D.C.—For 110 Volts, 25 to 60 Cy., Sgl. Ph.  
**No. UDC, Standard Duty.** For ordinary heavy duty drilling. Free speed, 600 rpm. Length, 16½ inches.

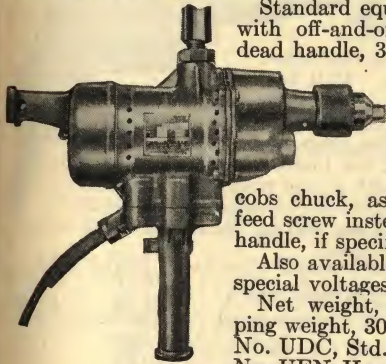
**No. UEN, Heavy Duty.** For extra heavy duty drilling, reaming, and wood boring. Free speed, 400 rpm. Lgth., 16¾ in. Capacity 5/8-inch. Gears of nickel-chromium alloy steel, heat treated, Housing of heavy section aluminum castings.

Standard equipment: Side handle with off-and-on switch, spade and dead handle, 3-conductor cable with ground wire and plug. No. UDC with 3-jaw Jacobs chuck and key; No. UEN with No. 2 Morse Taper socket or 5/8-inch Jacobs chuck, as specified. Optional feed screw instead of standard spade handle, if specified.

Also available for 32, 220, 250 and special voltages. Specify voltage.

Net weight, 22¼ pounds. Shipping weight, 30 pounds.

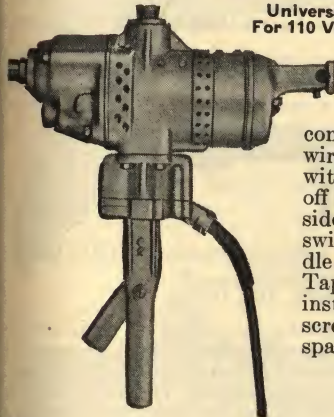
No. UDC, Std. Duty...each \$87.00  
No. UEN, Hvy. Duty...each 93.00



## Thor 3/4-Inch Heavy Duty Portable Electric Drills

Universal Motor, A.C. and D.C.  
For 110 Volts, 25 to 60 Cy., Sgl. Ph.

Std. equip.: Spade and dead handles, 3/4-inch Jacobs chuck, 3-conductor cable with ground wire and plug. No. UES, with side handle with on-and-off switch; No. UFH, with side handle with momentary switch. Ball bearing on spindle. Optional: No. 2 Morse Taper socket can be furnished instead of Jacobs chuck. Feed screw can be substituted for spade handle.



		For Low Speeds	For High Speeds
No. ....	UES	UFH	
Each.....	\$97.50	105.00	
Free Speed.....	rpm.	330	550
Length.....	inches	16¾	18¾
Net Weight.....	pounds	22	25¾

## Thor Portable Electric Drills Heavy Duty—Ball Bearing

Universal Motor, A.C. or D.C.—For 110 Volts—25 to 60 Cy.—Sgl. Ph.  
For extra heavy drilling in steel construction, etc. Gears of nickel-chromium alloy steel, heat treated.

Std. equip: Side handle with momentary switch, spade and dead handles, 3-conductor cable with ground wire and plug. No. UFS, with No. 2 Morse Taper socket; No. UFZ, with No. 3 Morse Taper socket. Optional: Feed screw can be substituted for spade handle; No. 3 Morse Taper socket for No. 2.

Also available for 220, 250 and special voltages.

	UFS	UFZ
No. ....	UFZ	
Each, Spec. Voltage..	\$110.00	132.00
Drilling Cap...in.	¾	1
Reaming Cap...in.	¾	1¼
Free Speed...rpm.	350	300
Length.....in.	16¾	20
Net Weight...lb.	25¾	29
Shipping Wt...lb.	39	39



## No. U3Z 1¼-Inch Thor Portable Electric Drills

Universal Motor, A.C. or D.C.—  
For 110 Volts, 25 to 60 Cycles—  
Single Phase

Capacity: drilling, 1¼ inches; reaming, 1½ inch. Has safety-type, quick-acting lever-switch. Free speed, 350 rpm. Length, 19⅞ inches. Standard equipment: Thor quick-acting safety-switch; feed screw; dead handle; No. 3 internal Morse taper socket and knock-out pin. Spade handle can be supplied in place of feed screw. Net weight, 49½ pounds; ship. wt., 71 lb. No. U3Z, Specify Voltage...each \$200.00

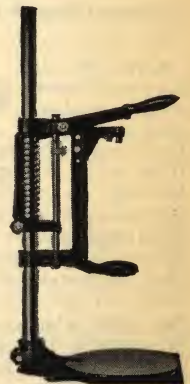
Available for 32, 220, 250, and special voltages on request. Furnished at speed of 500 rpm. at no extra cost.



## Thor Electric Drill Stands



No. 8



No. 26

Quickly converts a portable electric drill to stationary service not requiring the extreme sensitivity of the drill press. Has six to one leverage which permits tremendous pressure on the work.

Stand constructed so drill is accurately and securely arranged with minimum effort and held square and rigid.

**No. 8** accommodates drills of capacities 5/16 to 1/2 inch.

**No. 26** and **No. 30** accommodate drills of capacities 1/2 to 1 inch. When ordering, specify for what size tool.

Vertical Movement	Can Be Used with the Following Drills	Adjusted Vertically	Beach Space	Wt. Lb.	Each
No. Inches		Inches	Inches		
8 2	All U14 Class	11 13	x9	29	\$24.50
3	UL, UK, UA, UB	9 11½	x9½	32	24.50
3¾	U 44	10 13	x9	30	24.50
26 5	UDA, UEN, UFH, UFZ,	14 15	x9	50	36.00
30 5	UDA, UEN, UFH, UFZ,	14	*	68	40.00

\*Wall to center of drill, 14½ inches.

## No. UBG-D Heavy Duty Thor Portable Electric Combination Screwdrivers and Drills

Universal Motor, A.C. and D.C.—For 110 Volts, 25 to 60 Cycles, Single Phase

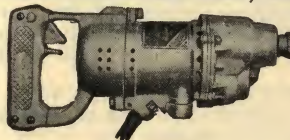
Capacity: up to No. 16 wood screws; up to 5/16-inch machine screws and nuts; and 3/8-inch drilling. Aluminum alloy casing. Ball bearings.

Free speed, 750 rpm. Length overall, 15¼ inches.

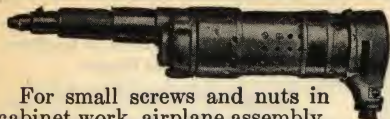
Equipped with 3-conductor cable with ground wire and plug, three bits or one socket wrench shank with socket, 3/8-inch Jacobs chuck and adaptor, positive clutch, nut or screw driving attachment, and closed grip handle with momentary trigger switch.

Weight, 9½ pounds.  
No. UBG-D. Complete, Specify Voltage.....each \$94.00

Also available for 32, 220, 250, and special voltages.





**1<sup>3</sup>/<sub>16</sub>-Inch Thor Portable Electric Screwdrivers**

Universal Motor  
A.C. or D.C.—  
For 110 Volts,  
25 to 60 Cycles

For small screws and nuts in cabinet work, airplane assembly, etc. Capacity: up to No. 8 wood screw and <sup>3</sup>/<sub>16</sub>-inch machine screw or nut. Higher speed Nos. ULN and ULT are used for machine screws; slower speed No. ULP is ordinarily preferred for wood screws.

Equipped with Thor double slip clutch attachment.

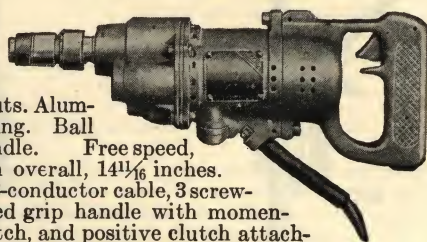
No.	ULN	ULT	ULP
Each (Specify Voltage).....	\$59.50	59.50	62.00
Free Speed.....rpm.	1500	1000	550
Length Overall.....inches	12 <sup>3</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>4</sub>
Weight.....pounds	3 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>

Available in lever switch type at \$5.00 extra; add letter W to No. Vertical suspension arrangement can also be furnished. Available in 32, 220, 250, and special voltages on request.

**No. UBG <sup>5</sup>/<sub>16</sub>-Inch Heavy Duty Thor Portable Electric Screwdrivers**

Universal Motor A.C. and D.C.— For 110 Volts, 25 to 60 Cycles, Single Phase

Capacity: up to No. 16 wood screws; and up to <sup>5</sup>/<sub>16</sub>-inch machine screws and nuts. Aluminum alloy casing. Ball bearings on spindle.



Free speed, 750 rpm. Length overall, 14<sup>1</sup>/<sub>16</sub> inches. Equipped with 3-conductor cable, 3 screwdriver bits, closed grip handle with momentary trigger switch, and positive clutch attachment. Weight, 8<sup>1</sup>/<sub>2</sub> pounds.

No. UBG, Complete, Specify Voltage.....each \$82.50  
No. UBGR, Reversible, Specify Voltage.....each \$8.25

Also available for 32, 220, 250, and special voltages.

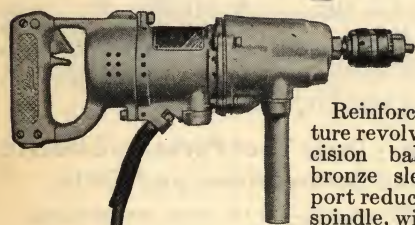
**Thor Universal Portable Electric Tappers Heavy Duty—Ball Bearing**

Universal Motor—110 Volts—25 to 60 Cy.—Sgl. Phase—A.C. or D.C.

Adapted to tapping thread holes in metal. Equipped with automatic reversing mechanism which backs tap out of the threaded hole quickly. A slight pull on the tool disengages the forward action and throws it into reverse motion.



No. UKS,  
with Plunger Switch



No. UBR,  
with Momentary Trigger Switch

Powered for continuous production service. Tangential ventilation insures cool running.

Reinforced casings. Armature revolves on oversize, precision ball bearings; long, bronze sleeve bearings support reducing gear shafts and spindle, with heavy ball bearing for spindle end thrust. Nickel-chromium, alloy steel reducing gears, heat treated.

STANDARD EQUIPMENT: Jacobs chuck and key, 3-conductor cable with ground wire and plug. Closed grip handle with on-and-off plunger switch. No. UBR has dead handle and momentary trigger switch.

No.	UKS	UBR
Each.....	\$78.00	97.50
Capacity in Steel.....inches	1/4	3/8
Free Speed.....rpm.	460	500
Size Jacob Chuck Furnished.....inches	5/16	3/8
Side of Case to Ctr. of Spindle.....inches	1	1 1/16
Overall Length.....inches	14 3/4	16 1/4
Weight.....pounds	8 1/4	11 1/2

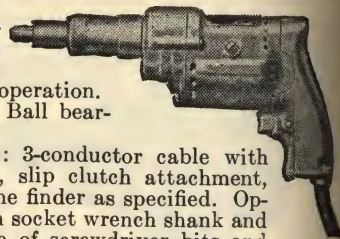
Prices on application for 32, 220, 250 or other voltage.

**Thor Heavy Duty Portable Electric Screwdrivers and Nut Setters**

Universal Motor, A.C. and D.C.—For 110 Volts, 25 to 60 Cy., Sgl. Ph.

Capacity: wood screws from No. 4 to No. 12, and machine screws and nuts up to <sup>1</sup>/<sub>4</sub>-inch. Die-cast aluminum alloy casing.

Equipped with trigger momentary type switch which can be locked for continuous operation. One hand operating. Ball bearings on spindle.



Standard equipment: 3-conductor cable with ground wire and plug, slip clutch attachment, screwdriver bits and one finder as specified. Optional: Standard length socket wrench shank and socket wrench in place of screwdriver bits and finder, if specified. Can also be furnished with positive clutch attachment.

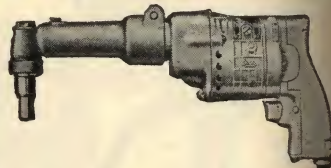
No.	U16CP	U18CP
Each, Specify Voltage.....	\$64.50	68.00
Free Speed.....rpm.	780	1000
Length.....inches	12 <sup>9</sup> / <sub>16</sub>	12 <sup>3</sup> / <sub>4</sub>
Net Weight.....pounds	4 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>16</sub>

**No. U19CP Thor Heavy Duty Portable Electric Screwdrivers and Nut Setters**

Universal Motor, A.C. and D.C.—For 110 Volts, 25 to 60 Cy., Sgl. Ph.

Capacity: wood screw from No. 4 to No. 12, and machine screws and nuts up to <sup>1</sup>/<sub>4</sub>-inch. Die-cast aluminum alloy casing.

Equipped with trigger momentary type switch which can be locked for continuous operation. Right angle, one hand operation. Ball bearings on spindle.



Free speed, 600 rpm. Length, 13<sup>1</sup>/<sub>4</sub> inches.

Standard equipment: 3-conductor cable with ground wire and plug, slip clutch attachment, screwdriver bits and one finder as specified. Optional: Standard length socket wrench shank and socket wrench in place of screwdriver bits and finder, if specified. Can also be furnished with positive clutch attachment.

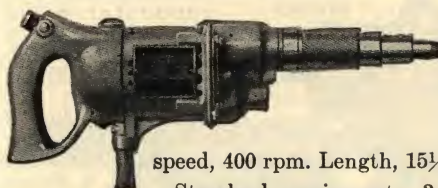
Net weight, 6 pounds.

No. U19CP, Specify Voltage.....each \$110.00

**No. UKP Thor Portable Electric Screwdrivers and Nut Setters**

Universal Motor, A.C. and D.C.—For 110 V., 25 to 60 Cy.; Sgl. Ph.

Capacity: No. 12 wood screws, and machine screws and nuts up to <sup>1</sup>/<sub>4</sub> inch. For production service.



Reducing gears are of nickel-chromium alloy steel, heat-treated. Aluminum housing. Free speed, 400 rpm. Length, 15<sup>5</sup>/<sub>16</sub> inches.

Standard equipment: 3-conductor cable with ground wire and plug; double slip clutch attachment with 3 screwdriver bits and one finder, as specified. Closed grip handle with thumb operated plunger switch. Optional: bonnet cap, for close-quarter operations; standard length socket wrench shank with socket wrench in place of bits and finder.

Also available for 32, 220, 250 and special voltages.

Net weight, 6<sup>1</sup>/<sub>2</sub> pounds; shipping weight, 10 pounds.

No. UKP, Specify Voltage.....each \$78.00

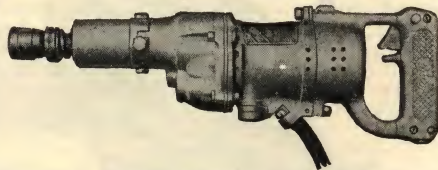


## No. UBGN 1/4-Inch Thor Portable Electric Nut Setters

Universal Motor, A.C. and D.C.—For 110 V., 25 to 60 Cy., Sgl. Ph.  
For continuous production work. Free speed, 750 rpm. Length overall, 17 5/16 inches. From side of case to center of spindle, 1 1/16 inches.

Equipped with 3-conductor cable with ground wire and plug, closed grip handle with momentary trigger switch, No. 140 kick-out clutch attachment, and one standard length socket wrench shank with one square or hex socket wrench.

Weight, 11 3/4 pounds.  
No. UBGN.....each \$96.50  
No. UBGNR, Reversible.....each 102.25  
Also available for 32, 220, 250 and special voltages.



## No. UEH 1/2-Inch Thor Portable Electric Nut Setters

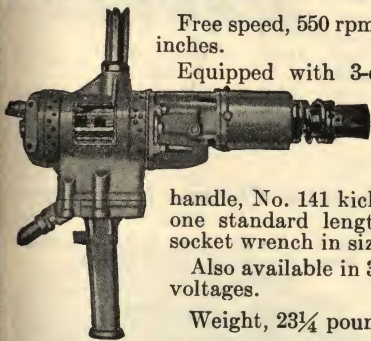
Universal Motor, A.C. and D.C.—For 110 V., 25 to 60 Cy., Sgl. Ph.

Free speed, 550 rpm. Length overall, 17 1/2 inches.

Equipped with 3-conductor cable with ground wire and plug, side handle with off-and-on plunger switch, suspension cap and hook, dead handle, No. 141 kick-out attachment, and one standard length socket shank with socket wrench in size specified.

Also available in 32, 220, 250 and special voltages.

Weight, 23 1/4 pounds.



No. UEH.....each \$155.00

## No. UEG 1/2-Inch Heavy Duty Thor Portable Electric Nut Setters

Universal Motor, A.C. and D.C.—For 110 Volts, 25 to 60 Cycles

Used where constant severe service is required.

Length overall, 15 inches.

Furnished with a suspension cap and hook, dead handle. Equipped with a side switch and a No. A136 positive attachment. Free speed, 550 rpm.

Weight, 23 pounds.

No. UEG, Specify Voltage

.....each \$138.00

Available in 32, 220, 250 and special voltages upon request.



## 7-Inch Thor Electric Polishers

Universal Motor, A.C. and D.C.—For 110 Volts

A lightweight, perfectly balanced and easily handled polisher.

Armature and spindle run in ball bearings. Alloy

steel heat treated gears. Easily taken apart for cleaning by removing brush covers. Handle can be used on either side of machine. Equipped with one 7-inch flexible rubber pad; one 7-inch felt pad and one 8-inch sheep wool pad.

No. ....	U38	U70
Each.....	\$65.00	83.00
Free Speed.....rpm.	1950	2300
Length Overall.....inches	13 3/4	16 3/4
Weight.....pounds	7 3/4	16 1/2

Also available for 32, 220 or 250 volts, as specified.



## No. U58 Thor 7-Inch Standard Duty Portable Electric Sanders

Universal Motor, A.C. and D.C.—For 110 Volts  
25 to 60 Cycles, Single Phase

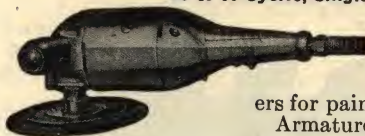
For sanding, grinding, cleaning, and preparing automobile bodies and fenders for paint jobs.

Armature and spindle run in ball bearings. Spiral bevel gears of alloy steel, heat-treated. Inspection of motor can be made while sander is running by removing 2 brush covers. Side handle can be used on either side of machine.

Free speed, 3800 rpm. Length, 14 1/2 inches.

Equipped with 7-inch flexible rubber pad and a box of 3 assorted abrasive discs.

No. U58, Shipping Weight, 14 Pounds.....each \$55.00  
Also available for 32, 220, 250 or special voltages as specified.



## Heavy Duty Thor Electric Sanders

Universal Motor, A.C. and D.C.—For 110 Volts

For sanding, grinding, cleaning, etc.

Side handle can be used on either side of machine.

Each tool equipped with 3 abrasive discs, ground wire, rubber pad, and straight switch handle.

Speed, 4000 rpm. Length 16 1/2 inches.

Shipping weight, 24 pounds.

No. ....	U68	U69
Each.....	\$80.00	85.00
Discs, Capacity.....inches	7	9

Also available for 32, 220, 250 or special voltages as specified.

U68 furnished equipped with cone-shaped cup wheel 6x2x 1/8-inch hole by specifying U67. U67 comes with adjustable wheel guard, if desired.



## Thor Portable Electric Grinders

Universal Motor, A.C. and D.C.—For 110 Volts, 25 to 60 Cycles  
Single Phase

Has heat-treated, alloy steel, spiral helical gears, shock absorber spindle. Armature and spindle have large over-size ball bearings.

Outer end of spindle support has labyrinth grease seal reinforced

with steel hub at wheel guard. Furnished with ground wire, wheel guard and 10 feet of cable. Width of wheel, 3/4 inch. Spindle thread, 1/2-inch x 13; spindle offset, 1 inch. Length, 19 1/2 inches. Shipping weight, 18 pounds.

No. ....	U54	U55
With Grinding Wheel.....each	\$69.00	90.00
Wheel Capacity.....inches	4	5
Free Speed.....rpm.	6000	4500

Also available for 32, 220 or 250 volts. Specify voltage.



## No. U60 Thor Portable Electric Grinders

Universal Motor, A.C. and D.C.—For 110 Volts

Equipped with super-power motor, special heat-treated gears, large ball bearings. Carries a 6x1-inch wheel. Furnished with straight switch handle and grinding wheel and guard. Spindle thread 5/8x11 inches.

No. U60.....each	\$112.00
No Load Speed.....rpm.	4000
Length Overall.....inches	26 3/8
Weight.....pounds	21 1/8

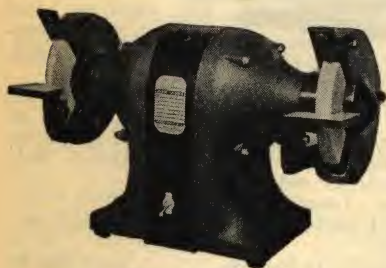
Also available for 220, 250 or special voltages as specified.





**Thor Electric Grinders****Bench Type**

For 110 or 220 Volts—3450 RPM.



For all-around service in grinding, buffing and wire wheel work.

Has a cool, quiet running, completely enclosed motor dynamically balanced for vibrationless operation. All ball bearings are over-size and dust-tight; require only annual greasing attention.

All sizes provided with freely adjustable tool rests and furnished with extra heavy wheel guards; those on 220-volt sizes are enclosed type with exhaust chute and tapered end bells to permit grinding on both sides of wheel.

	Std. Duty	Heavy Duty				
Size.....inches	6	6	6	7	7	
Volts.....	110	110	220	110	220	
Wheel Diameter inches	6	6	6	7	7	
Wheel Width.....inches	1½	1½	¾	1	1	
Bore.....inches	1½	1½	1½	5/8	5/8	
Each.....	\$39.50	49.00	49.00	72.50	72.50	

Prices include 1 medium grit and 1 fine grit wheel.

**No. B6GS Thor 6-Inch Bench Grinders**

Universal Motor, A.C. and D.C.—For 110 Volts, 50 or 60 Cycles



For sharpening tools and implements, and removing and cutting off metal.

Equipped with two grinding wheels, one coarse grit for fast roughing, and one fine grit for smooth finish.

Wheel diameter, 6 inches. Wheel width, ¾ inch. Wheel bore, ½ inch.

Long wheel-spindle and tapered end bells permit handling odd-shaped pieces.

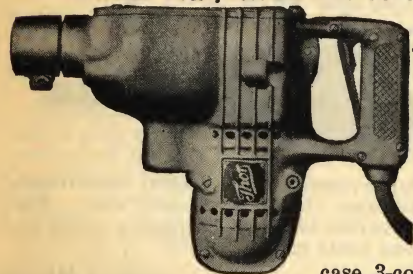
Standard equipment: wheelguards, adjustable tool rests, off-on toggle switch, three-conductor cable (with ground wire), and a two-prong plug.

Full load speed, 3450 rpm.

No. B6GS, Weight, 52 pounds.....each \$49.50

**No. U100 1-Inch Heavy Duty Thor Portable Electric Hammers**

Universal Motor, A.C. and D.C.—For 110 or 220 Volts

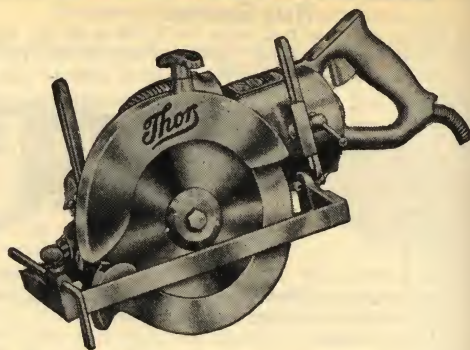


Capacity in concrete up to 1-inch Star drill; 1600 blows per minute. Length overall, 13½ inches. Equipment includes ¾-inch Star drill, turning handle, ejector pin, dust shield, carrying

case, 3-conductor cable with ground wire and molded rubber plug, momentary grip switch with lock.

Net weight, 14 lb.; shipping weight with case, 32 lb.

No. U100, Complete, Specify Voltage.....each \$145.00

**Thor Portable Electric Saws**

A powerful saw for depth and bevel cutting to maximum angle of 45°.

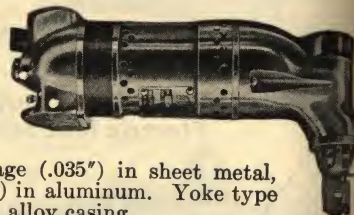
Convenient grip handle for comfortable operation. Automatic telescope guard assures safety. Adjustable without wrenches.

Size.....inches	6	7	8
Each.....	\$90.00	119.50	147.50
Blade Diameter.....inches	6¼	7¼	8¼
Free Speed.....rpm.	4500	4250	3500
Maximum Cutting Capacity in			
Wood.....in.	17/8	23/8	2½
Weight.....pounds	10¾	17¾	21¾

**No. U1N Thor Portable Electric Nibblers**

Universal Motor, A.C. or D.C.—For 110 Volts, 25 to 60 Cycles, Single Phase

For cutting sheet metal and tubing. By cutting its own clearance, it cuts corrugated and curved sheets without distortion.



Capacity: No. 20 gage (.035") in sheet metal, and No. 16 gage (.065") in aluminum. Yoke type front head. Aluminum alloy casing.

Overall length, 9 inches. Diameter of body, 2½ inches.

Weight, 3¾ pounds.

No. U1N, Complete, Specify Voltage.....each \$69.00

Also available for 32, 220, 250, and special voltages.

**Ideal Hand Type Cleaners**

1½-Hp. Universal Motor, A.C. and D.C., 115 Volts



A powerful lightweight cleaner designed to blow, vacuum, spray, or dry better and faster. High velocity discharge blasts dust and dirt from dangerous electrical installations and inaccessible places. Blows large volumes of dry air at low pressure per-

mitting cleaning of motor windings or delicate machinery without damage; vacuums those hard to clean places; sprays insecticides, paints, varnish, deodorants; dries paint, varnish, ink, etc. Can be used continuously for production drying. Cleaner has continuous duty universal motor with sealed precision ball bearings; no oiling or lubrication required. Has plug in for new detachable heater nozzle. Can be used with all Ideal cleaning attachments.

No.....	22-110	22-113
Each.....	\$122.50	97.50
Water Lift.....inches	52	30
Air Volume Discharge.....cfm.	78.5	58.5
Overall Size, Including Nozzle.....in.	21x12x9	19x9x7
Shipping Weight.....pounds	20	14
No. 22-109, Set Standard Suction Attachment.....each	\$19.25	
No. 22-116, Heater Nozzle.....each	17.25	



## Thor Saw Blades

To provide long life and most economical service saw blades are made of correct gage to hold set; teeth of blades are properly shaped for different types of work intended; and metal is correctly and uniformly tempered and tensioned. High quality of steel blades means satisfaction to users of Thor saws.

## Combination

Designed for all around work; suitable for ripping or cross-cutting.

Blade No.	Each	Diameter Inches	Thor Saw Size
73862	\$3.45	5 $\frac{7}{8}$	1, 1A
73863	3.75	6 $\frac{1}{4}$	6"
73875	4.10	7 $\frac{1}{4}$	7", 2A
73880	4.60	8	3
73881	4.95	8 $\frac{1}{4}$	8", 3A
73889	5.40	8 $\frac{15}{16}$	4, 4A
73894	5.80	9 $\frac{7}{8}$	5
73899	6.95	11 $\frac{7}{8}$	6, 6A, PS-12

## Cutoff

For all types of cross-cut work.

Blade No.	Each	Diameter Inches	Thor Saw Size
73864	\$3.45	5 $\frac{7}{8}$	1, 1A
73865	3.75	6 $\frac{1}{4}$	6"
73876	4.10	7 $\frac{1}{4}$	7", 2A
73882	4.60	8	3
73883	4.95	8 $\frac{1}{4}$	8", 3A
73890	5.40	8 $\frac{15}{16}$	4, 4A
73895	5.80	9 $\frac{7}{8}$	5
73900	6.95	11 $\frac{7}{8}$	6, 6A, PS-12

## Fine Tooth

Light gage, thin blade and is fitted with very small teeth. Used primarily for cutting Celotex or similar soft wallboard.

Blade No.	Each	Diameter Inches	Thor Saw Size
73868	\$3.80	5 $\frac{7}{8}$	1, 1A
73869	3.90	6 $\frac{1}{4}$	6"
73879	4.10	7	7", 2, 2A
73887	4.60	8	8", 3, 3A
73893	5.80	8 $\frac{15}{16}$	4, 4A, 5, 6, 6A, PS-12

## Friction

A shallow notched steel disc for cutting by friction or burning, light gage flat or corrugated sheets of iron.

Blade No.	Each	Diameter Inches	Thor Saw Size
73870	\$7.60	5 $\frac{7}{8}$	6", 1, 1A
73871	8.00	6 $\frac{1}{4}$	7", 2A
73884	10.55	8	8", 3, 3A, 4, 4A

## Mitre

For very smooth cutting. Ideal for interior finish. Hollow ground.

Blade No.	Each	Diameter Inches	Thor Saw Size
73866	\$6.30	5 $\frac{7}{8}$	1, 1A
73867	6.50	6 $\frac{1}{4}$	6"
73877	7.25	7 $\frac{1}{4}$	7", 2A
73885	7.95	8	8", 3, 3A
73891	9.25	8 $\frac{15}{16}$	4, 4A
73896	10.05	9 $\frac{7}{8}$	5, 6, 6A, PS-12

## Rip

This is the fastest cutting blade for rough work, rip or cutoff. If rip cuts are to be made with Models

Blade No.	Each	Diameter Inches	Thor Saw Size
73898	\$5.80	9 $\frac{7}{8}$	5
73901	6.95	11 $\frac{7}{8}$	6, 6A, PS-12

These blades will fit new and old Thor Saws as indicated. Only saws now in production are new Thor Electric Saws, designated 6", 7" and 8" and the PS-12 pneumatic saw.

## No. G12001-1 Casco Electri-Craft Hand Power Tool Kits

A.C. and D.C.—For 115 Volts, 60 Cycles



EXCLUSIVE FINGER GRIP



A complete, portable power workshop all in one kit.

For fine work or roughing when used by electrical maintenance men, laboratory workers, pattern makers, tool makers, model makers, and hobbyists.

Used for hundreds of operations in tool and model rooms and for exact work in metal, plastic wood, and glass.

Balanced for vibrationless operation. High speed (20,000 rpm.) motor is seated at all critical points on a light, sturdy aluminum frame for rigidity with a shockproof, plastic motor case for lightness.

Cooled by forced ventilation. Has high grade, self-oiled bearings and special finger grip for exact manipulation.

Chest is made of steel, walnut finished, with snap catch and lock with key. Metal tool tray is removable.

Lower compartment will hold materials and other tools.

Chest dimensions: width, 13 $\frac{1}{2}$  inches; depth, 6 inches; height, 4 $\frac{1}{2}$  inches.

Packed 3 kits to a carton. Ship. wt., approx. 14 lb.

## Accessories

One  $\frac{3}{32}$ -inch collet, one  $\frac{1}{8}$ -inch collet, wrench, six mounted grinding stones, 3 drills, 3 steel cutters, saw, 5 mandrels, 5 abrasion discs, felt buffer wheel, 3 rubber-bonded polishing wheels, 3 brushes, crimped wire cleaning and etching brush, dressing stone, and a muslin buffer.

No. G12001-1 .....per kit .....



## Fire Extinguishers

Approved by Underwriters' Laboratories and Factory Mutuals

**Pyrene Vaporizing Liquid**  
1 and 1½-Quart Pump Type

Smothers all classes of incipient fire, particularly fires in flammable liquids and electrical equipment. Light, compact, and easily operated. Double acting pump. Discharges a steady 25 to 30 foot stream from any position. Vehicle type has shock absorber construction and clamp brackets for wall or steering post. Also available with chromium or painted finishes. Also approved by Good Housekeeping Institute. Liquid is a non-conductor of electricity, non-corrosive, anti-freezing to 50° below zero F. Sold with charge and bracket.

No. C21, 1-Qt. Brass, Wall Bracket....	\$15.00
No. C21T, 1-Qt. Brass, Heavy Vehicle, Wall Bracket.....	16.00
No. C21TS, 1-Qt. Brass, Heavy Vehicle, Post Bracket.....	18.00
No. C31, 1½-Qt. Brass, Wall Bracket.....	18.00
No. C31T, 1½-Qt. Brass, Heavy Vehicle, Wall Bracket.....	19.00
No. CR2, 1-Qt. Pyrene Liquid.....	1.60
No. CR10, 2-Qt. Pyrene Liquid.....	3.20
No. CR4, 1-Gal. Pyrene Liquid.....	5.80



C 21



S 13

**Pyrene Soda-Acid**  
2½-Gal. Seamless and Riveted Types

Inverted, it discharges a 40-foot stream, effective on fires in wood, paper, textiles, etc. The Four-Star Drawn Shell type has patented press assembled collar and seamless dome and shell of one-piece copper. Strong and durable, tested to 500 pounds pressure.

The standard riveted shell type, at lower cost, has shell, dome and bottom of cold-rolled copper with seams backed with solder. Tested to 350 pounds pressure.

Chromium and painted finishes available. Must be discharged and recharged annually. High grade charges are full weight, accurately proportioned.

No. S13, 4-Star Seamless, Polished Copper.....	\$34.00
No. SX13, Riveted Shell, Standard Finish.....	30.00
If above supplied with relief valve, add \$2.00 to price.	
No. SXR1, 2½-Gallon Recharge.....	\$6.00

**40-Gallon on Wheels**

Narrow and wide gage.

No. SD2L, 40-Gallon Indoor Loose Stopple.....	\$500.00
No. SD2M, 40-Gallon Indoor Manual Operation...	525.00
No. SD3M, 40-Gallon Outdoor Manual Operation..	575.00
No. SR3, 40-Gallon Recharge.....	7.20

**Pyrene Vaporizing Liquid**  
2-Quart and 1-Gallon Pressure Type

For industrial and vehicular protection against flammable liquid and electrical fires, and incipient fires in ordinary combustibles. Discharge 30 to 40-foot stream without pumping. Inner chamber holds air under pressure; outer contains Pyrene Liquid. Air pressure gauge and liquid level sight glass make inspection easy. Equipped with flexible metal, rubber-covered hose. Available with or without built-in air pump.



C 103



C 43

No. C103, 2-Qt. Pol. Copper, Without Pump.....	\$50.00
No. C103M, 2-Qt. Polished Copper, With Pump.....	54.00
No. C43, 1-Gal. Polished Copper, With Pump.....	80.00
No. C43A, 1-Gal. Polished Copper, Without Pump.....	75.00
No. CR10, 2-Qts. Pyrene Liquid.....	3.20
No. CR4, 1-Gal. Pyrene Liquid.....	5.80

**Pyrene Foam****2½-Gal. Seamless and Riveted Types**

Discharges 22 gal. of foam that floats on flammable liquids, clings to solids and smothers the fire. The Four Star Drawn Shell type has one-piece shell and dome and solderless collar. Tested to 500 pounds pressure.

Standard riveted shell type available at lower cost. Tested to 350 pounds pressure.

Both seamless and riveted types are also available with chromium and painted finishes. Must be discharged and recharged annually, using only the specially compounded and accurately proportioned Pyrene Foam recharges.

No. P13, 4-Star Seamless Pol. Copper.	\$37.00
No. PX13, Riveted Shell, Std. Fin..	33.00

If above is supplied with pressure relief valve to meet U. S. C. G. requirements, add \$2.00 to price.

No. PXR1, 2½-Gallon Recharge.....	\$1.60
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**10 and 40-Gallon on Wheels**

No. PD1P, 10-Gallon Indoor Type.....	\$390.00
No. PD2PN, 40-Gallon Indoor Type.....	550.00
No. PD3PN, 40-Gallon Outdoor Type.....	600.00
No. PD4PN, 40-Gallon Airport Type (8" Tire)....	650.00
No. PR3, 10-Gallon Recharge.....	7.00
No. PR6, 40-Gallon Recharge.....	15.00



P 13

**Pyrene Water-Type****2½-Gallon Cartridge-Operated**

Kills fire in ordinary combustibles by discharging a 40-foot stream of plain water—without pumping or chemicals—by means of pressure from a carbon dioxide gas cartridge. Operated by inverting and striking the plunger head on the floor. Annual recharging is not required. After use, refill with water; replace cartridge.

The Pyrene Anti-Freeze type is for ordinary hazards at freezing locations. Pyrene Freeze-Proof is anti-freezing to 40° below zero Fahrenheit. Both are also available in painted and chromium finishes.

No. H13, Water-Type, Polished Copper.....	\$44.00	H 13
No. W13, Anti-Freeze Type, Polished Copper.....		46.00
No. HV1, Replacement Pressure Relief Valve.....		2.00
No. HC1, Extra Cartridge for Water Type.....		11.00
No. WR1, Extra Anti-Freeze Charge and Cartridge.....		13.00
No. WC1, Extra Cartridge for Anti-Freeze Type.....		11.00
Recharging Cartridges.....		4.00
No. TR1, 5-Gallon Freeze-Proof Charge.....		4.00
No. TR2, 2½-Gallon Freeze-Proof Charge.....		2.00



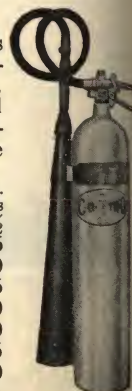
H 13

**C-O-Two Carbon Dioxide**  
2½ to 100-Pound Capacities

Carbon dioxide hand and wheeled types are recommended for speedy extinguishment of highly inflammable liquids, paints, oils, etc., and for protection of electrical equipment. High pressure metallic and rubber hose. Horn of fabricated non-crackable material.

No.	Each	Valve	Lb. Gas
PS-2½	\$21.00	Squeeze-Grip	2½
PS-5	27.50	Squeeze-Grip	5
PSH-10	46.00	Squeeze-Grip	10
PSH-15	52.50	Squeeze-Grip	15
PSH-20	59.00	Squeeze-Grip	20
WB or WVF-50	178.00	Seat or Pressure	50
WB or WVF-75	218.00	Seat or Pressure	75
WB or WVF-100	350.00	Seat or Pressure	100

Information on hose units and automatic or manual systems are also available.



PSH-15



## Cordley Electric Water Coolers

Equipped with non-rusting water system. Non-ferrous storage tanks and tubing are used throughout.

Complies with the requirements of U.S. National Bureau of Standards, CS127-45.

Has durable satiny neutral-tone, gray finish on heavy sheet furniture steel.

All cabinet panels are removable for easy access to mechanism.

## Model HCS-10

A single-bubbler cooler with a hermetically sealed compressor unit.

Gooseneck filler is optional.

Cools up to 17 gallons per hour depending upon room and inlet water temperatures.

Precooling system uses waste water to cool incoming water to save electric current.

Available for 115-volt, 60 cycle power supply only.

Model CS-10 is identical except equipped with open-type compressor unit and is available for any a.c. or d.c. power supply.

## Model CS-20

A two-bubbler cooler with extra (11½-gallon) storage reserve capable of handling heavy traffic or peak loads.

Gooseneck filler is optional.

Cools up to 33 gallons per hour.

Has open-type compressor unit and is available for any a.c. or d.c. power supply.

Model RCS-20 is similar except is equipped with two push-back glass fillers for restaurant or cafeteria service.

## Model FCS-3

A bottled water cooler for moderate or small groups in offices, stores and other installations where traffic is relatively light.

No plumbing connections are required.

Accommodates any standard 3 or 5-gallon water bottle.

Has open-type compressor unit and is available for any a.c. or d.c. power supply.

## Cory Commercial Electric Coffee Brewers

With ½ Gallon Decanters



Five Burner Unit

## No. C122W 2-Burner Warming Units

Designed as auxiliary equipment with low heat only (80 watts). Safeguards against overheating coffee. Chrome finish.

Furnished with two decanters and one spare lower bowl.

No. C122W, Warming Unit Only, Wt., 7¾ Lb. each \$18.25

No. 140, Warming Unit with Two No. CD2G Decanters, Wt., 14 Pounds. each 26.15

No. 143, Warming Unit with Two No. CDM Decanters, Wt., 14 Pounds. each 27.00

## No. C122E 2-Burner

Has two heats (660-80 watts); a high heat for brewing and a low heat for keeping coffee at a serving temperature. Capacity, 80 cups per hour.

Furnished with two complete Cory brewers, extra filter cloths, funnel holder, coffee measure and spare glass, and one lower bowl.

Stove dimensions, 8x14½x4½ inches. Chrome finish.

No. C122E, Stove Only, Weight, 7¾ Pounds. each \$20.10

No. 240, No. C122E Stove with No. C2G Glassware, Weight, 19¼ Pounds. each 33.00

No. 243, No. C122E Stove with No. CMG Glassware, Weight, 19¾ Pounds. each 34.25

## No. C123E 3-Burner

Two burners give high and low heat and one burner gives low heat only.

Capacity, 100 cups per hour.

Furnished with two complete Cory brewers, one serving decanter, extra filter cloths, funnel holder, coffee measure and spare glass, and one spare upper and lower bowl.

Low heat burner is protected by a stainless steel shield.

Stove dimensions, 8x22x4½ inches. Chrome finish.

No. C123E, Stove Only, Weight, 11 Pounds. each \$29.45

No. 340, No. C123E Stove with No. C2G Glassware, Weight, 25¼ Pounds. each 47.80

No. 343, No. C123E Stove with No. CMG Glassware, Weight, 26 Pounds. each 49.60

## No. C125H 5-Burner Step-Up

The two upper burners are Cory Speed-Ray closed elements with both high and low heats (660-80 watts).

Special cooling area between two upper burners provides auxiliary space for working convenience.

The three front burners give low heat only (80 watts) with elements protected by stainless steel covers.

Capacity, 140 cups per hour.

Furnished with two complete Cory brewers, three serving decanters, extra filter cloths, funnel holder, coffee measure and spare glass, and one upper and one lower bowl.

Stove dimensions, 16x22x7½ inches. Chrome finish.

No. C125H, Stove Only, Weight, 23 Pounds. each \$68.35

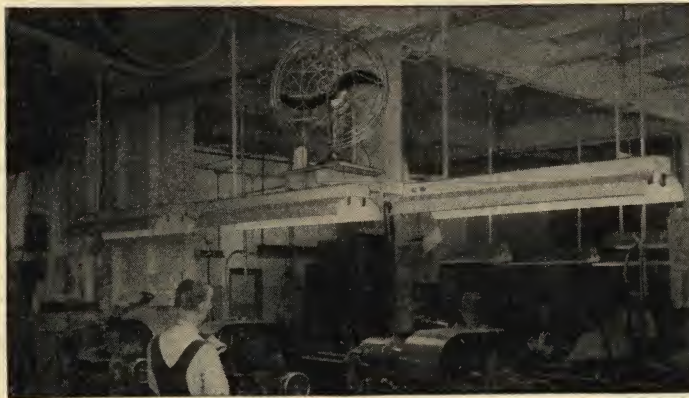
No. 540H, No. C125H Stove with No. C2G Glassware, Weight, 41 Pounds. each 92.60

No. 543H, No. C125H Stove with No. CMG Glassware, Weight, 42 Pounds. each 95.00

Federal Manufacturer's Excise Tax to be added to prices.



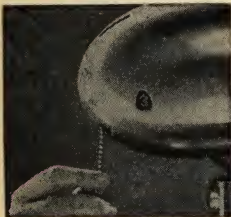
## Fresh'nd-Aire Circulators



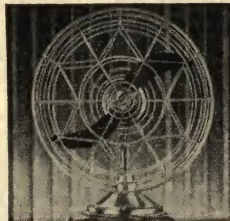
Fresh'nd-Aire circulator, successor to the fan, provides scientific overall no-draft air circulation for every requirement. It moves great volumes of air quietly, evenly—gives relief from the dulling effects of dead, stuffy air. In industry

it reduces fatigue, increases efficiency—brings higher production rates. For commercial establishments Fresh'nd-Aire brings added customer comfort—increases restaurant or store traffic.

Fresh'nd-Aire speed control, an exclusive feature, shows instantly on a visual dial the speed being used. Just a flick of the switch does it. Smaller models have three speeds—larger models have five speeds plus on and off switch.

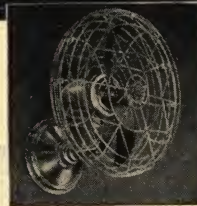
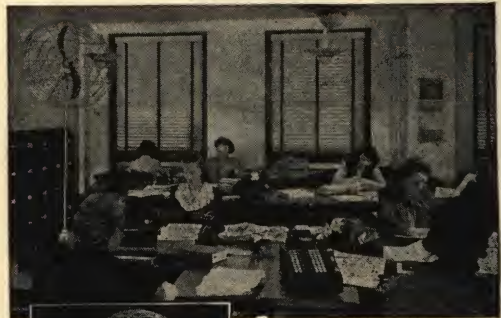


Speed Control



Low Stand Model

Low stand model has sturdy carrying handle. Base becomes wall mounting if desired. Becomes high stand model by simple addition of sub-base and tubing.



Fresh'nd-Aire mountings are adjustable to any position, horizontally or vertically. Low stand base becomes attractive wall mounting.

## Wall Mounting

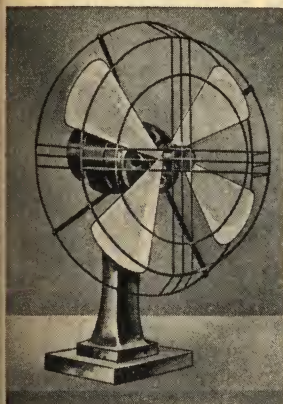
Prop. No. and Size.....inches	14-R	17-R	20-R	23	26	35
Low Stand.....each	\$51.98	\$59.85	\$70.88	\$81.38	\$104.48	\$141.75
High Stand.....each	69.31	77.18	96.08	106.58	131.78	179.55
Type Motor, 115 Volts, 60 Cycles.....	Induction	Induction	Induction	Induction	Capacitor	Capacitor
Speeds.....rpm.	1600 1200 800	1600 1200 800	1600 1200 800	1600 1250 850	1600, 1400 1200, 1000 800	1100, 1000 850, 700 550
No. of Speeds.....	3	3	3	3	5	5
Shipping Weight: Low Stand.....pounds	25	26	35	37	60	90
High Stand.....pounds	50	51	75	77	110	155

**When ordering,** specify current, cycle, voltage and phase. For motors of other specifications, write for special prices.

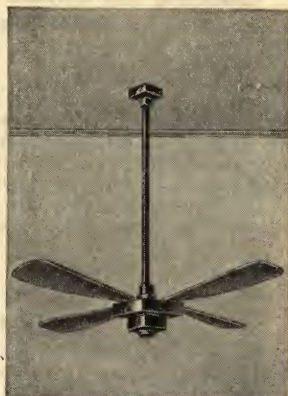


## Commercial Fans

For Offices, Banks, Stores, and Institutions



**Desk Type**  
Available in Various Sizes  
and Types, Oscillating  
and Non-Oscillating



**Ceiling Type**  
Available in Several Sizes  
and Types for  
Various Applications

Available in Several Sizes



**Floor Type**

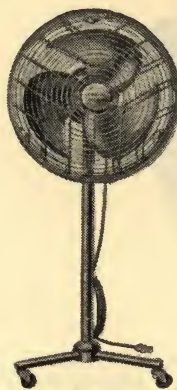
Graybar distributes a complete line of desk, floor, wall and ceiling fans for office, store and institutional use. At the time this catalog went to press it was impossible to get complete data on the new items available. Therefore, we are merely showing three typical fans of current style—desk, ceiling and floor—and suggesting that when you need fan information you write or call our nearest office and warehouse (see list at back of catalog). They will be glad to send you complete information, prices and delivery information.

Ask Your Nearby Graybar Office and Warehouse for the Latest Fan Information

## No. 428 Ilg-Rollaire Cooling Fans

Portable—High Volume

220 Volts, 1 Phase



A plug-in unit mounted on rubber casters, for the night air cooling of small homes and apartments. Expels hot air and draws in cool air. Inside temperatures drop from 5° to 20° as an Ilg-Rollaire fan is placed at one window, and other windows and doors are opened to make possible a complete air change. Casters lock in position.

Fan height is adjustable from 41 to 56 inches from floor to center of wheel.

Has a fine mesh safety guard, 25 inches in diameter.

Air capacity, 2600-1950 cfm. Air capacity carries a certified A.S.H.V.E. rating.

Rpm., 1140-855; 220 watts.

Direct connection of motor and fan eliminates friction and noise.

Rpm., 1140-855; 220 watts.

Direct connection of motor and fan eliminates friction and noise.

Fan is completely finished in bright chromium and is equipped with 20 feet of rubber covered cord and plug.

Shipping weight, 110 pound.

No. 428.....each \$180.18

## Ilg Portable Floor Fans

For industrial air cooling. Discharges large volumes of air at high velocity. Propeller has 4 blades of cast aluminum protected by guards. Cast iron base.

The 12-inch fan is equipped with cord and plug; larger models with standard enclosed switch.

Size.....in. 12 24 30 36  
220 or 440 V.,  
3-Ph. A.C.

.....each\*\$140.60 401.31 487.31 567.84

115 or 230 V.,  
D.C....ea.\$157.66 530.31 730.96 824.46

†CFM..... 3200 8000 16000 24000

RPM..... 2400 1140 1140 1140

Watts Input. 230 500 750 1200

Weight...lb. 140 350 400 550

\*110 or 220 volts 1-phase only.

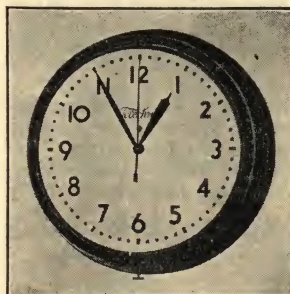
†Capacities include induced air volume.



## Telechron Commercial Electric Clocks

Self-Starting

Approved by Underwriters' Laboratories



For indoor use only.

Surface type, round molded fiber case has a wrinkled statuary bronze enamel finish. Metal dial has black characters on a white background.

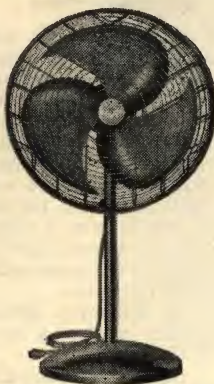
Movement constructed to insure quiet, long life.

No. ....	1H912	1B915
Each.....	\$11.95	16.95
Dial Size.....inches	12	15
Outside Diameter.....inches	14 $\frac{1}{4}$	17 $\frac{1}{2}$
Depth.....inches	3 $\frac{1}{4}$	4
Number per Carton.....	1	1
Shipping Weight.....pounds	7 $\frac{1}{2}$	11 $\frac{3}{4}$



**Ilgwind Fans**

For Recirculation

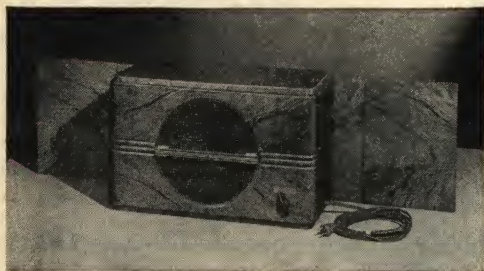


A portable plug-in unit used for cooling homes and apartments. Expels hot air and draws in cool air. Inside temperatures drop from 5° to 20° as an Ilgwind fan is placed at one window, and other windows and doors are opened to make possible a complete air change. For handling up to eight rooms.

Adjustable in height. Has a fine mesh safety guard.

With 2-speed, 60-cycle, single-phase motor, 110 or 220 volts. Direct connection of motor and fan eliminates friction and noise. With 20-foot rubber-covered cord.

No.	271	331
Speed.....rpm.	1140	855
Each.....	\$196.56	244.34
Capacity.....cfm.	7000	12000
Hp.....	$\frac{1}{4}$	$\frac{3}{8}$
Watts.....	370	450
Ht. Floor to Hub.....in.	41-65	39-63
Net Weight.....lb.	95	160
Shipping Weight.....lb.	165	260

**No. BM388 Ilg Filter Type Ilgairator Window Ventilators**

This is an electric fan and air filter unit that can be used with any sliding sash window for supplying fresh, filtered air to a room. Dust, soot, and plant pollens are filtered out of the air with over 98% efficiency.

The air volume is controlled by a regulator on the front panel. The No-Draft grille may be revolved to deflect the air in any direction.

The attractive cabinet is made of furniture steel and finished in natural walnut grain or rich ivory. Six adjustable panel widths are furnished for various window widths. The installation does not interfere with opening, closing or locking window. Filter is replaceable; a new cartridge is easily inserted.

With all necessary accessories including rubber covered cord and plug; operates from any electric light socket.

Single phase, 60 cycles, 110 volts.

Air capacity, 250 cfm. Speed, 1550 rpm. Watts, 40.

Also available for d.c. Prices on application.

Panel Adjustment.....inches	26-30	30-36	36-45
110 Volts, A.C.....each	\$75.00	75.00	75.00
Shipping Weight.....pounds	35	38	42

Replacement Filters, 6 to a Package, Shipping

Weight, 9 Pounds.....per Filter \$2.25

**Ilg Electric Propeller Fans****Selecting the Correct Size of Ilg Self-Cooled Motor Propeller Fan**

The air change required in a room differs with the conditions found therein. The worse the air conditions, the faster the air should be changed; restaurants for instance need a more rapid air change than do offices. Air conditions in a given type of building are fairly uniform and it is possible to generalize on the rate of air change advocated for various classes of buildings. Note the listing below.

**Air Changes**

Class of Buildings	Air Should be Changed
Restaurant and Hotel Kitchens....	Every 1 to 2 Minutes
Offices and Stores, Depending on the Climate.....	Every 2 to 5 Minutes
Workrooms and Factories.....	Every 5 to 10 Minutes
Residence Kitchens.....	Every 1 to 2 Minutes
Garages.....	Every 5 to 10 Minutes
Theatres.....	Every 2 to 5 Minutes
Halls.....	Every 5 Minutes
Laundries.....	Every 2 to 5 Minutes
Farm Barns.....	Every 10 Minutes
Attic Cooling.....	Every 2 minutes on floor beneath attic

**Self-Cooled Motor**

The ingenious, exclusive self-cooling features of the Ilg ventilating fan motor combines the low operating cost of the open motor with the protection of the fully enclosed motor.

The Ilg self-cooled motor is an open motor, protected and enclosed by a metal hood. The fan action draws clean air through the vent-pipe from the outside, circulates it through the motor and exhausts it. The motor stays clean, stays cool; no foul air reaches it.

The value of this self-cooling feature is reflected in lower operating costs, quieter operation and longer service life.

**Slow Speed—Quietness—Long Life**

This motor propeller fan is made to operate efficiently at low speeds, from the 8-inch Ilg vent running at 1550 r.p.m. to the 72-inch Ilg fan at 315 r.p.m.; slow speeds characterize the Ilg line. Slow speeds permit quiet operation, smoother, effortless running, less vibration and bearing wear. Many an Ilg self-cooled motor propeller fan is as good as new after years of service. Slow speed is the answer.

**Two Fans in One**

The Ilg self-cooled motor propeller fan for single phase operation is equipped with two speed controllers. In effect, this gives the user two fans for the price of one; at top speed a reasonably quiet ventilator for peak loads, and for hot weather duty; at low speed, a fan which is noiseless, ready for cold weather ventilation duty. Here is year round use, top capacity, silent operation, and flexibility of performance, all in one fan.

**Improved Balanced Wheel**

Slow speeds are possible because of the improved Ilg bucket type fan wheel. The deeply cupped blades scoop up the air, working efficiently at low speeds. Dynamic balancing on a costly machine makes the Ilg fan wheel quiet, vibration-free for life.



## Ilg Self-Cooled Electric Propeller Fans



Constructed with patented Ilg enclosed self-cooled motor which affords the low operating cost of the open motor with the protection of a fully enclosed motor.

Fan action draws clean air through vent pipe in the bottom of the fan from out-of-doors, circulates it through the motor and exhausts it.

Motor stays cool and clean and uses less power.

Ratings are certified to be in accordance with the A.S.H. & V.E.

### Constant Speed, S. Ph. 110 or 220 Volts, 60-Cycle

Size In.	Type	Each	Speed RPM.	CFM.	Watts Input	Motor Frame No.	Ship. Wt. Lb.
8	Ilgvent	\$26.00	1550	350	35	51	10
10	Ilgette	34.13	1550	500	40	52	12
12	Ilgair	54.60	1140	800	70	33	23
16	SH	90.09	1140	1400	100	15	48
18	SH	129.00	1140	2300	170	S87	80
20	SH	156.98	1140	3200	250	S87	96
24	SH	209.53	855	4100	275	DE102	186
30	SH	315.32	685	7300	450	DE101	216
36	SH	432.71	570	9650	500	104	445
*42	SH	556.24	490	12300	800	104	550
*48	SH	687.24	490	18400	1300	105	780

### †Two-Speed, S. Ph. 110 or 220 Volts, 60-Cycle

16	S	\$120.12	855 1140	1000 1400	100	15	60
18	S	165.17	855 1140	1750 2300	170	D87	84
20	S	195.20	855 1140	2400 3200	250	D87	96
24	S	277.10	600 855	2880 4100	275	D102	190
30	S	361.73	500 685	5420 7300	450	D101	220
36	S	476.39	400 570	6900 9650	500	D104	450
*42	S	609.48	380 490	9800 12300	800	D104	568

For 50-cycle use same list price; speeds and capacities are 5/6 of those shown for 60-cycle.

### A.C., 50-60-Cycle, 2 or 3-Phase

Size In.	Type	220 or 440 V. Each	550 V. Each	Speed RPM.	CFM.	Watts Input	Motor Frame No.	Ship. Wt. Lb.
18	M	\$174.72	\$210.90	1140	2300	120	87	80
20	M	195.20	242.29	1140	3200	290	87	110
24	M	225.23	270.96	855	4100	250	102	172
30	M	270.96	315.32	685	7300	400	101	228
36	ML	436.12	496.18	490	8300	460	104	450
36	M	395.85	454.55	570	9650	460	103	460
42	M	501.64	558.97	490	12300	800	104	630
48	M	587.64	659.30	490	18400	1300	105	780
54	M	951.41	1060.61	425	23200	1950	107	900

Fifty-cycle speeds and capacities are approximately 5/6 those shown for 60-cycle.

### D.C.

Size In.	Type	115 or 230 V. Each	500 V. Each	Speed RPM.	CFM.	Watts Input	Motor Frame No.	Ship. Wt. Lb.
†10	Ilgette	\$34.13	.....	1550	500	70	54	12
12	Ilgair	60.75	.....	1140	800	70	10	23
16	B	104.43	.....	1140	1400	100	1/8	48
18	B	150.84	.....	1140	2300	150	1/6	80
24	A	300.99	\$315.32	855	4100	300	1197	186
30	A	361.05	380.16	690	7300	440	1199	220
36	A	541.91	569.21	570	9650	600	1207	450
42	B	630.63	662.03	490	12300	800	1207	550
48	B	845.62	888.62	490	18400	1300	1211	800
54	B	1246.93	1309.04	425	23200	1800	1218	950
60	B	1719.90	1805.90	380	28400	2270	1215	1200
72	B	1920.56	2016.79	315	40500	2300	1217	1600

Enclosed speed controllers furnished with all d-c. fans except the Type 12 size.

\*220 volts only.

†Two speed controller included.

†115 volts only.

## Ilg Special High Speed Propeller Fans



Suitable for industrial or other uses where noise is no consideration.

Regular self-cooled motor construction with 4-blade cast aluminum fan wheel.

### 110 or 220 Volts, 1 Phase, 60 Cycles

Size	Each	RPM.	CFM.	Watts Input	Motor Frame	Ship. Wt. Lb.
18HS	\$200.66	1750	3100	300	87	90
24HS	343.98	1140	5500	500	102	190
*30HS	458.64	1140	10000	750	103	265

### 220 or 440 Volts, 2 or 3 Phase, 60 Cycles

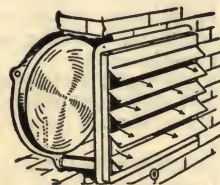
18HM	\$221.13	1750	3100	300	87	100
24HM	266.86	1140	5500	500	102	225
30HM	352.86	1140	10000	750	103	325
36HM	479.12	1140	15000	1200	104	500

### 110 or 220 Volts, D.C., with Regulator

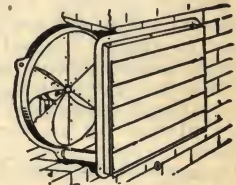
24HB	\$401.31	1140	5500	500	1197	235
30HB	487.31	1140	10000	750	1207	345

\*220-volt.

## Ilg Automatic Shutters



Fan Running



Fan Not Running

These shutters are used on the outside of propeller fans to protect the fan when not running and also to keep out the wind, rain, snow and cold.

Ilg Automatic Shutters are built of special hard rolled aluminum leaves, pressed on Whiting Alloy copper coated rods supported in cast frame.

When fan is running, the shutter is held open by the force of the air current. When fan is shut off, the shutter closes automatically by gravity.

Shutters are moisture proof and need no attention after they are installed.

Size of shutter corresponds to size of fan.

Motor operated shutters available at extra cost.

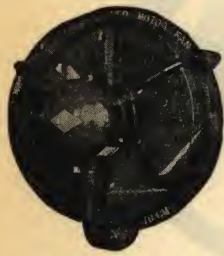
Size Inches	Approx. Shipping Wt., Lbs.	Each	Size Inches	Approx. Shipping Wt., Lbs.	Each
10	7	\$10.24	36	112	\$73.71
12	10	11.61	42	152	107.84
16	19	15.70	*48	188	143.33
18	30	19.11	*54	230	171.99
20	43	23.21	*60	210	243.66
24	67	27.30	*72	314	272.32
30	80	51.87			

\*Built in 2 sections.



### 1lg Propeller Fan Guards

1lg Woven Wire Guards are strong and durable and do not obstruct flow of air to the fan. Furnished in one, two, or three sections; all sections are interchangeable. The 1lgette is a one-piece guard.



Propeller Fan with  
3-Section Guard

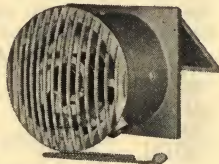
Size In.	Per Section Each	Complete	
		Each	Wt. Lb.
10	.....	\$1.64	1½
12	\$4.43	12.97	2
16	4.78	13.65	2½
18	5.12	15.02	3½
20	7.51	22.53	4
24	8.88	27.17	5
30	10.58	31.73	8
36	12.62	37.88	11
42	13.65	40.27	15
48	17.07	50.17	24
54	21.50	64.49	38

### 1lg Built-In Kitchen Ventilators

For New or Renovated Homes



1lgette



1lgvent

This unit becomes an integral, permanent part of the building wall. Simple, easy to install by contractor.

One piece weather-tight door on outside of house is opened or closed by beaded pull chain, simultaneously causing fan motor to start or stop. Keeps out insects and cold air when fan is not operating.

Operates smoothly and freely. Fan wheel is accurately balanced and allowance is made for minute variations in paint coverage. Rugged framework keeps moving parts aligned, assures a solid, permanent installation.

Telescopic cabinets made of 16-gage rust-resisting steel permit depth adjustment for different wall thicknesses.

Ventilators for a.c. operation have shaded pole type motors free from radio interference.

**1lgvent**—For small kitchens. Standard sleeve fits wall from 5¾ to 8½ inches or from 8½ to 13 inches: sleeve to fit 5¾ to 8½-inch wall shipped unless otherwise specified. Units with special sleeves available at \$2.05 extra for following wall thickness: 13 to 22-inch walls or 22 to 31-inch walls.

French gray cabinet, with polished aluminum grille.

**1lgette**—For medium-size kitchens. Self-cooled motor. Standard sleeve fits wall from 8½ to 13 inches. Units with special sleeves available at \$2.05 extra for following wall thickness: 12 to 16-inch walls: 16 to 20-inch walls: and 20 to 24-inch walls.

**1lgair**—For larger kitchens. Self cooled motor. Cabinet has fixed depth of 8½ inches. Baked ivory enamel finish.

**Automatic 1lgette**—Equipped with an auxiliary self cooled small motor in place of pull chain and can be operated by an electrical wall switch.

Cabinet Dimensions Inches	1lgvent		Certified CFM.	RPM.	Watts	Ship. Wt. Lb.
	110-220V. 50 or 60 Cy. A.C. Each	115V. D.C. or 25 Cy. A.C. Each				
Flange, 10⅞x10⅞ Round Sleeve, 9⅞ Diam.	\$46.21	*\$55.90	350	1550	35	20
12x12	\$60.06	60.06	500	1550	40	28
13⅞x12¾	\$81.90	81.90	800	1140	70	35
12x12	\$85.32	.....	500	1550	55	28

\*Not available for d.c.

### 1lg Portable Kitchen Ventilators

For Rented Homes or Apartments



Also for installations where wall space or room arrangement does not permit use of a built-in ventilator.

Fits any ordinary window, requiring only four screws.

Mounted on window frame, back of sash, permitting

window to be locked, opened or closed.  
Fan mounted in all-steel ivory finish adjustable panel.  
Furnished complete with 10-foot cord, switch plug and sash lifting handles.

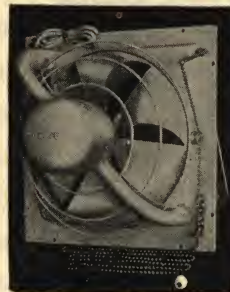
Standard panel width 26 to 36 inches, and 36 to 46 inches.

	1lgvent	1lgette	1lgair
110 or 220 V. 50 or 60 Cy. A.C.... each	\$30.03	\$39.59	\$57.33
110 V. D.C. or 25 Cycles A.C.... each	*\$37.70	39.59	62.79
For 20 to 24-Inch Panel..... add	1.50	1.50	1.50
For 46 to 56-Inch Panel..... add	3.50	3.50	5.00
Certified Ratings..... cfm.	350	500	800
RPM.....	1550	1550	1140
Watts.....	35	40	120
Shipping Weight..... pounds	18	22	35

\*Not available for d.c.

### 1lg Kitchen Ventilating Fans

Package Type—For Window Pane Installations  
Listed by Underwriters' Laboratories, Inc.



Permanently installs in steel sash window, with unit replacing one pane of glass.

Can also be used in double hung windows with wood or metal mullions around panels.

Beaded pull chain opens and closes weather-tight outer door, simultaneously starting and stopping fan operation.

1lgvent is for small, compact kitchens; 1lgette for medium size or average kitchens.

Finished in ivory.

Model	1lgette		Panel Dimensions Inches	Certified Ratings CFM.	RPM.	Watts	Ship. Wt. Lb.
	110 or 220 V. 50 or 60 Cycles A.C. Each	110 V. D.C. or 25 Cycles A.C. Each					
1lgvent	\$38.22	\$46.80	12 x12	350	1550	35	12
1lgette	51.87	51.87	12 x12	500	1550	40	14

Special size panels available at extra cost.

### 1lg 2-Speed Type Controllers

60-Cycle—2 and 3-Phase—A.C.



Full speed and approximately 40 per cent reduction.

Size..... inches	18	20	24	30	36
Each.....	\$109.20	109.20	109.20	120.81	120.81
Ship. Weight. . pounds	22	24	31	31	31



**No. 6S Ilg Utility Blowers****Motor Driven****110 Volts—60 Cycles—Single Phase—A.C.—3400 RPM.**

Suitable for building into apparatus which requires ventilation or air movement. Unit can be supplied with or without stand, inlet flange or outlet flange.



Housing, stand and flanges are of die-stamped steel. Wheel is a zinc die casting, dynamically balanced for supremely quiet, highly efficient operation and is mounted on the motor shaft. Direct connection of motor and wheel makes possible an extremely

compact arrangement for engineering into a product.

Sleeve bearing type motor, series wound.

Furnished complete with short length of cord brought out of motor for making connections.

**Performance Data in CFM. at Various Static Pressures**

Free Air	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"
70	68	66	63	60	58	54	50	46	41	36	21

No.	Each	Description
6 S	\$27.30	*Blower Only
6 S-S	29.25	Blower and Stand Only
6 S-1	29.25	Blower and Inlet Flange Only
6 S-D	29.25	Blower and Discharge Flange Only
6 S-1-D	31.20	Blower, Inlet and Discharge Flanges Only
6 S-S-1	31.20	Blower, Stand and Inlet Flange Only
6 S-S-D	31.20	Blower, Stand and Discharge Flange Only
6 S-S-1-D	33.15	Blower, Stand, Inlet and Discharge Flanges

\*Blower includes housing, wheel and motor.

**Ilg Penthouses for Power Roof Ventilators**

Penthouse is used with an Ilg self-cooled motor propeller fan for use as a power roof ventilator. The penthouse is thoroughly weathertight in every respect. It is solidly constructed of rust resisting steel. The automatic shutter is standard equipment on the penthouse to protect the fan from the weather when it is not in operation. A door in the back of the penthouse which has provision for a lock furnishes easy access to the fan for periodic lubrication.



Available with insulated lining for use where condensation of moisture during the cold weather is a problem.

Furnished complete with shutter, no fan.

Size Ventilator In.	Standard Each	Insulated Each	Size Shutter & Fan In.	DIMENSIONS, INCHES			Gage Metal	Approx. Ship. Wt. Lb.
				Ht.	Width	Depth		
12	\$90.09	\$131.73	12	28	19 7/8	15 7/8	20	90
16	90.09	135.14	16	28	19 7/8	15 7/8	20	95
18	105.11	165.17	18	35	25 7/8	17 7/8	18	105
20	121.49	187.69	20	35	25 7/8	17 7/8	18	135
24	141.96	210.90	24	41 1/4	29 7/8	21 3/8	18	170
30	203.39	285.29	30	46 3/4	35 7/8	25 1/8	18	300
36	270.96	358.32	36	54 3/4	43 7/8	27 1/8	18	400
42	401.31	501.64	42	62	50	32	18	580
48	515.97	644.97	48	72	56	36	18	740
54	788.29	645.95	54	82	63	40	16	820
60	902.95	1103.61	60	92	69	44	16	910
72	1332.93	1576.58	72	102	82	48	16	1070

**Type P Ilg Volume Blowers**

Designed to handle small quantities of air. The housing is of heavy cast iron; the wheel is of cast aluminum.

Either ceiling or wall type. Quickly fitted into any one of four different discharges.

Particularly useful for exhausting fumes from chemical laboratories. Can also be used for handling light dust from polishing wheels and grinders and is suitable for any small exhaust purpose where a considerable amount of resistance is caused by a long run of

small duct. The No. 7 1/2 P blower at 3400 rpm. can be satisfactorily used on single-fire blacksmith forges.

Size No.	RPM.	Hp.	Ship. Wt. Lb.	A.C.		D.C.	
				60 CYCLE 1 PH. CONSTANT SPEED	2 or 3 Phase 220 or 440 V.	110 V. Each	220 V. Each
7 1/2 P	3400	1 1/8	62	\$86.00	\$88.73	\$81.90	\$86.00
10 P	1720	3/8	68	103.74	106.47	106.47	111.93
10 P	3400	3/4	72	124.80	124.80	146.06	154.25
15 P	1720	1 1/4	115	129.68	136.50	229.45	260.00
15 P	3400	1 1/2	140	265.20	265.20	305.76	412.23
15 P	3400	1 3/4	150	292.50	292.50	423.15	
20 P	1720	2 1/4	285	343.98	352.86		

**Performance Data**

Size No.	Rated RPM.	PRESSURE, INCHES			
		1/4"	1/2"	3/4"	1"
7 1/2 P	3400	250	190	150	125
10 P	1420	175	100	90	85
10 P	1720	208	150	149	148
15 P	1420	320	130	250	105
15 P	1720	415	230	375	215
20 P	1420	1030	460	980	440
20 P	1720	1180	820	1130	780

Size No.	Rated RPM.	PRESSURE, INCHES							
		1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"
7 1/2 P	3400	215	180	190	175	165	170	80	150
10 P	1420	50	80	0	0	...	...	...	...
10 P	1720	118	146	0	0	...	...	...	...
15 P	1420	110	90	0	...	...	...	...	...
15 P	1720	280	190	150	165	0	...	...	...
20 P	1420	850	390	710	340	550	280	0	0
20 P	1720	1040	740	945	685	845	635	600	510

Size No.	RPM.	Hp.	PRESSURE, INCHES								
			1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"
10 P	3400	1/4	411	374	360	330	296	261	223	175	
15 P	3400	1	610	575	535	490	385	300			
15 P	3400	1 1/2	760	730	700	670	640				

**Ilg Variable Air Controllers****For Type B and Type BW Universal Blowers**

This controller is a shutter-like mechanism consisting of a bank of vanes connected together and operated by a quadrant control handle. Fastened to the discharge of the blower and operated either manually or indirectly by Ilg electric remote control.

Permits the use of a constant speed, squirrel cage motor direct-connected to the blower. Advantages of this combination as compared to a variable motor speed are an actual saving in power with an improved power factor, simplicity of operation, compactness and sturdy dependable construction. Remote control is accomplished by electrical operation of the vanes, by means of a small motor operated by a switch station located at any desired point. A transformer is used to reduce the motor operating voltage to that which does not require elaborate conduit service.



For Blower Size No.	Each	Weight Pounds
B21	\$60.06	30
B25	62.79	40
B30	67.57	45
B35	73.03	50
B40	80.54	60
B45	90.09	65
B50	105.11	90
B55	117.39	95
B60	126.27	110
B65	136.50	120
B70	150.15	125
B80	206.80	150
B90	232.05	165

Remote Control, \$105.00 extra.



### Type BW 1½g Universal Blowers For Belt Drive



Sides of housing are of cast iron and the cast iron bearing bracket is recessed in the sheet metal bowl in blower's side. The multiblade wheel is overhung on the shaft which runs on ball bearings in cast iron bracket. This two bearing construction makes possible a completely unobstructed inlet. Special Whiting ribbon steel blades of wheel have slight forward curve developing high air volume at low tip speeds and against comparatively high static pressures. Blades are spot welded to rims, and rim and blade assembly mounted on cast iron spider.

Ball bearings make these blowers suitable for any installation requiring quietness. Bearings are oversized and grease lubricated.

Angle of discharge and direction of rotation can be changed at any time. Available in single width single inlet, and double width double inlet types.

No.	Outlet Area Sq. Ft.	SINGLE WIDTH, SINGLE INLET			DOUBLE WIDTH, DOUBLE INLET		
		Each	RPM	Ship. Wt. Lb.	Each	RPM	Ship. Wt. Lb.
BW25	.8	\$160.39	1800	175	.....	...	...
BW30	1.2	195.20	1500	225	.....	...	...
BW35	1.7	252.53	1300	295	.....	...	...
BW40	2.3	315.32	1100	425	.....	...	...
BW45	3.0	372.65	1000	550	.....	...	...
BW50	3.7	450.45	850	725	\$831.29	850	925

### Type B 1½g Volume Blowers Gasoline Engine Driven



Driven by a direct connected 4-cycle gasoline engine, blower is for ventilating where electricity is not available. Manholes, vats, tanks and other places can be ventilated with this portable blower which is complete-

ly self-contained. Canvas hose is ordinarily used to convey the fresh air from blower to spot requiring ventilation.

The blower inlet is screened to prevent paper, leaves, etc. from entering. The outlet is fitted with a flange to accommodate a canvas hose. No batteries or other connections are required. Canvas hose not included.

No.	Each	B12	B15
Capacity	cfm.	630	1200
Speed	rpm.	1750	1750
Hp.		1/6	1/2
Gas Consumption	pints per hour	1/3	1
Tank Capacity	gal.	1/4	1
Height Over All	inches	14 1/2	21
Width Over All	inches	16	18
Depth Over All	inches	13	23 1/2
Shipping Weight	pounds	95	125
Net Weight	pounds	60	90

### Type B 1½g Volume Blowers



Suitable for all kinds of small volume, low pressure installations. This blower combines high efficiency and low power consumption. Quiet and smooth running.

The housing and multiblade wheel are die-cut steel. The wheel is carefully balanced. The inlet flange and the base which bears both housing and the direct connected motor, are cast iron. Discharge is universal.

#### 60 Cycle A.C. and D.C.

Size	RPM.	Hp.	Free Air CFM	Ship. Wt. Lb.	A.C.		D.C.	
					110 or 220 Volts 1-Phase Each	220 or 440 Volts 3-Phase Each	115 or 230 Volts *Less Regulator Each	With Regulator Each
B 9	1140	1/70	180	45	\$64.16	†	\$86.00	\$94.87
B 9	1750	1/20	275	55	61.43	†	100.33	111.93
B12	1140	1/20	410	75	90.09	†	120.12	132.41
†B12	1750	1/6	630	85	75.08	†	129.00	143.33
B15	855	1/10	600	120	143.33	†	154.93	179.99
B15	1140	1/7	790	120	106.47	†	157.66	178.14
†B15	1750	1/2	1200	130	152.88	\$199.29	200.66	260.72
B18	855	1/7	1000	160	185.64	196.56	221.13	234.78
B18	1140	1/3	1340	170	207.48	234.78	226.59	253.53
†B18	1750	1 1/4	2050	195	315.32	286.65	304.40	407.46
B21	855	1/3	1580	225	275.73	223.86	307.13	329.65
B21	1140	3/4	2100	240	313.95	270.27	338.52	438.85

\*One-half h.p. and larger require starter or regulator.

†These units should not be used for free air delivery where quietness is essential.

†Use 220 volt, 1 phase unit and connect across 2 wires of the 3 phase line.

#### Performance Data in CFM. at Various Pressures

Size	RPM.	Hp.	Free Air	STATIC PRESSURE, INCHES					
				1/8	1/4	3/8	1/2	5/8	3/4
B 9	1140	1/70	180	145	100	.....	.....	.....	.....
B 9	\$1425	1/30	230	200	170	120	.....	.....	.....
B 9	1750	1/20	275	255	235	205	170	.....	.....
B12	1140	1/20	410	370	320	250	.....	.....	.....
B12	\$1425	1/10	515	480	450	400	350	250	.....
B12	1750	1/6	630	.....	.....	.....	515	475	435
B15	855	1/15	590	520	430	300	.....	.....	.....
B15	1140	1/7	790	725	680	610	530	400	.....
B15	\$1425	1/3	980	940	900	860	810	750	680
B15	1750	1/2	1200	.....	.....	.....	.....	1030	990
B18	\$ 710	1/8	840	750	630	400	.....	.....	.....
B18	855	1/7	1000	.....	820	710	500	.....	.....
B18	1140	1/3	1340	.....	.....	1140	1070	985	880
B18	\$1425	2/3	1670	.....	.....	.....	.....	1410	1350
B18	1750	1 1/4	2050	.....	.....	.....	.....	.....	1810
B21	\$ 710	1/5	1330	1210	1100	930	600	.....	.....
B21	855	1/3	1580	1480	1380	1260	1130	960	750
B21	1140	3/4	2100	.....	.....	1880	1800	1700	1620
B21	\$1425	1 1/2	2640	.....	.....	.....	2400	2340	2270

Size	RPM.	Hp.	Free Air	STATIC PRESSURE, INCHES					
				7/8	1	1 1/4	1 1/2	1 3/4	2
B 9	1140	1/70	180	.....	.....	.....	.....	.....	.....
B 9	\$1425	1/30	230	.....	.....	.....	.....	.....	.....
B 9	1750	1/20	275	.....	.....	.....	.....	.....	.....
B12	1140	1/20	410	.....	.....	.....	.....	.....	.....
B12	\$1425	1/10	515	.....	.....	.....	.....	.....	.....
B12	1750	1/6	630	390	300	.....	.....	.....	.....
B15	855	1/15	590	.....	.....	.....	.....	.....	.....
B15	1140	1/7	790	.....	.....	.....	.....	.....	.....
B15	\$1425	1/3	980	600	470	.....	.....	.....	.....
B15	1750	1/2	1200	940	900	780	600	.....	.....
B18	\$ 710	1/8	840	.....	.....	.....	.....	.....	.....
B18	855	1/7	1000	.....	.....	.....	.....	.....	.....
B18	1140	1/3	1340	720	.....	.....	.....	.....	.....
B18	\$1425	2/3	1670	1280	1210	1030	.....	.....	.....
B18	1750	1 1/4	2050	1770	1720	1610	1490	1360	1200
B21	\$ 710	1/5	1330	.....	.....	.....	.....	.....	.....
B21	855	1/3	1580	.....	.....	.....	.....	.....	.....
B21	1140	3/4	2100	1500	1400	1000	.....	.....	.....
B21	\$1425	1 1/2	2640	2200	2130	1980	1800	1570	.....

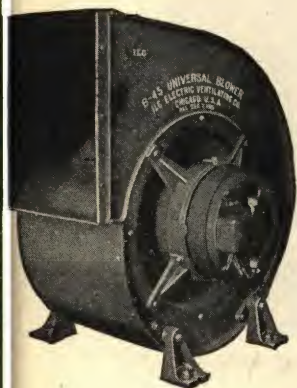
\$720 rpm. and 1425 rpm. on 25-cycle and 50 cycle.

Prices for 25 cycle on application.



## Type B IIg Universal Blowers

## With Forward Curved Wheel



The motor is machined circular and held in a cast iron ring and recessed within the cast iron side of the blower in a sheet steel bowl. The multiblade wheel is mounted directly in the motor shaft. There is little overhang because the motor is recessed. This construction eliminates the inlet bearing, independent motor base, and alignment of motor and wheel. Mounted on 4 legs, the IIg Blower is quickly installed; the universal discharge is possible by relocation of the legs.

All direct current blowers are furnished with speed regulators and covers.

Give current, voltage, cycle, and phase—specify discharge arrangement on order.

## Direct-Connected

Size	RPM.	A.C. 2 & 3 Phase 60 Cycle Constant Speed			*D.C.			Single Phase A.C. 1 Phase 60 Cycle Constant Speed		
		220 or 440 Volts Each	550 Volts Each	Ship. Wt. Lb.	110 or 220 Volts Each	500 Volts Each	Ship. Wt. Lb.	110 Volts Each	220 Volts Each	Ship. Wt. Lb.
B25W	685	\$265.50	\$293.48	220	\$386.98	\$415.65	240	\$354.90	\$302.35	250
B25W	855	308.49	337.16	220	458.64	483.21	360	414.96	349.44	250
B25W	1140	364.46	393.12	295	601.97	630.63	360	.....	.....	.....
B30W	685	414.96	442.95	350	587.64	616.30	410	515.97	472.98	405
B25W	855	457.28	485.94	380	689.33	717.99	410	.....	.....	.....
B30W	1140	556.24	584.91	460	831.29	859.95	650	.....	.....	.....
B35	570	485.94	514.61	470	742.56	771.23	510	559.65	532.35	550
B35	685	515.97	544.64	470	911.82	940.49	670	.....	567.84	550
B35	855	608.11	636.09	470	974.61	1003.28	670	.....	.....	.....
B40	570	592.41	621.08	630	971.88	1000.55	780	.....	648.38	725
B40	685	692.74	720.72	650	1106.34	1135.68	850	.....	.....	.....
B40	855	773.96	816.96	650	1404.59	1590.91	925	.....	.....	.....
B45	490	741.20	784.20	750	1094.73	1123.40	990	.....	824.46	850
B45	570	813.54	855.86	800	1266.72	1295.39	1050	.....	911.82	850
B45	685	966.42	1008.74	920	1304.26	1332.93	1050	.....	.....	.....
B50	490	941.85	982.80	955	1275.60	1318.59	1160	.....	1046.96	1040
B50	570	1016.93	1057.88	955	1490.58	1562.25	1410	.....	.....	.....

\*Furnished with speed regulator.

## Speed, Capacity and Brake Hp. at Various Pressures—For 60-Cycle and D.C.

Size	RPM.	Wheel Diam. In.	STATIC PRESSURE, INCHES													
			1/8	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4	2	2 1/4
B25	685	12 3/4	1750	.29	1580	.26	1400	.23	.....	.....	.....	.....	.....	.....	.....	.....
B25	855	12 3/4	2265	.58	2135	.54	2000	.51	1860	.47	1715	.44	.....	.....	.....	.....
B25	1140	12 3/4	.....	.....	.....	.....	.....	.....	2700	1.23	2600	1.18	2490	1.13	2390	1.09
B30	685	15 1/2	3310	.80	3110	.75	2910	.71	2690	.65	2455	.60	.....	.....	.....	.....
B30	855	15 1/2	.....	.....	.....	.....	.....	.....	3550	1.32	3330	1.26	3200	1.19	3000	1.12
B30	1140	15 1/2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
B35	570	18 1/4	3744	.71	3440	.66	3130	.60	3130	.60	.....	.....	.....	.....	.....	.....
B35	685	18 1/4	4640	1.28	4395	1.20	4140	1.14	3880	1.06	3600	1.00	3285	.91	.....	.....
B35	855	18 1/4	.....	.....	.....	.....	.....	.....	5090	2.16	4880	2.07	4665	2.00	4440	1.90
B40	570	21	5890	1.49	5530	1.40	5180	1.32	4800	1.22	4432	1.13	3970	1.02	.....	.....
B40	685	21	.....	.....	.....	.....	.....	.....	6340	2.33	6030	2.22	5720	2.15	5370	1.98
B40	855	21	.....	.....	.....	.....	.....	.....	8200	4.65	7920	4.51	7740	4.40	7470	4.25
B45	490	23 3/4	7330	1.72	6875	1.60	6400	1.51	5900	1.40	5070	1.21	4660	1.12	.....	.....
B45	570	23 3/4	8720	2.75	8340	2.64	7940	2.52	7530	2.40	7080	2.25	6620	2.12	.....	.....
B45	685	23 3/4	.....	.....	.....	.....	.....	.....	9300	4.40	8950	4.25	8620	4.09	8250	3.92
B50	490	26 1/2	10420	3.05	9900	2.90	9380	2.75	8850	2.60	8300	2.45	7680	2.26	.....	.....
B50	570	26 1/2	.....	.....	.....	.....	.....	.....	10450	4.18	10000	4.00	9520	3.83	9000	3.50





## Type BC 11g Universal Blowers

With Backward Curved Non-Overloading Wheel

Non-overloading characteristics have been brought to a high state of development in the 11g Type BC Blowers. The motor load remains constant for a large range of air volume over a considerable change in static pressure.

This feature is of distinct value to the architect, the engineer, and contractor in installations where the actual resistance in the system does not agree with the calculated figure for there is not a chance of a motor overload in case the resistance is less than calculated.

Blower has high efficiency available in direct-connected and belted single width, single inlet types and belted double width, double inlet type. The discharge is universal.

Enclosed speed regulators furnished with direct current blowers.

Size	RPM.	Direct Connected										*Belted			
		60 CYCLE A.C.					D.C.					SINGLE WIDTH SINGLE INLET		DOUBLE WIDTH DOUBLE INLET	
		220 or 440 Volts Each	550 Volts Each	110 Volts Each	220 Volts Each	Ship. Wt. Lb.	110 or 220 Volts Each	550 Volts Each	Ship. Wt. Lb.			Each	Wt. Lb.	Each	Wt. Lb.
BC25	1140	\$286.65	\$308.49	\$353.49	\$322.83	220	\$307.13	\$328.29	230						
BC25	1750	293.48	315.32	428.61	343.98	220	410.87	432.71	230	\$160.39	175				
BC30	1140	313.95	337.16	421.79	354.90	300	346.71	368.55	310						
BC30	1750	321.46	342.62		405.41	300	492.77	514.61	330	195.20	225				
BC35	855	341.25	369.92	449.09	380.84	350	384.25	412.23	360						
BC35	1140	351.49	379.47	543.27	410.87	350	522.80	551.46	375						
BC35	1750	580.81				480	865.41	894.08	530	252.53	295				
BC40	855	379.47	472.29	582.86	444.99	500	557.61	586.27	525						
BC40	1140	507.78	536.45		600.60	530	832.65	861.32	580						
BC40	1750	709.80	737.10			625	1205.30	1233.96	725	315.32	425				
BC45	685	535.08	563.75		599.24	650	799.89	828.56	700						
BC45	855	543.27	571.94		630.63	650	835.38	864.05	700						
BC45	1140	659.30				750	1007.37	1036.04	880	372.65	550				
BC50	685	668.85	687.96		785.26	800	865.41	894.08	850						
BC50	855	690.69	719.36		828.56	875	1130.22	1158.21	1000						
BC50	1140	806.72	835.38			900	1422.33	1464.65	1090	450.45	725	\$996.42	925		
BC55	570	644.97	673.63		723.45	950	917.28	945.95	1000						
BC55	685	697.52	726.18		820.37	950	958.23	987.58	1000						
BC55	855	716.63	745.29			980	1128.86	1158.21	1080	515.97	850	1119.30	1075		
BC60	570	693.42	722.09		790.34	1200	1190.30	1147.97	1330						
BC60	685	745.29	773.96		931.62	1200	1304.94	1332.93	1420						
BC60	855	854.49	897.49			1225	1898.72	1942.40	1580	582.18	1025	1221.68	1275		
BC65	570	1037.40	1078.35			1400	1624.35	1665.30	1750						
BC65	685	1180.73	1221.68			1400	1870.05	1911.00	1950						
BC65										621.08	1200	1411.41	1500		
BC70	570	1233.96	1276.28			1600	1856.40	1897.35	1760						
BC70	685	1411.41	1455.09			1625	2265.90	2313.68	1920						
BC70										682.50	1400	1861.86	1825		
BC80										887.25	1800	2416.74	2375		
BC90										1086.54	2400		3200		

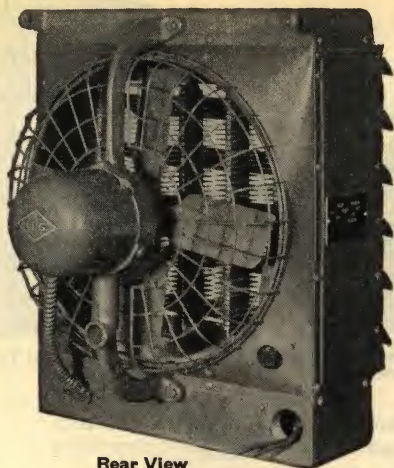
\*Motor and drive not included.

### Speed, Capacity and Brake Hp. at Various Pressures for 60 Cy. and D.C.—Direct Connected

Size	RPM.	STATIC PRESSURE, INCHES															
		1/4		1/2		3/4		1		1 1/4		1 1/2		1 3/4		2	
		CFM.	Hp.	CFM.	Hp.	CFM.	Hp.	CFM.	Hp.	CFM.	Hp.	CFM.	Hp.	CFM.	Hp.	CFM.	Hp.
BC25	1140	1050	.10	825	.10	550	.10										
BC25	1750	1790	.37	1650	.37	1520	.37	1375	.37	1225	.37	1065	.37	860	.36		
BC30	1140	2010	.28	1760	.28	1480	.28	1200	.27								
BC30	1750	3300	.99	3135	.99	2960	.99	2785	.99	2610	.99	2440	.99	2260	.99	2090	.98
BC35	855	2350	.30	1950	.30	1500	.25										
BC35	1140	3400	.60	3100	.60	2800	.60	2475	.60	2150	.60	1750	.58				
BC35	1750	5470	2.22	5300	2.22	5100	2.22	4900	2.22	4700	2.22	4500	2.22	4300	2.22	4080	2.22
BC40	855	3750	.55	3280	.55	2800	.55	2250	.55	1300	.45						
BC40	1140	5300	1.25	4950	1.25	4600	1.25	4240	1.25	3850	1.25	3480	1.25	3100	1.25	2625	1.24
BC40	1750	8375	4.52	8160	4.52	7950	4.52	7720	4.52	7500	4.52	7260	4.52	7050	4.52	6800	4.52
BC45	685	4220	.50	3600	.50	2850	.50	1800	.46								
BC45	855	5570	.98	5050	.98	4500	.98	3950	.98	3400	.98	2500	.92				
BC45	1140	7700	2.31	7300	2.31	6900	2.31	6500	2.31	6100	2.31	5660	2.31	5250	2.31	4850	2.31
BC50	685	6050	.85	5300	.85	4500	.85	3750	.85	2000	.70						
BC50	855	7850	1.65	7250	1.65	6660	1.65	6100	1.65	5450	1.65	4850	1.65	4050	1.65		
BC50	1140	10780	3.93	10350	3.93	9890	3.93	9450	3.93	9000	3.93	8500	3.93	8070	3.93	7600	3.93
BC55	570	6600	.82	5600	.82	4580	.82	3300	.82								
BC55	685	8300	1.42	7500	1.42	6650	1.42	5800	1.42	4900	1.42	3600	1.32				
BC55	855	10700	2.77	10000	2.77	9370	2.77	8700	2.77	8010	2.77	7350	2.77	6690	2.77	6000	2.77
BC60	570	8900	1.27	7750	1.27	6600	1.27	5500	1.27	3800	1.15						
BC60	685	11020	2.22	10100	2.22	9200	2.22	8250	2.22	7300	2.22	6400	2.22	5100	2.10		
BC60	855	14200	4.30	13500	4.30	12750	4.30	12000	4.30	11250	4.30	10500	4.30	9750	4.30	9000	4.30
BC65	570	13400	2.80	12250	2.80	11000	2.80	9650	2.80	8000	2.44	5900	2.18				
BC65	685	16400	4.80	15500	4.80	14660	4.80	13550	4.80	12450	4.80	11250	4.80	9950	4.60	8350	4.60
BC70	570	14700	2.85	13400	2.85	12200	2.85	10800	2.85	9500	2.85	8150	2.85	5500	2.50		
BC70	685	18150	4.85	17100	4.85	16000	4.85	14900	4.85	13800	4.85	12800	4.85	11700	4.85	10600	4.85



## 1lg Electric Unit Heaters



Rear View

Unit is of the black heat type. The heating elements, individually replaceable, are enclosed in a finned metal sheath. No oxidation is possible. Self-cooled motor propeller fan unit and elements connected within the unit, single set of leads brought out.

Nos. 513 to 1517 can be furnished only for those currents for which controllers are listed, since controller is necessary to obtain operation of thermal safety switch on unit heater.

Controller equipment includes enclosed magnetic starter and remote control switch.

Frame Size.....	13EU	17EU
Width.....inches	15½	18½
Height.....inches	21	24¾
Depth.....inches	18½	19¼
Width Between Hanger Bolts...inches	13¼	16¼

All Nos. except Nos. 1213 and 1513 are available for 110 or 220 volts a.c., 230 volts, d.c. The No. 513 is also available for single phase a.c. and d.c. and for 3 phase. All Nos. except Nos. 1217 and 1517 are available for 440 volts a.c., 550 volts a.c. or d.c.

No.	Cap. KW.	RPM.	CFM.	Cap. Btu.	Frame Size	Ship. Wt. Lb.
513	5	1140	335	17100	13EU	75
613	6	1140	465	20500	13EU	75
913	9	1140	600	30800	13EU	80
1213	12	1140	800	41000	13EU	85
1217	12	855	800	41000	17EU	125
1513	15	1140	1000	51200	13EU	90
1517	15	855	1000	51200	17EU	125

Prices, including automatic thermal safety switch, furnished upon application.

## \*Controller Equipment

KW. Cap.	†1 Phase		†2-3 Phase	
	110 V. No.	220 V. No.	220 V. No.	440 V. No.
5	H7879592	H6849592	H6979592	.....
6	H579592	H7889592	H6979592	H6989592
9	H579592	H7889592	H6979592	H6989592
12	H1359592	H589592	H8019592	H6989592
15	H1359592	H589592	H8019592	H6989592

KW. Cap.	†2-3 Phase 550 V. No.	Direct Current	
		230 V. No.	550 V. No.
5	.....	H566005	.....
6	H6999592	H566005	H576005
9	H6999592	H566005	H576005
12	H6999592	H596005	H576005
15	H6999592	H596005	†

\*No. 1025H289 pilot switch is included in the controller prices and should be specified on the order.

†Available in 25, 30, 40, 50 and 60-cycles.

‡Upon application.

## Type HT 1lg Electric Unit Heaters

No Controller Is Required



For space heating or drying. Eye bolts provided for suspension of unit.

Heating element is non-overheating and interchangeable. Its temperature, whether fan is running or not, does not exceed 400°F. Self-adjusting to temperature, having a slightly higher kilowatt capacity in a cold room than in a warm room.

Suitable for connection to 110 or 220 volts single-phase and to 220 volts 3-phase.

Dimensions over all: Width, 12¾ inches; height, 15 inches; depth, 12¼ inches. Dimensions of case only excluding fan and hanger bolts: Width, 12¾ inches; height, 13¾ inches; depth, 5¾ inches; distance between eye bolts, 5½ inches. Speed, 1550 rpm.

Complete unit is finished in brown crinkle enamel.

When ordering, specify exact voltage. Units for direct current and special voltages can also be supplied.

Shipping weight, 26 pounds. Net weight, 20 pounds.

No.	110HT	210HT	310HT	410HT
Each.....	\$50.07	\$2.00	\$4.60	\$8.50
Capacity.....kw.	1½	2	3	4
CFM.....	250	250	400	400
Capacity.....Btu.	5,100	6,800	10,200	13,600

## 1lg Gas Fired Unit Heaters

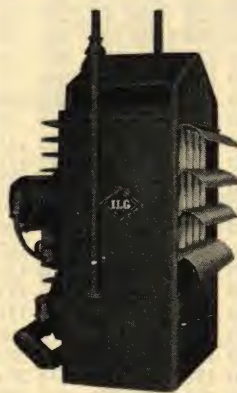
**For Heating.**—A complete heating unit in itself, consisting of radiator, fan, electric motor, Bunsen type burner, and electric automatic controls. No water or steam is needed.

**For Ventilation.**—Unit can be located so that complete air circulation is effected without drafts.

**For Cooling.**—During the summer months the gas may be turned off and the fan will force air circulation.

**For Drying.**—In drying room and in the manufacture of products requiring dehydration, this unit heater will be found quick, safe and economical.

Can also be furnished with an exhaust fan for the flue products. Exhaust fan is so designed to force the flue products out a 4-inch pipe, and no flue is needed. Complete details upon request.



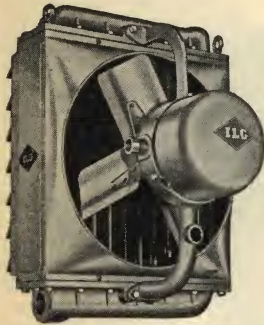
Venting tubes made of steel; burner, combustion chamber, tube sheets and draft hood made of cast iron. Has tested safety pilot, which automatically turns off the gas if for any reason the pilot goes out, or burns too low to insure perfect ignition.

Brown wrinkle finish with chromium louvers.

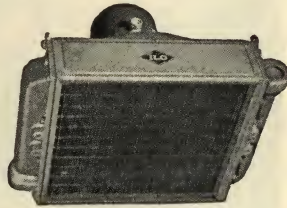
No.	Each	Input BTU.	Output BTU.	Air Delivery CFM.	Ship. Wt. Lb.
85U	.....	85,000	68,000	1520	216
100U	.....	100,000	80,000	1820	316
130U	.....	130,000	104,000	2320	327
160U	.....	160,000	128,000	2930	462
200U	.....	200,000	160,000	3500	475



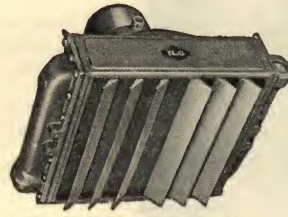
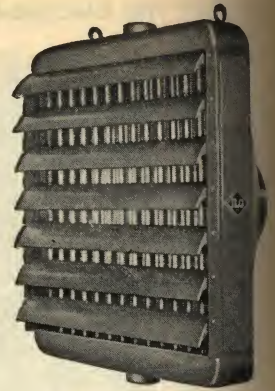
## ILG Unit Heaters



Low Ceiling Type



Vertical Type

Vertical Type with Variable  
Air Deflectors

Horizontal Type

Powerful Ilg self-cooled motor propeller fan enables a stream of warm air to be concentrated at the floor level and minimizes heat loss above the working zone. Can be operated manually, by electric thermostat or stream regulator.

Uniformity of design and construction assures balanced performance.

Tested and rated in accordance with the standard code adopted by the Industrial Unit Heater Association and the American Society of Heating and Ventilating Engineers.

Each heater is given a 500-pound hydrostatic test and a complete electrical test.

Standard finish is Ilg green.

Unit heater prices include fan, motor, casing, individually adjusted air deflectors and heating element. Speed regulator is included where specifically stated. No air valves or other accessories are included.

The exact motor voltage must be specified when ordering.

## Specifications—All Types

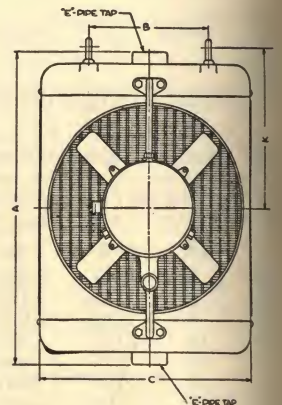
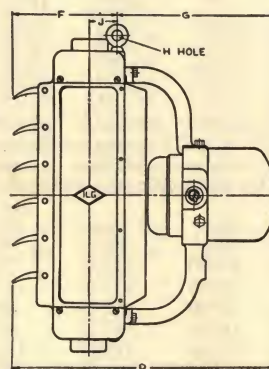
Basis of Rating: 2 Lb. Steam Pressure 60°F. Entering Air

SIZE AND TYPE			60 Cy. A.C. and D.C. Motor Speed	Final Temp. Deg. F.	*CFM.	Watts	†E.D.R.	Condensation Lb.
Horizontal	Vertical	Low Ceiling	RPM.	BTU.				
10-1S6	.....	.....	1550	18,600	111	385	40	77.518
10-S6	.....	.....	1550	28,400	134	385	40	118 30
13-G6	V13-G6	S13-G6	1140	40,000	134	500	60	167 42
13-D6	V13-D6	S13-D6	1140	50,500	132	650	70	210 53
13-E6	V13-E6	S13-E6	855	53,900	131	700	65	224 56
			1140	68,300	128	930	110	285 71
13-H6	V13-H6	S13-H6	855	61,500	129	820	75	256 64
			1140	77,900	125	1100	130	324 81
13-F6	V13-F6	S13-F6	1750	90,500	118	1430	290	377 94
17-D6	V17-D6	S17-D6	855	73,500	135	900	145	306 77
			1140	91,000	130	1200	115	379 95
17-T6	V17-T6	S17-T6	855	85,200	131	1100	125	355 89
			1140	106,000	126	1480	140	442 111
17-H6	V17-H6	S17-H6	855	106,000	126	1480	155	442 111
			1140	128,000	120	1980	230	553 133
17-F6	V17-F6	S17-F6	1750	144,000	108	2750	500	600 150
19-D6	V19-D6	S19-D6	855	115,000	124	1650	155	479 120
			1140	151,000	123	2200	195	629 157
19-E6	V19-E6	S19-E6	855	145,000	124	2090	185	604 151
			1140	171,500	120	2640	275	715 179
19-H6	V19-H6	S19-H6	855	164,000	121	2470	220	684 171
			1140	195,000	115	3300	415	813 203
19-F6	V19-F6	S19-F6	1750	213,000	105	4400	765	888 222
25-D6	V25-D6	S25-D6	685	195,400	131	2540	155	814 204
			855	229,000	126	3190	250	954 239
25-E6	V25-E6	S25-E6	685	231,500	126	3250	200	965 241
			855	268,200	121	4080	370	1118 280
25-F6	V25-F6	S25-F6	1140	286,000	117	4670	515	1191 298

Ratings apply only in recirculation and free discharge:  
\*CFM. Cubic feet per minute of standard air at 70°F. and standard basis of rating (2 pounds steam pressure 60°F. entering air). Where steam pressure is referred to as a condition of rating it is meant to be the gauge pressure maintained on the heating surface and to determine the pressure required at the boiler a suitable line drop must be allowed for. Where heaters are to handle air at temperatures below freezing it is recommended that a minimum pressure of 5 pounds gauge should be maintained on the heating surface.

†E.D.R. Equivalent direct radiation at standard basis of rating.

## Horizontal Type Dimensions



Size No.	DIMENSIONS, INCHES				
	A	B	C	D	E
10	18	5 $\frac{5}{8}$	12 $\frac{1}{2}$	15 $\frac{1}{16}$	1 $\frac{1}{4}$
13	21	8 $\frac{1}{2}$	15 $\frac{1}{2}$	18 $\frac{3}{8}$	1 $\frac{1}{4}$
17	24	11 $\frac{1}{2}$	18 $\frac{1}{2}$	20 $\frac{5}{16}$	1 $\frac{1}{2}$
19	27	15	21 $\frac{1}{2}$	25 $\frac{3}{4}$	1 $\frac{1}{2}$
25	35	20	27 $\frac{3}{4}$	27 $\frac{1}{16}$	2 $\frac{1}{2}$

Size No.	DIMENSIONS, INCHES				
	F	G	H	J	K
10	7 $\frac{1}{16}$	7 $\frac{3}{4}$	3 $\frac{3}{4}$	2	7 $\frac{1}{16}$
13	7 $\frac{1}{16}$	11 $\frac{1}{16}$	3 $\frac{3}{4}$	2	9 $\frac{7}{16}$
17	7 $\frac{1}{16}$	13	3 $\frac{3}{4}$	2	10 $\frac{3}{16}$
19	7 $\frac{1}{2}$	18 $\frac{1}{4}$	3 $\frac{3}{4}$	2	12 $\frac{1}{16}$
25	9 $\frac{3}{4}$	17 $\frac{1}{16}$	3 $\frac{3}{4}$	2 $\frac{3}{8}$	15 $\frac{5}{16}$

## Net Face Areas

Outlet velocities of Ilg Unit Heaters of all types can be computed on the basis of the following net face areas:

Size No.	10	13	17	19	25
Net Face Area.....sq. ft.	1.00	1.56	2.25	3.06	5.06

Dimensions for Vertical, Horizontal (Size No. 19-2) and Low Ceiling types furnished upon request.



## G-E Natural-Convection-Type Horizontal Unit Heaters

A convenient, easily installed heater for heating out-of-the-way places.

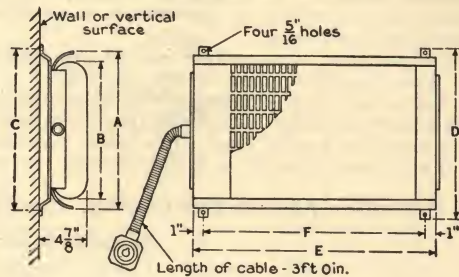
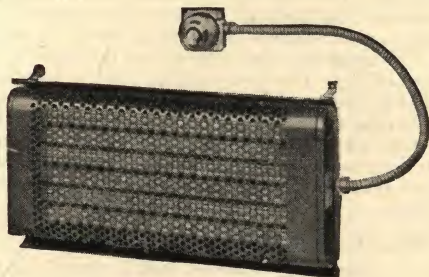
Common typical applications: substations, valve houses, pump houses, warehouses, crane cabs, airplane hangars, electric locomotives, blower rooms, repair shops, service stations, laboratories, garages, scale rooms, watchmen's houses, elevators, drying rooms, waiting stations, and ticket booths.

Free air circulation provides maximum heat. Heater is easily installed, simply mount on wall or floor and connect to power line. Easily moved from one job to another.

Heat is available at the turn of the switch. The 3-heat switch provides simple regulation of temperature and economy of operation.

Heater consists of a number of G-E strip heaters mounted in a perforated, pressed-steel case with heat-resisting painted finish.

### Wall-Mounted Style

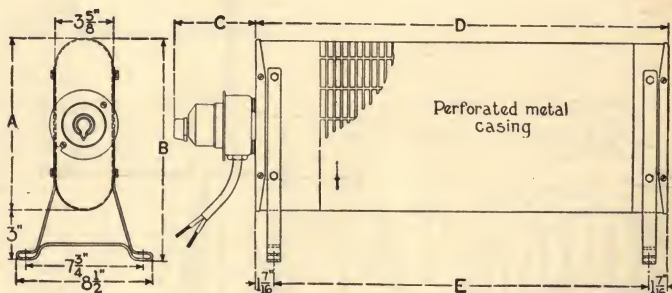


Designed for mounting directly on wall with main axis horizontal. Can be mounted with cable emerging from either right or left end.

Equipped with heat baffles to prevent overheating and scorching of wall surfaces.

Watts	With 3-Ft. Armored Cable and 3-Heat Snap Switch				Without Armored Cable and Switch				DIMENSIONS, INCHES						Ap. prox. Ship. Wt. Lb.	
	A.C. or D.C.		A.C. Only		A.C. or D.C.		A.C. Only		A	B	C	D	E	F		
	115 Volts No.	230 Volts No.	*Each	440 Volts No.	*Each	115 Volts No.	230 Volts No.	440 Volts No.								*Each
1000	2A290G40	2A290G41	\$28.00	2A290G42	\$33.00	2A290	2A290G2	2A290G3	\$23.65	9 1/2	7 3/4	10 3/8	11 1/4	25 3/4	23 3/4	22
2000	2A291G40	2A291G41	38.00	2A291G42	43.00	2A291	2A291G2	2A291G3	32.00	12 1/4	10 1/2	13 1/8	14	25 3/4	23 3/4	32
3000	.....	2A292G41	47.00	2A292G42	52.00	.....	2A292G2	2A292G3	40.00	16	14 1/4	16 7/8	17 3/4	25 3/4	23 3/4	40
4500	.....	2A293G41	63.00	2A293G42	68.00	.....	2A293G2	2A293G3	54.00	16	14 1/4	16 7/8	17 3/4	32 3/8	30 3/8	50

### Floor-Mounted Style



Each heater is equipped with a 3-heat snap switch mounted on one end and a 10-foot rubber-covered heater cord.

Watts	A.C. or D.C.			A.C. Only		DIMENSIONS, INCHES					Approx. Ship. Wt. Lb.
	115 Volts No.	230 Volts No.	*Each	440 Volts No.	*Each	A	B	C	D	E	
1000	2A294G20	2A294G21	\$22.30	2A294G22	\$27.30	7 3/4	10 3/4	4 1/4	25 5/8	22 3/4	25
2000	2A295G20	2A295G21	29.00	2A295G22	34.00	10 7/16	13 7/16	5	25 5/8	22 3/4	33
3000	.....	2A296G21	36.00	2A296G22	41.00	14 1/4	17 1/4	5 1/4	25 5/8	22 3/4	40
4500	.....	2A297G21	47.00	2A297G22	52.00	14 1/4	17 1/4	5 1/4	32 1/4	29 3/8	50

\*Add Federal manufacturer's excise tax of 10 per cent of net price of heaters and controls.

Suitable G-E Control Is Available for These Unit Heaters. Ask Your Distributor for Complete Details.

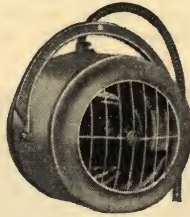


## G-E Forced-Convection-Type Unit Heaters

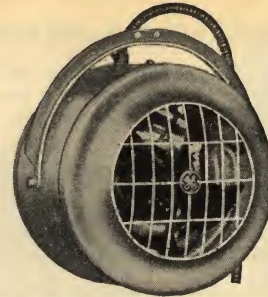
50-60 Cycles, A.C.



Portable Style



Suspension Styles



Available in two styles: portable, primarily for floor mounting; suspension, for wall or ceiling mounting.

**Heater.** Equipped with G-E Calrod heater with strong radiating fins that multiply its radiating surface. These fins are electric-furnace-brazed to the heater to provide maximum heat-transfer efficiency.

**Fan.** With G-E aphonic pressure-type fan with matching outlet orifice. Provides efficient and quiet operation.

**Motor.** A G-E totally enclosed motor with sleeve bearings. Motor is protected against direct radiation from heating units by an ingenious baffle. Cool air is drawn over the motor frame at all times through the space between motor and the baffle.

**Automatic Protection Against Overheating.** Heaters

rated under 10 kilowatts have a convenient reset button located on outside of case. On heaters rated 10 kilowatts and higher, remote push-button control is used, and the push button provides the necessary reset feature.

**Housing.** Heater may be directed upward or downward as much as 30 degrees from horizontal, to serve required area. The absence of louvers allows free flow of air.

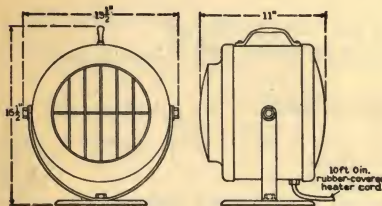
**Wide Utility.** The two smaller sizes of heaters are so designed that they can be used as fans during hot weather.

To operate motor and fan independently of heaters, the 2-, 3-, and 4-kw heaters are provided with tumbler switch mounted on casing. On the 5- and 7.5-kw heaters, fan-motor leads are brought out so that fan can be connected to manual switch.

## Portable Style—For Floor Mounting

Can be arranged for suspension mounting. Unbolt foot pedestal and supporting arm and readjust arm so that it will be 180 degrees from standard location.

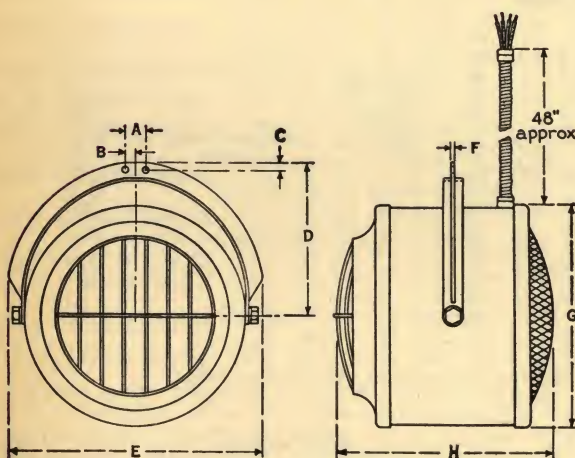
—APPROX. CONDITIONS UNDER NORMAL OPERATION—



Kw.	No.		\$Each	Btu. per Hr.	240 Btu. per Sq. Ft.	Air Ft. per Min.	Air Cu. Ft. per Min. at Outlet Temp.	TEMP. DEGREES F.		Approx. Ship. Wt. Lb.
	115 Volts Sgl.-Ph.	*230 Volts Sgl.-Ph.						Inlet	Outlet	
2	2A174G31	2A174G30	\$58.00	6,824	28.4	480	140	70	113	40
3	2A175G23	2A175G30	66.00	10,236	42.7	730	206	70	113	43
4	.....	2A176G30	75.00	13,648	56.9	750	212	70	127	46

## Suspension Style—For Wall or Ceiling Mounting

Kw.	No.	230 Volts, Sgl.-Ph.	230 Volts, 3-Phase	\$Each	Approx. Ship. Wt. Lb.
5.0	2A177G27	.....	.....	\$81.00	80
7.5	2A178G27	.....	.....	115.00	90
10.0	.....	2A201G20	.....	139.00	140
12.5	.....	2A202G20	.....	158.00	150
15.0	.....	2A203G20	.....	175.00	160



Kw.	DIMENSIONS, INCHES							
	A	B	C	D	E	F	G	H
5.0	11 1/2	3 3/4	1 1/2	10 5/8	17 1/4	3 3/8	15	13 1/4
7.5	11 1/2	3 3/4	1 1/2	10 5/8	17 1/4	3 3/8	15	13 1/4
10.0	2	1	5/8	14 3/8	25 1/8	1 1/4	22	19 1/2
12.5	2	1	5/8	14 3/8	25 1/8	1 1/4	22	19 1/2
15.0	2	1	5/8	14 3/8	25 1/8	1 1/4	22	19 1/2

## Approximate Conditions under Normal Operation

Kw.	Btu. per Hr.	†E.D.R. at 240 Btu. per Sq. Ft.	Average Velocity Air, Ft. per Min.	Vol. Air, Cu. Ft. per Min. at Outlet Temp.	TEMP. DEGREES F.	
					Inlet	Outlet
5.0	17,060	71.1	850	510	70	99
7.5	25,590	106.4	865	520	70	113
10.0	34,120	142.0	1725	1540	70	90
12.5	42,650	178.0	1753	1565	70	95
15.0	51,180	213.0	1782	1590	70	100

For all such specials, add as follows to price of standard heater.

Quantity (Inclusive)	Price Addition
1 to 9	\$10.00
10 to 24	5.00
25 or more	none

†EDR: Equivalent direct radiation.

‡Price includes 4 feet of armored connecting cable.

§Add Federal manufacturer's excise tax of 10 per cent of net price of heaters and controls.

\*Standard 230-volt heaters operated on 208 volts, 50-60 cycles, a-c, will dissipate approximately 82% of listed kw. Special unit heaters can be supplied for connection of both fan motor and heating elements to circuits listed: 50-60 cycles, 115 volts, single-phase, a-c 208 or 440 volts, a-c single-phase, 2 to 7.5 kw; 3-phase, 10 to 15 kw.; d-c, 115 volts, 2 and 3 kw; d-c, 230 or 250 volts, 2 to 15 kw.

Suitable G-E Control Is Available for These Unit Heaters. Ask Your Distributor for Complete Details



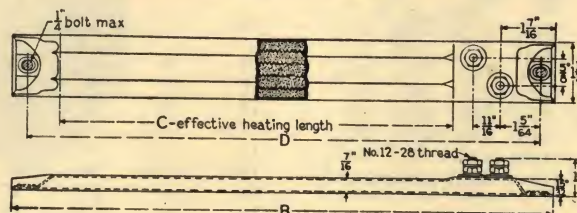
## G-E Strip Heaters



Serve as an air and clamp-on heaters. A few of the common applications are for: process machinery, drying ovens, warming tables, glue tables, water baths, drying cabinets, pipe lines, incubators, valve and pump houses, etc.

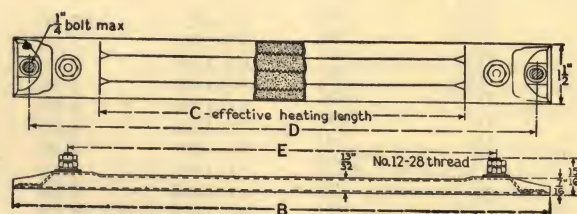
**Features:** uniform heat distribution; ridged construction that withstands vibration; compressed insulation.

## With Offset Terminals at One End



Steel Sheath MAXIMUM ALLOWABLE SHEATH TEMPERATURE, 750°F.				Chrome Steel Sheath MAXIMUM ALLOWABLE SHEATH TEMPERATURE, 1200°F.				DIMENSIONS, INCHES				Approx. Ship. Wt. Lb.
No.	Each	Watts	Volts	No.	Each	Watts	Volts	B	C	D	E	
2A155G2	\$4.50	1000	115	2A409	\$6.95	1500	115	35 1/2	31 1/2	34 3/4	....	3
2A155	4.50	1000	230	2A409G2	6.95	1500	230	35 1/2	31 1/2	34 3/4	....	3
.....	.....	.....	.....	2A408G2	6.95	1000	230	35 1/2	31 1/2	34 3/4	....	3
2A154G3	3.90	750	115	2A407	6.05	1000	115	30 1/8	26 1/8	29 3/8	....	3
2A154	3.90	750	230	2A407G2	6.05	1000	230	30 1/8	26 1/8	29 3/8	....	3
.....	.....	.....	.....	2A406G2	6.05	750	230	30 1/8	26 1/8	29 3/8	....	3
2A153	3.10	500	115	2A405	5.10	750	115	23 1/2	19 1/2	22 3/4	....	2
2A153G2	3.10	500	230	2A405G2	5.10	750	230	23 1/2	19 1/2	22 3/4	....	2
2A153G5	3.10	500	275	2A404	5.10	500	115	23 1/2	19 1/2	22 3/4	....	2
.....	.....	.....	.....	2A404G2	5.10	500	230	23 1/2	19 1/2	22 3/4	....	2
2A152	2.90	350	115	2A403	4.60	500	115	17 5/8	13 5/8	16 7/8	....	2
2A152G2	2.90	350	230	2A403G2	4.60	500	230	17 5/8	13 5/8	16 7/8	....	2
.....	.....	.....	.....	2A402	4.60	350	115	17 5/8	13 5/8	16 7/8	....	2
.....	.....	.....	.....	2A402G2	4.60	350	230	17 5/8	13 5/8	16 7/8	....	2
2A339	2.65	250	115	2A401	4.05	350	115	11 3/4	7 3/4	11	....	2
2A339G2	2.65	250	230	2A401G2	4.05	350	230	11 3/4	7 3/4	11	....	2
2A338	2.55	150	115	2A400	3.60	200	115	7	3	6 1/4	....	2
2A338G2	2.55	150	230	2A400G2	3.60	200	230	7	3	6 1/4	....	2

## With Terminals on Both Ends



Steel Sheath MAXIMUM ALLOWABLE SHEATH TEMPERATURE, 750°F.				Porcelain-Enamelled Steel Sheath MAXIMUM ALLOWABLE STEEL SHEATH TEMPERATURE, 1200°F.				DIMENSIONS, INCHES				Approx. Ship. Wt. Lb.
No.	Each	Watts	Volts	No.	Each	Watts	Volts	B	C	D	E	
1X348	\$3.10	500	115	2A414	\$5.10	750	115	23 1/2	19	22 3/4	20 3/4	2
1X349	3.10	500	230	2A414G2	5.10	750	230	23 1/2	19	22 3/4	20 3/4	2
2A125	3.10	500	250	2A413G2	5.10	500	230	23 1/2	19	22 3/4	20 3/4	2
1X346	2.90	350	115	2A412	4.60	500	115	17 5/8	13 1/8	16 7/8	14 7/8	2
1X347	2.90	350	230	2A412G2	4.60	500	230	17 5/8	13 1/8	16 7/8	14 7/8	2
1X344	2.65	250	115	2A411	4.05	350	115	11 3/4	7 1/4	11	9	2
1X345	2.65	250	230	2A411G2	4.05	350	230	11 3/4	7 1/4	11	9	2
1X342	2.55	150	115	2A410	3.60	200	115	7	2 1/2	6 1/4	4 1/4	1

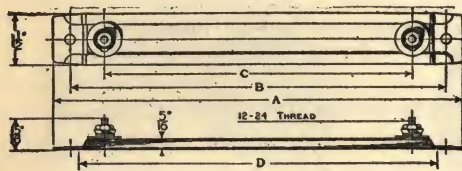
Can be connected in series for 440 or 550-volt circuits. For these voltages, secondary insulation is required.



## Type S Chromalox Electric Strip Heaters

With One Bolt Terminal at Each End

For 115 or 230 Volts



Dimensions

Size In.	DIMEN., INCHES				Size In.	DIMEN., INCHES			
	A	B	C	D		A	B	C	D
8	8	7	5	6 1/2	24	23 3/4	22 3/4	20 3/4	22 1/4
12	12	11	9	10 1/2	25 1/2	25 1/2	24 1/2	22 1/2	24
14	14	13	11	12 1/2	26 3/4	26 3/4	25 3/4	23 3/4	25 1/4
15 1/4	15 1/4	14 1/4	12 1/4	13 3/4	30 1/2	30 1/2	29 1/2	26 1/2	28
18	17 7/8	16 7/8	14 7/8	16 3/8	33 1/2	33 1/2	32 1/2	29 3/8	31
19 1/2	19 1/2	18 1/2	16 1/2	18	36	35 7/8	34 7/8	31 7/8	33 1/2
21	21	20	18	19 1/2	43	42 1/2	41 1/2	38 1/2	40

Dimension D indicates overall length of Style 5 heaters.

Maximum Sheath Temperature 750°F.

(Sheath of Rust-Resisting Iron)

No.	Each	OVERALL LENGTH INCHES		Watts
		*Standard	†Style 5	
S-815	\$2.30	8	6 1/2	150
S-1225	2.40	12	10 1/2	250
S-1430	2.55	14	12 1/2	300
S-1532	2.60	15 1/4	13 3/4	325
S-1850	2.65	17 7/8	16 3/8	500
S-1950	2.70	19 1/2	18	500
S-2050	2.75	21	19 1/2	500
S-2425	2.80	23 3/4	22 1/4	250
†S-2450	2.80	23 3/4	22 1/4	500
†S-2575	3.05	25 1/2	24	750
S-2670	3.10	26 3/4	25 1/4	700
S-3075	3.55	30 1/2	28	750
S-3375	3.85	33 1/2	31	750
S-3610	4.10	35 7/8	33 3/8	1000
S-4312	4.90	42 1/2	40	1250

Maximum Sheath Temperature 1200°F.

(Sheath of Heat-Resisting Chrome Steel)

S-802	\$3.30	8	6 1/2	250
S-1202	3.70	12	10 1/2	250
S-1205	3.70	12	10 1/2	500
S-1405	3.85	14	12 1/2	500
S-1505	3.90	15 1/4	13 3/4	500
S-1805	4.20	17 7/8	16 3/8	500
S-1807	4.25	17 7/8	16 3/8	750
S-1801	4.30	17 7/8	16 3/8	1000
S-1905	4.30	19 1/2	18	500
S-1907	4.45	19 1/2	18	750
S-1901	4.45	19 1/2	18	1000
S-2405	4.65	23 3/4	22 1/4	500
S-2407	4.65	23 3/4	22 1/4	750
S-2401	4.85	23 3/4	22 1/4	1000
S-2501	4.95	25 1/2	24	1000
S-3007	5.50	30 1/2	28	750
S-3601	6.35	35 7/8	33 3/8	1000
S-4301	7.25	42 1/2	40	1500

\*Standard type has fastening tabs at each end with slotted mounting holes 5/16 inch wide by 1/2 inch long for bolting to supports.

†Style 5 (blunt end) has fastening tabs cut off about 3/4 or 1 1/4 inches, depending on overall length from each end, for clamp-on applications.

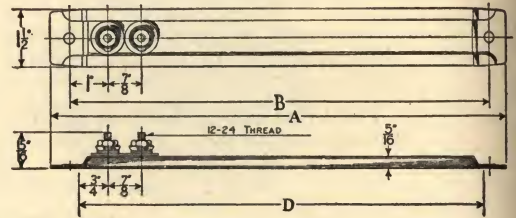
‡Also 250 volts.

When ordering specify if Style 5 is desired, also No. and voltage.

## Type SE Chromalox Electric Strip Heaters

With 2 Bolt Terminals at One End

For 115 and 230 Volts



Dimensions

Size In.	DIMEN., INCHES				Size In.	DIMEN., INCHES			
	A	B	C	D		A	B	C	D
8	8	7	5	6 1/2	25 1/2	25 1/2	24 1/2	22 1/2	24
12	12	11	9	10 1/2	26 3/4	26 3/4	25 3/4	23 3/4	25 1/4
14	14	13	11	12 1/2	30 1/2	30 1/2	29 1/2	26 1/2	28
15 1/4	15 1/4	14 1/4	12 1/4	13 3/4	33 1/2	33 1/2	32 1/2	29 3/8	31
18	17 7/8	16 7/8	14 7/8	16 3/8	36	36	34 7/8	31 7/8	33 1/2
19 1/2	19 1/2	18 1/2	16 1/2	18	38 1/2	38 1/2	37 3/8	34 3/8	36
21	21	20	18	19 1/2	43	42 5/8	41 3/8	38 3/8	40 1/2
24	23 3/4	22 3/4	20 3/4	22 1/4	....	....	....	....	....

Dimension D indicates overall length of Style 5 heaters.

Maximum Sheath Temperature 750°F.

(Sheath of Rust-Resisting Iron)

No.	Each	OVERALL LENGTH IN.		Watts
		*Standard	†Style 5	
SE-815	\$2.30	8	6 1/2	150
SE-1225	2.40	12	10 1/2	250
SE-1430	2.55	14	12 1/2	300
SE-1532	2.60	15 1/4	13 3/4	325
SE-1850	2.65	17 7/8	16 3/8	500
SE-1950	2.70	19 1/2	18	500
SE-2050	2.75	21	19 1/2	500
SE-2450	2.80	23 3/4	22 1/4	500
SE-2475	2.95	23 3/4	22 1/4	750
SE-2575	3.05	25 1/2	24	750
SE-2670	3.10	26 3/4	25 1/4	700
SE-3075	3.55	30 1/2	28	750
SE-3375	3.85	33 1/2	31	750
SE-3610	4.10	35 7/8	33 3/8	1000
SE-3880	4.35	38 1/2	36	800
SE-4312	4.90	42 1/2	40	1250

Maximum Sheath Temperature 1200°F.

(Sheath of Heat-Resisting Chrome Steel)

SE-802	\$3.30	8	6 1/2	250
SE-1202	3.70	12	10 1/2	250
SE-1205	3.70	12	10 1/2	500
SE-1405	3.85	14	12 1/2	500
SE-1505	3.90	15 1/4	13 3/4	500
SE-1805	4.20	17 7/8	16 3/8	500
SE-1807	4.25	17 7/8	16 3/8	750
SE-1801	4.30	17 7/8	16 3/8	1000
SE-1905	4.30	19 1/2	18	500
SE-1901	4.45	19 1/2	18	1000
SE-2405	4.65	23 3/4	22 1/4	500
SE-2407	4.65	23 3/4	22 1/4	750
SE-2401	4.85	23 3/4	22 1/4	1000
SE-2501	4.95	25 1/2	24	1000
SE-3007	5.50	30 1/2	28	750
SE-3601	6.35	35 7/8	33 3/8	1500
SE-4301	7.25	42 1/2	40	1500

\*Standard type has fastening tabs at each end with slotted mounting holes 5/16 inch wide by 1/2 inch long for bolting to supports.

†Style 5 (blunt end) has fastening tabs cut off about 3/4 or 1 1/4 inches, depending on overall length from each end, for clamp-on applications.

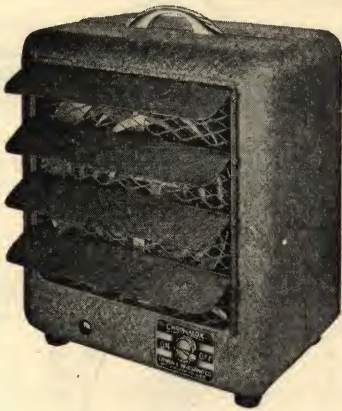
When ordering specify if Style 5 is desired, also No. and voltage.



## Type HF Chromalox Electric Unit Heaters

## Blower Type

115-230 Volts, 60 Cycles, Single Phase



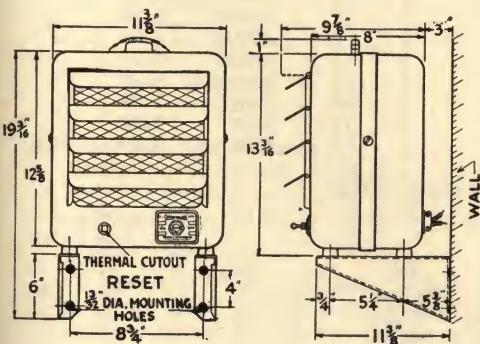
Used to heat watchmen's shelters, factory offices, stock-rooms, warehouses, etc.; in place of steam heating system for heating offices and rooms in spring and fall; to supplement steam heating in cold weather in rooms inadequately heated; and for temporary heating where a portable or easily mounted heater is needed.

Steel heater case provided with handle and rubber feet or pads for portable use. Brackets available for permanent wall mounting. Adjustable louvres will direct air in desired direction. Chromalox Koilstrip elements within the heater warm air drawn in back of heater and forced out the front by cadmium-plated fan. Enclosed type electric motor drives fan.

Positive acting thermostatic switch automatically opens heater circuit if normal operating temperatures are exceeded. Manually operated reset button closes heater circuit when normal temperatures are restored.

Manual control switch turns on heater circuit and fan for winter use, and fan only for summer use. For automatic temperature control, order PA thermostat; prices upon request.

The 1500-watt heaters supplied with 10 feet of heater cord and attachment plug; all other sizes supplied with 10 feet of heater cord only.



No.	HF-151	HF-201	HF-301	HF-401
Each.....	\$31.20	36.70	43.00	48.70
Kilowatts.....	1.5	2.0	3.0	4.0
No. of Volts.....	115-230	115-230	115-230	230
BTU..... per hour	5118	6824	10236	13648
Approx. Air Temp. Rise °F.	32	42	55	75
Approx. Air Velocity fpm.	130	130	180	180
Approx. Ship. Wt.....lb.	21 1/2	21 1/2	24	24

## Type D Chromalox Electric Air Heaters

For 115, 230, and 250 Volts



Recommended for small offices or shops.

The 1000-watt and 1500-watt heaters are supplied complete with 3 heat switch, 6 feet of heater cord and attachment plug. The two larger sizes are furnished with 3-heat switch and 6 feet of heater cord for connection to power line.

No.	EH-810	EH-815	EH-420	EH-430
Each.....	\$20.25	23.40	26.55	32.90
Wattage.....	1000	1500	2000	3000
Overall Length...inches	22	22	28	28
Overall Width...inches	6	6	6	6
Overall Height...inches	13	13	13	13
Approx. Ship. Wt.....lb.	33	33	38	38

## Type H Chromalox Electric Air Heaters

Listed Under Underwriters' Laboratories, Inc.  
Re-Examination Service—Reference No. 7601  
For 115 and 230 Volts



No. EH-2405

Designed for those many hard-to-heat places where heat must be concentrated near the floor. Ideal for mounting underneath low windows.

This heater discharges heated air horizontally into the room where it is needed (not up to the ceiling), thereby providing even heat distribution and eliminating the usual hot spots and cold corners. Mounting side (back part) is always cool, therefore this heater can be fastened to walls or wooden partitions without fire hazard.

Fully assembled with 3 feet of flexible cable and 3-heat switch mounted on standard conduit box ready to connect to power line.

No.	EH-1801	EH-2405	EH-2406	EH-2407
Complete.....each	\$25.30	\$29.75	\$34.15	\$43.00
Without Switch or Cable.....each	21.50	25.95	29.10	36.70
Wattage.....	1000	1500	2000	3000
Length.....inches	20 3/4	26 3/4	26 3/4	26 3/4
Height.....inches	7 1/2	7 1/2	11 1/4	11 1/4
Depth.....inches	4 1/2	4 1/2	4 1/2	4 1/2
Approx. Ship. Wt. ....pounds	28	38	49	49



## G-E Calrod Immersion Heaters

G-E immersion heaters offer the most economical method of heating liquids in tanks, kettles, metal barrels, etc. They are of substantial construction and high efficiency, utilizing the well-known G-E Calrod sheath wire.

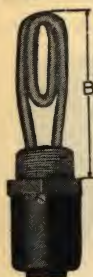


Fig. 1



Fig. 2



Fig. 3

For heating water, a copper-sheathed unit of high heat density, and having a threaded brass header, is used. Typical heaters are shown.

No.		Each	Kw.	No. Heats	Lgth. from End of Unit to Nut on Threaded Collar, "B" Dimen., In.	Diam. Threaded Collar, In.	Length Overall, In.	Fig. No.	Approx. Ship. Wt. Lb.	Snap Switches for Hand Control 250 Volts Maximum (FURNISHED SEPARATELY)		
115 Volts	230 Volts									No.	Each	Description
15X820	15X821	\$11.00	0.6	1	5	1 1/4	8 1/2	1	2	60451	\$1.80	Single-Heat
15X822	15X823	11.70	0.75	1	8	1 1/4	11 1/2	2	2	60451	1.80	Single-Heat
15X824	15X825	13.00	1.0	1	10	1 1/4	13 1/2	2	2	60451	1.80	Single-Heat
15X826	15X827	16.30	1.2	3	8	1 1/4	11 1/2	3	3	278608	3.00	3-Heat
15X828	15X829	18.90	2.0	3	10	1 1/4	13 1/2	3	3 1/2	296569	4.50	3-Heat
*15X830	*15X831	21.50	2.0	3	11 1/8	1 1/8	4 1/2	4	3 1/2	296569	4.50	3-Heat
15X832	.....	22.30	3.0	3	14	2	18	3	6	296569	4.50	3-Heat
.....	†15X833	22.30	3.0	3	14	2	18	3	6	1794	7.20	3-Heat
15X834	†15X835	25.65	4.0	3	18	2	22	3	7	1794	7.20	3-Heat
15X836	†15X837	29.00	5.0	3	22	2	26	3	8	1794	7.20	3-Heat
.....	†50X595	37.00	7.5	3	30	2	34	3	11	1794	7.20	3-Heat
.....	†14X426	46.00	10.0	3	42	2	46	3	14	.....	.....	.....

## For Water—Self-Protecting Type

For service in devices where the unit may accidentally be exposed at times. This heater will operate partly or totally uncovered for a limited period without injury. For its operation, it depends upon the high temperature coefficient of resistance of a special alloy which is used as the heating element. Sheath is made of nickel silver.

1A384	.....	\$16.85	0.75	1	10	1 1/4	13 1/2	2	3	60451	\$1.80	Single-Heat
1A385	.....	24.55	1.5	3	10	1 1/4	13 1/2	3	3 1/2	296569	4.50	3-Heat
.....	1A385G2	24.55	1.5	1	10	1 1/4	13 1/2	3	3 1/2	60451	1.80	Single-Heat
1A386	1A386G2	29.00	2.5	3	14	2	18	3	6	1794	7.20	3-Heat
1A387	1A387G2	33.00	3.5	3	18	2	22	3	7	1794	7.20	3-Heat
1A388	.....	38.00	4.5	3	22	2	26	3	8	.....	.....	.....
.....	1A388G2	38.00	4.5	3	22	2	26	3	8	1794	7.20	3-Heat

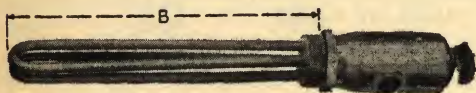
## For Noncirculating Oils

For heating liquids such as oil and paraffin. A low watts density is used because of possible damage to the liquids and to the heaters through carbonization, etc. Steel is used

as the sheath and header material. Equipped with an efficient seal at the terminal to protect the G-E Calrod heating element against accidental contact with oil.

33X825	33X826	\$18.90	1.0	3	10	1 1/4	13 1/2	3	5	278608	\$3.00	3-Heat
32X820	†32X821	22.30	1.5	3	14	2	18	3	6	278608	3.00	3-Heat
32X822	†32X823	24.65	2.0	3	18	2	22	3	7	296569	4.50	3-Heat
15X838	†15X839	29.00	2.5	3	22	2	26	3	8	296569	4.50	3-Heat
32X824	.....	32.00	3.0	3	26	2	30	3	10	296569	4.50	3-Heat
.....	†32X825	32.00	3.0	3	26	2	30	3	10	1794	7.20	3-Heat
32X826	†32X827	39.00	4.0	3	36	2	40	3	12	1794	7.20	3-Heat
32X828	†32X829	45.00	5.0	3	42	2	46	3	14	1794	7.20	3-Heat

## Water-Immersion Heaters with Switch in Cap



No.		Each	Kw.	No. Heats	"B," In.	Std. Pipe Thrd. Collar, In.	Lgth. Overall, In.	Approx. Ship. Wt. Lb.
115 Volts	230 Volts							
1A389	1A389G2	\$29.00	3.0	3	14	2	20 1/2	8
1A390	1A390G2	32.00	4.0	3	18	2	24 1/2	9
1A391	1A391G2	35.00	5.0	3	22	2	28 1/2	10
.....	1A392	44.00	7.5	3	30	2	36 1/2	13

\*This heater differs from the other heaters in that it is installed from within the container instead of being screwed in from the outside. Therefore, it is provided with a shoulder on the header and with the necessary gasket and tightening nut.

†This heater, for operation on a 230-volt circuit, can be operated single-heat on a 440-volt circuit by running the two elements in series. Switches listed should not be used for circuits of over 250 volts.

‡Straight thread, not pipe thread.

§Diameter is standard pipe thread of size given.



## G-E Heating Cable



A flexible, lead-covered cable which can be bent and formed readily to fit almost any low-temperature heating job.

### Applications

Used for melting ice from eaves and downspouts, protecting sprinkler systems, protecting pipes and valves from freezing, warming valves and pipe lines that carry viscous material, floor heating, freeing sidewalks and other surfaces from ice, kennel floors, and soil heating.

Can also be immersed in solutions, suspended on walls or in air, laid on surfaces, etc.

### Ready Assemblies Fit Most Applications

Many requirements can be met with a heating cable of 400 watts on 110 volts, or a cable of 800 watts on 220 volts. For such jobs, the cable assemblies shown will be very convenient. They are ready to be plugged in. No wiring, no interconnections; just a simple outlet is required.

In many cases, a thermostat assembly for providing automatic temperature control is desirable. It is plugged into the power circuit, and the cable assemblies are plugged into the duplex receptacle on the thermostat assembly—even three or four cable assemblies can be plugged in by using triple taps.

Quantity (Inclusive)	*Thermostat Assembly, No. 4984571G2 Each	†Cable Assembly, No. 4915978G1 Each	†Cable Assembly, No. 4915978G2 Each
1-9	\$15.85	\$7.50	\$13.50
10-39	15.15	7.25	13.10
40-99	14.30	7.10	12.80
100 or More	13.80	6.95	12.50

\*No. 4984571G2 thermostat assembly consists of No. 4980281G18 thermostat, adjustable range 30 to 120°F., duplex receptacle, and 3-foot all-rubber cord, with plug. Approximate shipping weight, 5 pounds. Capacity, 15 amperes up to 250 volts, a.c. only.

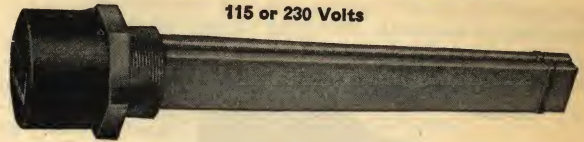
†No. 4915978G1 cable assembly consists of 60 feet of heating cable, with the two ends assembled into one rubber plug. Approximate shipping weight, 11 pounds. Rating, 400 watts, 110 volts.

†No. 4915978G2 cable assembly consists of 120 feet of heating cable, with two ends assembled into one rubber plug. Approximate shipping weight, 22 pounds. Rating, 800 watts, 220 volts.

G-E heating cable is also available by the foot. Use in lengths of at least 60 feet on 115 volts, 400 watts; 120 feet on 220 volts, 800 watts. Price in lengths of 1-599 feet, 9 cents per foot.

## Chromalox Immersion Heaters

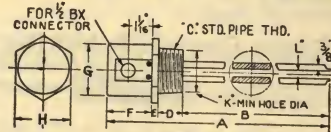
115 or 230 Volts



Provided with standard pipe-threaded screw plug for easy mounting through walls of tanks, in pipes, etc. Heated section must be completely immersed to be heated.

**Type M.** For heating water and solutions that readily absorb heat. Copper sheath, bronze screw plug and brazed joints are standard. For Oakite solution cleaning tanks, where copper is attacked, specify steel sheath, iron screw plug with welded joints at same price.

**Type MO.** For heating mineral oils, paraffin, etc. Has steel sheath, iron screw plug and welded joints as standard.



Type	TYPE M or MO									
	DIMENSIONS, INCHES									
	C	D	E	F	G	H	K	L		
M or MO	1 1/4	3/4	3/8	2	2 1/2	2 3/8	1 3/8	3/16		
M or MO	2	1	1/2	2	2 7/8	3	2	7/16		
Type M										
No.	Each	Watts	Heats	Size Pipe Thrd. In.	Overall Length Inches				Heated or Blade Lgth. In.	
M-150	\$9.50	500	1	1 1/4	11 1/8				7	
M-110-3	14.80	1000	3	1 1/4	11 1/8				7	
M-220-3	17.20	2000	3	2	14 3/8				9 7/8	
M-230-3	20.25	3000	3	2	18 5/8				14 1/8	
Type MO										
MO-110	\$17.20	1000	3	1 1/4	13 1/8				9	
MO-220	23.30	2000	3	2	21 5/8				17 1/8	
MO-230	29.10	3000	3	2	28 3/8				24 1/8	

\*Refers to standard pipe thread.

## Ideal Heavy Duty Etchers

For Etching Large Parts



For marking permanent identifications on smooth castings, big parts, and other large smooth-surfaced metal objects.

Etching heats vary in 100-watt steps from 300 to 1100 watts. Top heat is 1300 watts. Prominence of marking is governed by heat used and speed at which point travels over metal.

Furnished with 10-tap switch, on-off switch indicating lamp, large ground clamp, 6-ounce heat-resisting etching tool and 4x7-inch work plate.

Weight, 30 pounds.

No. 11-017, 115 Volts, 50-60 Cycles.....	each	\$66.00
No. 11-018, 230 Volts, 50-60 Cycles.....	each	74.50
No. 11-019, 115 Volts, 25 Cycles.....	each	78.00
No. 11-020, 230 Volts, 25 Cycles.....	each	80.00
No. L-887, Extra Etcher Points.....	each	2.75



### Ideal Portable Electric Markers

A powerful small marking tool that permanently cuts in any kind of material, including alloys, brass, tile, wood, glass, etc. Shaped to fit the hand, it can be held and used to write almost as easily as a pencil. Has the balance of a fine writing pen. Complete marker only 6½ in. long, 1½ in. wide, and 1¼ in. thick. Has a steel point furnished for ordinary uses. For materials up to 64 Rockwell scale C, a diamond point is recommended. Furnished with a 5-foot cord. Case of marker is black plastic. Packed in cardboard box. Weight complete, 10 ounces.



No. 14-022, Model U with Steel Point, 115 V. 60 Cy.. \$11.65  
No. L-2180, Hardened Steel Point..... 2.94  
No. L-2647, Diamond Point..... 6.88

### No. 225 Drake Electric Soldering Irons



Recommended for light radio work. Nichrome wire wound on amber mica. An 80-watt iron with ¾-inch tip, complete with 6-foot heater cord and rubber plug. Nickel plated.

No. 225, Weight, 1½ Pounds..... complete \$4.05  
Element..... each 2.13  
Tip..... each .53

### No. 450 Drake Electric Soldering Irons

80 to 140 Watts—110 Volts—A.C. or D.C.



For fine instruments, telephone and other light soldering.  
No. 450, Complete with 6-Foot Cord and Stand. each \$5.50  
No. 450, Element..... each 3.20  
Plug Tip, ¾-Inch..... each .53  
Shipping Weight, Complete..... pounds 2

### No. 600 Drake Electric Soldering Irons

100 Watts—120 Volts—A.C. or D.C.



For switchboards, radio and other light manufacturing uses. Plug tip, ¾ inch with 6-foot cord and stand.  
No. 600, Shipping Weight, 2 Pounds..... each \$6.50  
Element..... each 3.73  
Tip..... each .53

### No. 800 Drake Electric Soldering Irons

200 Watts—120 Volts—A.C. or D.C.



For art glass, medium tin work and general factory soldering. Plug tip, ¾ inch. With 6-foot cord and stand.  
No. 800, Shipping Weight, 3 Pounds..... each \$9.00  
Element..... each 6.39  
Tip..... each .85

### Drake Electric Soldering Irons



Finished in gunmetal. With 6-foot heater cord and rubber plug.

Shipping weight, 2 pounds.

#### No. 700—60-Watt Iron with ⅝-Inch Copper Tip

For light soldering, high quality Nichrome wire used in porcelain element.

No. 700..... each \$1.96

#### No. 701—100-Watt Iron with ⅞-Inch Copper Tip

For light medium work. High quality Nichrome wire used in porcelain element.

No. 701..... each \$2.56

#### No. 703—150-Watt Iron with 1½-Inch Copper Tip

For garages, machine shops, etc. High quality Nichrome wire wound on amber mica.

No. 703..... each \$6.00

### No. 1100 Drake Electric Soldering Irons

300 Watts—110 Volts—A.C. or D.C.



For automobile radiators and small branding irons. Plug tip, ⅞ inch. With 6-foot cord and stand.

No. 1100, Shipping Weight, 4 Pounds..... each \$12.00  
Element with Housing..... each 8.52  
Tip..... each 1.07

### No. 1200 Drake Electric Soldering Irons

300 Watts—110 Volts—A.C. or D.C.



For tin-smiths, automobile radiators and small branding irons. Screw tip, 1¼ inches. With 6-foot cord and stand. Shipping weight, 4 pounds.

No. 1200..... each \$13.00  
Heating Element..... each 9.59  
Screw Tip..... each 2.66

### No. 1400 Drake Electric Soldering Irons

500 Watts—110 Volts—A.C. or D.C.



For heavy soldering on tanks, roofs, large branding irons, etc. Screw tip, 1½ inches. With 6-foot cord and stand.

No. 1400, Shipping Weight, 4 Pounds..... each \$15.00  
Element..... each 10.65  
Tip..... each 3.20

### Extra Tips for American Beauty Electric Soldering Irons



3738 for 3138 Iron  
3758 for 3158 Iron  
3778 for 3178 Iron  
3798 for 3198 Iron

No.	3738	3758	3778	3798
Each.....	\$1.50	1.10	1.90	2.20
Weight.....	ounces 2½	7	16	23

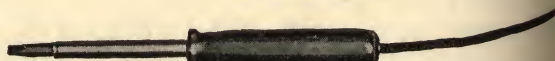
### Heating Elements for American Beauty Electric Soldering Irons



No.	9273	9275	9277	9279
Each.....	\$3.60	4.80	6.50	8.55
For Iron No.....	3138	3158	3178	3198
Weight.....	ounces 4	8	12	18

### No. S-76 American Beauty Electric Soldering Irons

For 110-120 Volts



For small, light work; consumes 50 watts. Specially treated copper core with aluminum head, to which tip screws with taper fit.

For all standard voltages and for 12 and 32 volts.

Diameter tip ⅞-inch; length, 11½ inches.

Net weight, 6 ounces.

No. S-76..... each \$5.00  
No. 9276 Element..... each 3.00  
No. 3734, Tip..... each .40



## American Beauty Electric Soldering Irons



No. 3138



No. 3158

All irons are made with a special baffle plate at the shank to prevent free conduction of heat to handles.

Copper tips are treated with special nickel coating to prevent oxidation and corrosion.

The heating element core is made of solid steel rod. The outer surface is heat treated to prevent or reduce to the minimum oxidation and corrosion.

Stands are supplied with all irons.

Pyramid type tips are regularly supplied with Nos. 3138 and 3158, chisel type with Nos. 3178 and 3198. All numbers can be supplied with either type tip, when so specified. A special long drawn semi-chisel shape tip can be furnished for No. 3138.

**No. 3138.** Primarily adapted for light work; radio, telephone, telegraph, ignition work, etc.

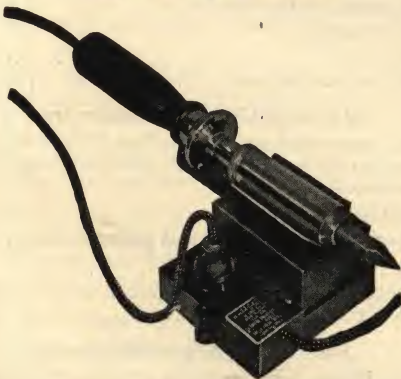
**No. 3158.** For the same purposes as No. 3138 iron and work of a somewhat heavier nature; for electric starter and ignition manufacturers, repair work, etc.

**No. 3178.** For use on heavy work; connections, light commutators, and for service and production work.

**No. 3198.** For shop, service, production work, etc. Supplies a large volume of heat at high temperature.

No.	3138	3158	3178	3198
Each	\$8.00	9.60	12.90	16.80
Diameter Tip.....inches	$\frac{3}{8}$	$\frac{5}{8}$	$\frac{7}{8}$	$1\frac{1}{8}$
Watts.....	100	200	300	550
Length Overall.....inches	$12\frac{7}{8}$	$13\frac{3}{8}$	$14\frac{3}{8}$	15
Diameter Overall.....inches	$\frac{7}{8}$	$1\frac{1}{4}$	$1\frac{9}{16}$	$1\frac{3}{4}$
Net Weight.....pounds	1	$1\frac{1}{4}$	$2\frac{5}{8}$	$3\frac{3}{4}$
Shipping Weight.....pounds	2	3	4	$5\frac{3}{4}$

## No. 475 American Beauty Temperature Regulating Stand



A thermostatically controlled device for regulating the temperature of electric soldering irons. The soldering iron, when placed on this stand, is maintained at working temperature ready for instant use.

Through an adjustment on bottom of stand, thermostat may be set for the maintenance of any desired temperature.

Body of stand is of molded plastic. Soldering iron holder is of copper.

For use with electric soldering irons up to 660 watts consumption and for circuits up to 240 volts, a.c. only.

Stand is provided with cord and attachment plug cap for connection to current and with a receptacle for connection of the electric soldering iron.

Packed 1 in a paper box.

Net weight, 27 ounces.

**No. 475.....each \$5.50**

## G-E Calrod Soldering Irons

For industrial use to provide the following advantages:  
High Speed Soldering Long Life and Low Maintenance  
Uniform Performance Convenient Tip Renewal  
All furnished with 6-foot rubber covered cord and plug;  
also supporting stand (except extra-heavy duty iron.)

### No. 6A161—75 Watts, 115 Volts



For light, intermittent soldering on switchboards, wiring devices, ignition systems, meters, and instruments.

Diam. Tip In.	Calorized Tip Each	Ironclad Tip Each	Wt. Oz. Without Cord	Wt. Oz. With Cord	Shipping Wt. Oz.
$\frac{3}{8}$	\$9.55	\$10.20	15	20	26
$\frac{1}{2}$	9.55	10.20	15	20	26
$\frac{1}{2}$	10.10	10.90	15	20	26

### No. 6A162—100 Watts, 115 Volts



For light, high-speed soldering on telephones, switchboards, appliances, and meters. For service and repair men.

Diam. Tip In.	Calorized Tip Each	Ironclad Tip Each	Wt. Oz. Without Cord	Wt. Oz. With Cord	Shipping Wt. Oz.
$\frac{3}{8}$	\$9.55	\$10.20	15	20	26
$\frac{1}{2}$	9.55	10.20	15	20	26
$\frac{1}{2}$	10.10	10.90	15	20	26

### No. 6A200—100 Watts, 115 Volts



For light, high-speed soldering on radios and switchboards; medium, intermittent soldering on tinware and wiring. Excellent for shop and farm.

Diam. Tip In.	Calorized Tip Each	Ironclad Tip Each	Wt. Oz. Without Cord	Wt. Oz. With Cord	Shipping Wt. Oz.
$\frac{3}{4}$	\$10.80	\$12.20	16	21	27

### No. 6A201—200 Watts, 115 Volts



For medium, high-speed soldering of automobile and airplane assembly, electric equipment, light tanks, and containers of copper and steel. For manufacturing plants.

Diam. Tip In.	Calorized Tip Each	Ironclad Tip Each	Wt. Oz. Without Cord	Wt. Oz. With Cord	Shipping Wt. Oz.
1	\$13.55	\$15.10	24	29	34

### No. 6A202—300 Watts, 115 Volts



For heavy work on light commutators, large diameter pipe, medium-gage copper or steel tank and container material, roofing, and heavy tinware.

Diam. Tip In.	Calorized Tip Each	Ironclad Tip Each	Wt. Oz. Without Cord	Wt. Oz. With Cord	Shipping Wt. Oz.
$1\frac{1}{4}$	\$16.40	\$17.95	37	42	48

### For Extra-Heavy Duty—650 and 1250 Watts, 115 or 230 Volts



For heavy continuous soldering. Equipped with G-E Calrod unit which is cast directly into copper heating head. Tip is made of Calorized copper, chisel type, and is brazed to copper heating head. To renew tip, unbrazed it from heating head and braze (silver-solder) on a new one.

Diam. Tip In.	115 Volts No.	Each	230 Volts No.	Each	Watts	Wt. Lb.
$1\frac{5}{8}$	6A318	\$30.00	6A318G2	\$30.00	650	6
2	6A319	54.00	6A318G2	54.00	1250	$8\frac{1}{2}$

## Ironclad Renewal Tips



No corroding, no filing.

Lower upkeep cost, less maintenance, and longer life. Illustration shows the effect of solder (250°C. for 363.5 hours) on plain copper (bottom) and Ironclad copper (top) soldering tips.



\*Long tip.

Available for 230 volts at no extra cost.



## Ideal Thermo-Grip Soldering Tools

## 1000 Watt Power Units



The Ideal Thermo-Grip is adaptable to practically all soldering jobs—closely grouped parts, difficult positions, cramped spaces, inflammable surroundings. Does all types of soldering quicker, safer and easier. Heats instantly and concentrates heat only on part to be soldered. Eliminates fire hazard and danger of melting nearby joints or burning other parts. Does not oxidize the tin in solder, weaken the solder or discolor the finished job. Reaches soldering temperature in less than one minute. Handy thumb-switch permits close heat control for better soldering. All parts fully insulated. Current is reduced to harmless low voltage. Operates on resistance heating principle. Can be used for long periods of time without overheating. A Thermo-Grip consists of combination power unit and carrying case, secondary lead assembly, and one or more of the attachments described below:

## 1000 Watt Power Units

No. 12-062, 115 Volts, 50-60 Cycles.....	each	\$38.60
No. 12-063, 115 Volts, 25 Cycles.....	each	49.95
No. 12-064, 230 Volts, 50-60 Cycles.....	each	42.50
No. 12-066, Secondary Lead Assembly.....	each	5.95

## Attachments for 1000 Watt Power Units

## No. 12-067 Plier Attachment.

(Illustrated with Power Unit)

Used for most soldering applications where work may be held in jaws and heated, i.e., removing or applying solder lugs up to 450 amperes, sweating and unsweating copper tube and fittings up to 1½ inches in diameter, soldering joints, etc.

No. 12-067.....	each	\$9.95
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## No. 12-069 Pencil Attachment.



For spot soldering—where ground clamp may be attached to a metal part of work to complete secondary circuit, i.e., spot soldering, soldering sheet metal, wire joints, commutator risers, etc. Includes "C" type ground clamp.

No. 12-069.....	each	\$10.95
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## No. 12-068 Fork Attachment.



For soldering in restricted places—where straight tools cannot be used, i.e., soldering lugs, terminals or connections in switch boxes, switchboards, inside machines, etc. The electrode holders can be turned and locked in any position.

No. 12-068.....	each	\$7.95
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**When ordering**, please specify power unit, secondary lead assembly and one or more of the attachments listed.

## Midget Size Power Units



Has quick-make-and-break connectors for easy interchangeability of attachments. With Hi-Lo heat switch—Hi heat, 300 watts; Lo heat, 225 watts. Furnished with 5-foot primary cord, and 1-foot secondary leads.

Weight, 9 pounds.

No. 12-019, 115 Volts, 50-60 Cycles.....	each	\$23.50
No. 12-021, 230 Volts, 50-60 Cycles.....	each	29.00
No. 12-020, 115 Volts, 25 Cycles.....	each	35.00

## Attachments for Midget Power Units

## No. 12-023 Plier Attachments

For small work such as small terminals and lugs up to 150-ampere size, threadless copper tubing or fittings up to ¼ inch in diameter.

Rating, 300 watts.

Furnished with 5-foot leads.

Weight, 2 pounds.

No. 12-023.....	each	\$15.75
No. L-505, Extra Carbons.....	per set	.55

## No. 12-024 Pencil Attachments

For light seam and spot soldering; ¼-inch diameter carbon electrode may be fixed either in line with or at 45 degrees to the handle.

Rating, 180 watts.

Furnished with 5-foot lead and ground clamp.

Weight, 1½ pounds.

No. 12-024.....	each	\$8.00
No. L-583, Extra Carbons.....	each	.20

## No. 12-025 Fork Attachments

Only 8½ inches long, including carbons. For soldering in tight places, etc., where bi-carbon end moves between parts and only heats metal where it is held and lightly pressed.

Rating, 200 watts.

Furnished with 5-foot leads.

Weight, 1½ pounds.

No. 12-025.....	each	\$10.50
No. L-619, Extra Carbons.....	per set	.55

## No. 12-043 Etcher Attachments

Electrically marks on iron, steel and their alloys. Makes a permanent mark on tools, gages, dies, etc.

Rating, 320 watts.

Furnished with workplate, carbon resistor and etcher tool with 5-foot leads.

Weight, 3¾ pounds.

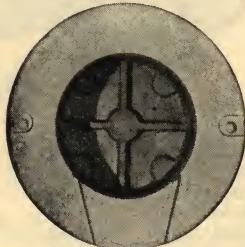
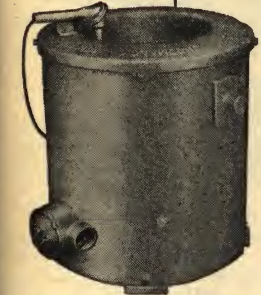
No. 12-043.....	each	\$16.50
No. R-247, Extra Points.....	each	1.75



**Chromalox Electric Melting Pots****For Soft Metals**

115, 230, and 460 Volts

900°F. Maximum Operating Temperature

Nos. P-15, P-25 and P-50  
Showing Flexible Conduit  
and 3-Heat SwitchTop View of No. P-50 Showing  
Large Capacity with No  
Interior ObstructionsNos. P-100 to P-750 Inclusive,  
with Lifting Lugs. With  
Model M Thermostat for  
Automatic Control

For melting solder, lead, babbitt, tin, type metal; but not zinc.

Heated by Chromalox ring units clamped to the bottom of the pot. The larger pots also have strip heaters clamped to the sides. Interior of pots left free for maximum capacity and low radiation losses.

Nos. P-15 to P-50 inclusive for manual control have the 3-heat switch mounted on conduit box, connected to pot by 3 feet of flexible conduit. The No. P-8 pot is single heat only, and has 3 feet of flexible conduit with armored attachment plug.

Nos. P-100 to P-750 inclusive for automatic temperature control are wired for single-heat operation, and have terminal box for line connections mounted on the side. Thermostat Model M or Z and correct magnetic contactor should be used. When thermostat is ordered with melting pot, a steel protecting tube for the thermostat bulb is furnished.

Nos. P-100 to P-750 pots inclusive, can be furnished for 3 phase 230 volt operation and should always be used with automatic temperature control.

All pots can be furnished for single-phase operation,

No.	For Single-Heat Operation Each	With 3-Heat Control Switch Each	CAPACITY, POUNDS				Ship. Wt. Lb.
			50-50 Solder	Lead	15-35 Babbitt	Tin	
*P-8	\$14.40	.....	8	10	9	6	15
P-15	23.40	\$26.15	15	18	17	12	20
P-25	30.00	35.50	29	36	34	23	26
P-50	54.00	60.25	52	64	60	41	54
P-100	102.00	.....	114	139	131	89	118
P-350	162.00	.....	368	450	420	290	280
P-750	258.00	.....	750	920	860	600	390

No.	Wattage	Voltage	DIMENSIONS, INCHES			
			Inside Diam.	Depth	Outside Diam.	Height
*P-8	250	115 Only	2½	2½	5	6
P-15	500	115, 230	4	4	7	8½
P-25	750	115, 230	5¼	4¼	8	11
P-50	1380	115, 230	6¼	5¼	11	11
P-100	3000	115, 230, 460	8	7½	15	15
P-350	5000	115, 230, 460	10⅝	14	18½	20¼
P-750	9000	230, 460	14	20	23	26

\*Furnished single-heat with flexible conduit and armored plug.

**G-E Metal-Melting Pots****For Soft Metals**

Maximum Operating Temperature, 950°F.

Nos. 2881146G2,  
2881146G3,  
2881146G4, or  
2881146G5Nos. 2666404G1, 2666404G2,  
2666407G1, or 2666407G2

For melting lead, babbitt, tin, solder, type metal, and similar alloys or metals, except spelter or zinc.

Each pot consists of a sheet-steel cylindrical casing in which is supported a cast-iron crucible. Space between casing and crucible is heat-insulated.

G-E Calrod cast-in immersion-type heating units are suspended from rim of pot and extend directly into metal to be melted.

No.	Each	APPROX. CAP., LB.—						Approx. Ship. Wt. Lb.
		50/ 50	Solder	Lead	Babbitt	Tin	WATTAGE— High Med. Low	
2881146G3	\$41.00	230	28	35	†	25	750	50
2881146G2	41.00	115	23	35	†	25	750	50
2881146G5	41.00	230	28	35	33	25	1000	50
2881146G4	41.00	115	28	35	33	25	1000	50
2666404G1	120.00	230	100	135	125	90	2500 1500 1000	130
2666404G2	120.00	115	100	135	125	90	2500 1500 1000	130
2666407G1	172.00	230	330	425	390	270	5000 3000 2000	250
2666407G2	172.00	115	330	425	390	270	5000 3000 2000	250

Single Heating Units

No.	Each	DIMENSIONS, IN.—				No.	Each	Approx. Rat- ing Watts	Ship. Wt. Lb.
		INSIDE Diam.	Depth.	OUTSIDE Diam.	Depth.				
2881146G3		6	4	9	10	3A227G4	\$25.30	750	12
2881146G2		6	4	9	10	3A227G3	25.30	750	12
2881146G5		6	4	9	10	3A228G4	28.00	1000	12
2881146G4		6	4	9	10	3A228G3	28.00	1000	12
2666404G1		8	6	14	14	3A229G4	28.00	1000	14
						3A230G4	32.00	1500	14
2666404G2		8	6	14	14	3A229G3	28.00	1000	14
						3A230G3	32.00	1500	14
2666407G1		12	9	18¾	20½	3A231G4	35.00	2000	30
						3A232G4	43.00	3000	30
2666407G2		12	9	18¾	20½	3A231G3	35.00	2000	30
						3A232G3	43.00	3000	30

**Small Portable Pots for Solder and Lead**

Maximum Operating Temperature, 750°F.



Similar in construction to the pots listed above.

Heater is of G-E Calrod construction using heavy-wall steel tubing, and provided with a terminal cup.

Equipped with bail and 6-foot cord with suitable attaching plug, affording ready portability.

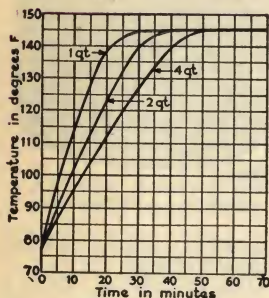
Approximate capacity: 50/50 solder, 12 lb.; lead, 16 lb. Watts, 550.

Inside dimensions: diameter, 4¼ inches; depth, 3¾ inches. Outside dimensions: diameter, 9 inches; depth, 6½ inches.

No.	Each	Volts	Approx. Ship. Wt. Lb.	No.	Each	Approx. Ship. Wt. Lb.
3887185G2	\$23.45	115	18	48X260	\$10.10	3
3887185G3	23.45	230	18	48X261	10.10	3



## G-E Automatic Gluepots



Has removable copper container for holding glue, heated copper jacket in contact with glue container, and steel protecting casing.

Heat insulation is placed between heated jacket and outer casing. Heating unit surrounds jacket and is completely mica-insulated.

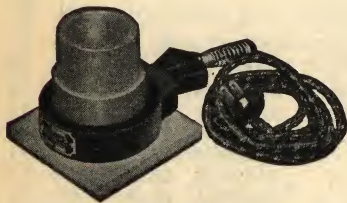
Each pot is equipped with contact plug, 8 feet of rubber-covered cord, and socket attaching plug.

A sensitive snap-acting thermostat is mounted on jacket and maintains a glue temperature at 140-150°F.

No.		Each	Cap. Qt.	Watts	OUTSIDE DIMEN., IN.		Approx. Ship. Wt. Lb.
115 V. A.C.	230 V. A.C.				Ht.	Diam. Casing	
6A126G4	6A126G5	\$22.75	1	150	5 1/4	7 1/4	7
6A111G4	6A111G5	25.30	2	250	7 1/4	7 1/4	8
6A139G4	6A139G5	30.00	4	350	9	8 3/4	10

## Vulcan Electric Solder Pots

## High Speed and Standard



No. 1600

For tinning parts, leads, and fast dip soldering. Rate of speed of pot soldering depends on correct size of pot, size of parts, and melting point of the solder used.

Replaceable element. Always specify voltage wanted when ordering.

No. 1600 is cast in one piece and attached to a square base of heat resisting material. Flat type element.

No. 1606 is cast in two pieces well insulated from each other against heat loss. Disc type element.

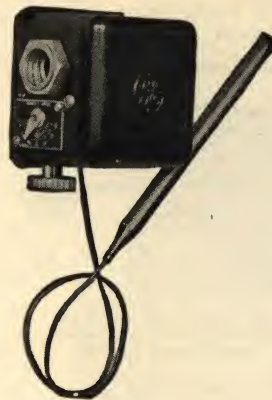
No. 1701 has cast iron pot securely assembled in an outer casing of heavy sheet steel. Disc type element.

No. 1703 comprises a replaceable unit and cast iron pot.

Nos. 1700, 1702, 1704, 1706, and 1716 have heavy cast iron pots with outer casing of heavy sheet steel. Cartridge type elements.

No.	Each	WATTS			DIMENSIONS, INCHES				Approx. Solder Cap. Lb.
		High	Med.	Low	INSIDE Diam.	INSIDE Depth	OUTSIDE Diam.	OUTSIDE Ht.	
1600	\$6.05	150	Single	Heat	1 1/16	1 3/8	3 1/4	3 5/16	7/8
1606	6.70	350	Single	Heat	3 3/8	1 1/2	5	3 1/2	3
1700	19.00	200	120	80	2	1 1/2	5	4 1/2	1 1/4
1701	10.75	250	Single	Heat	3	1 1/2	5	4 1/2	4
1702	19.00	250	150	100	3	2 1/2	5	4 1/2	5
1703	10.75	200	Single	Heat	1 1/2	1 3/8	4 3/16	4 3/16	7/8
1704	25.30	350	200	150	3 3/4	3	6	5 1/2	10
1706	25.30	750	375	187	5	3 1/2	7 1/2	6 1/2	20
1716	69.60	2000	Single	Heat	8	4	12	6 1/2	45

## G-E Industrial Heating Thermostats



For nearly any application of electric heaters and devices. Consists of a switch mechanism actuated by a bulb-and-bellows system. Current capacity, 25 amps., a.c., non-inductive, 115 or 230 volts. For higher currents and voltages, use G-E contactors.

Has capillary-tube length of 25 inches. Similar devices with capillary-tube lengths of 8, 60, or 120 inches are available at the same prices.

No.	Each	TEMP. RANGE OR POSSIBLE SETTING IN DEG. F.		BULB SIZE, INCHES	Length	Diam.
		Min.	Max.			
4980281G111	\$16.50	65	135	7 1/8	1 1/2	
4980281G113	16.50	120	190			
4980281G117	16.50	170	240			
4980281G121	16.50	220	290			
4980281G125	16.50	270	370			
4980281G129	16.50	350	450			
4980281G133	19.25	430	530	6 5/8	3/16	
4980281G137	19.25	600	600			
4980281G49	16.50	30	120			
4980281G92	16.50	70	175			
4980281G96	16.50	145	250			
4980281G100	16.50	225	330			
4980281G104	16.50	320	470	4 1/2	3/16	
4980281G108	19.25	450	600			
4980281G4	16.50	85	245			
4980281G2	16.50	145	305	3 5/8	3/8	
4980281G83	16.50	250	480			
4980281G87	19.25	370	600			
4980281G158	23.40	500	600	4 3/16	5/8	
4980281G160	23.40	575	675	3 5/8	3/8	
4980281G162	23.40	650	750			
4980281G156	23.40	500	750	3	1/2	

## Vulcan Electric Glue Pots

## Water Jacket Type with Thermostat Control



For 110-120 or 220-230 volts. Holds glue to a maximum temperature of 150°F. The use of a liquid heating medium permits controlled transfer of heat to glue without danger of localized overheating.

Heavy cast aluminum with attached base. Inside pot is aluminum lined. With 6-foot Underwriters' listed heater cord and plug.

Specify voltage and if for a.c. or d.c.

No. ....	1879	1810	1811	1812
Each .....	\$10.90	13.80	21.25	34.80
Capacity .....	1 Pt.	1 Qt.	2 Qt.	4 Qt.
Outside Diameter .....	6 1/4	7	8 1/2	8 3/4
Outside Height .....	6 1/2	7 1/4	8 1/2	11 1/8
No. Min. Req. to Heat from 70° to 145°F .....	45	45	45	50
Watts .....	200	250	450	700
Shipping Weight .....	8	10	15	20



## Model GA Wasp Arc Welders Capacity, 150-200 Amperes—Direct Current



The 150-ampere welder is adapted to light work and thin materials and is very compact, occupying only 2½ square feet of floor space.

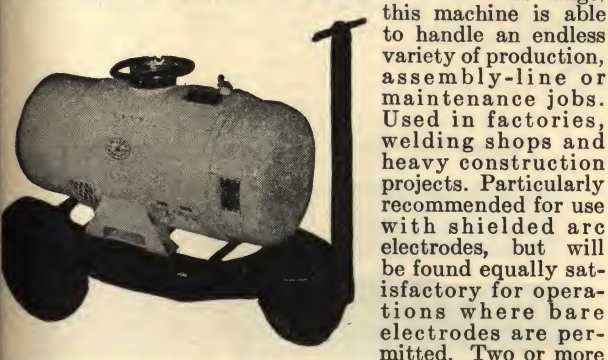
The 200-ampere welder meets the demand for a wide range machine that can handle light work and heavy work such as large thick plates and heavy castings.

Dual control is used. A selector switch provides full range control with three steps on Model GA-150 and four steps on Model GA-200. Fine adjustment is by calibrated field rheostat. Polarity is reversed by switching welding cable connections. Welding ranges: Model GA-150, 20-200 amperes at 25 volts; Model GA-200, 25-250 amperes at 30 volts. Both models are limited to operating not more than 60 per cent of time, at maximum output.

## Hornet Single Operator Motor Generator Arc Welders

Capacity, 200, 300 or 400 Amperes—20 to 40 Volts—  
Direct Current—1800 RPM.

A two-bearing unit, with the motor rotor and generator armature mounted on the same shaft. Within its range,



are welders can be operated in parallel without use of conventional equalizing circuit.

Two controls accurately adjust and indicate all current settings. Two-range switch has only two positions, a low point for light welding and a high position for medium and heavy jobs. As both ranges overlap, there are no blind spots. Exact welding current for any job can be infinitely adjusted by a glove grip handwheel with a calibrated dial, graduated in amperes. A rotary pointer within wheel indicates each current value as selected by operator. Meters are not necessary. Polarity can be changed by a handy snap switch. Accidental reversal even under heavy loads is impossible due to a patented electric circuit feature. Adequate ventilation is furnished by propeller blades attached to revolving shaft, which draws air in at both ends of machine and expels it downward at center.

## Wilson Busybee Portable Arc Welders

Capacity, 130 or 180 Amperes,  
230 Volts, 60 Cycles,  
Single-Phase



Used in garages and repair shops as a light capacity welder for intermittent operation on rural power supply lines.

Available in 130 and 180-ampere sizes. The 130-ampere size uses electrodes up to ⅜-inch diameter and the 180-ampere size uses electrodes up to ½-inch diameter.

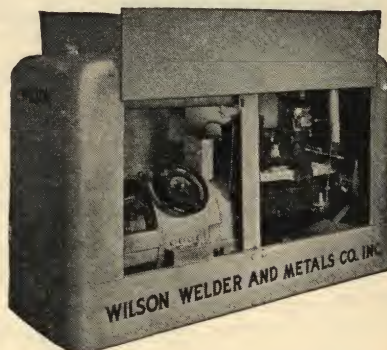
Furnished with input lead; ground clamp; electrode holder; face shield; chipping hammer; scratch brush; one pair of leather gloves; 5 pounds of assorted, shielded, arc mild steel type electrodes; one easy-arc starter; and book of instructions. Can be furnished with capacitors.

Finished in blue enamel.

No.	130-Ampere		180-Ampere	
	BB11A1	BB11A2	BB12A1	BB12A2
Each, Complete:				
Without Power Factor Correction.....	\$162.00		\$182.00	
With Power Factor Correction.....		\$173.00		\$198.00
Dimensions:				
Length.....in.	17	17	17	17
Width.....in.	12	12	12	12
Height.....in.	20½	20½	22½	22½
Weight.....pounds	115	115	150	150

## Yellow Jacket Engine Driven Arc Welders

Capacity, 200, 300 or 400 Amperes—20 to 40 Volts—  
Direct Current—1800 RPM.



A sturdy, dependable gas engine driven welding machine. The machine is adaptable to all types of welding, from sheets to heavy castings. Simplified control obtained through a large, easily propelled handwheel which permits infinite adjustments in either high or low range. Current is indicated on an accurately calibrated, easily read dial. In addition to convenient current control, the generator embodies variable stabilizer which is automatically regulated by the patented adjustable upper pole. No external resistance or brush shifting devices are used. A convenient switch is provided for shifting polarity to suit different types of electrodes. The machine is equipped with all necessary engine accessories such as self-starter, storage battery, governor, battery charging generator, 22-gallon gasoline tank, and large capacity radiator. In addition, a vacuum electric type idling device is furnished which automatically reduces engine speed when welding stops, and increases to full speed when the arc is struck.



**No. 323A Duralite Coverglas Goggles**

Protects against particles striking from above, below, in front, or either side. Fits over most any type or style of glasses or spectacles. Anatomically shaped eyecups made of lightweight material which does not conduct heat or electricity. Is moisture-proof, strong, and durable. Permanent adjustment of bridge can be made instantly. One-piece headband is quickly and easily adjusted. Has indirect ventilated side shields, solid lens rings, and is equipped with filter lenses to protect against dazzling glare and injurious light rays. Troy weight, 68 pennyweight.

No. 323A, with Noviweld and Cover Lenses..... each .....  
 With Noviweld-Didymium and Cover Lenses... each .....

**No. 404A Duraweld Goggles**

Eyecups anatomically molded for right and left eye, have larger, more comfortable edges, rounded to fit flush against contour of face. Improved nasal fitting. Side shields provide increased ventilation to keep eyes cool and to help prevent fogging of lenses. Louvers are so designed that it is impossible for stray light rays or sparks to reach eyes. Non-slip, one-piece headband is easily adjusted. Ball-chain bridge, covered with curved plastic tubing which fits snugly over bridge of nose, easily adjusted. Fitted with 50 mm. Noviweld lenses in 3, 4, 5, 6 or 8 shades.

No. 404A, Troy Weight, 63 Pennyweight..... each .....

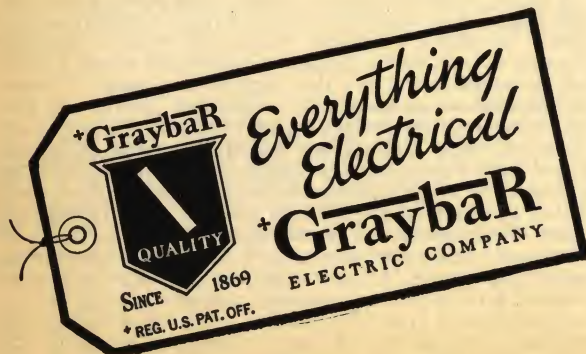
**No. 3080 Flash Goggles**

Especially designed for work in the vicinity of electric welding operations and exposure to the glare of flashes encountered in arc welding. Protects the eyes against impact hazards

striking from in front, from above, below, or from the side. Sturdy, non-corroding, spectacle type frames. Fitted with soft leather side shields. Bridge guards prevent flying particles or stray light getting into the eyes.

Fitted with 50 mm. super armorplate calobar lenses, medium, dark and extra dark shades. When ordering specify shade of calobar.

No. 3080.....per pair .....

**Tweco Redhead Cable Ground Clamps****For Electric Welding****Junior**

For heavy duty electric welding service. Gives a quick, positive and portable ground connection. Increases machine and operator efficiency. Helps to eliminate arc blow; makes holders and cable run cool, last

longer. Cuts current consumption.

Made of special high copper alloy. Insulated spring.

Junior and Senior Models have shunted jaws.

	Midget	Junior	Senior
Capacity.....amperes	125	300	500
Each.....	\$1.25	2.75	3.75
Jaw Opening.....inches	1	1½	2
Capacity, Cable No.....	2	1/0	4/0
Length Overall.....inches	4½	8½	10
Weight.....pounds	½	1½	3

**Twecotong Electrode Holders****No. A-14**

Internal-keyed tubular insulation gives holder jaws maximum protection. Wide opening jaws with ample

spring tension and proper leverage assure easy electrode insertion and positive grip. The interchangeable top, and bottom jaw insulators as well as the body insulators are made from molded-laminated woven glass cloth bakelite. Holder tongs are made of high copper alloy. Deeply recessed insulation holding screws. Ventilated fiber handle. Fully insulated spring.

Cable connection on **No. A-316** and **No. A-14** permits soldering and clamping of cable to holder. **No. A-38** is provided with detachable (pipe thread) solder fitting.

No.....	A-316	A-14	A-38
Each.....	\$4.75	5.00	6.00
Amperage Capacity.....	250	300	500
Electrode Capacity.....inches	¼-¾	¼-¾	¾-1½
Length.....inches	9	11	11½
Handle Diameter.....inches	1¼	1¼	1½
Weight.....ounces	18	22	30

**Tweco Hol-Grip Electrode Holders****For Manual Metallic Arc Welding****No. 300**

Fully insulated, hole type, providing positive 45° (bottom hole) and 90° (side hole) electrode positions.

One hand lever operation permits easy rod insertion and stub removal.

Sturdy one-piece keyed bakelite tip cover.

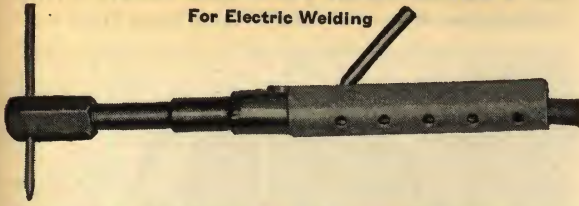
No.....	150	200	300	500
Each.....	\$3.75	4.50	5.00	6.50
Capacity.....amperes	150	200	300	500
*Electrode Size.....inches	¼-¾	¼-¾	¼-¾	¼-¾
Length.....inches	7	9½	10½	12
Weight.....ounces	7½	13½	22	28

\*Sizes are inclusive.



**Tweco Carbon Electrode Holders**

For Electric Welding

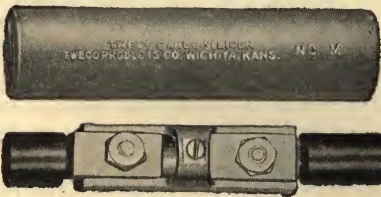


The carbon is held by a spring actuated plunger from the handle of the holder. The hexagon head of the holder, as well as exposed conductor tube and plunger, are made of steel.

**No. 150-C** is designed for light welding; **No. 200-C** for light welding and cutting; **No. 300-C** for medium welding and cutting; and **No. 500-C** handles heavy welding and cutting.

Nos. 150-C and 200-C are furnished with or without quick-attach whip cables and connections. Specify when ordering.

No.	150-C	200-C	300-C	500-C
Each	\$7.50	10.00	12.50	15.00
Amperage Capacity	150	200	300	500
Carbon Diameter	$\frac{1}{8}$ - $\frac{1}{4}$ in.	$\frac{3}{16}$ - $\frac{3}{8}$ in.	$\frac{1}{4}$ - $\frac{1}{2}$ in.	$\frac{3}{8}$ - $\frac{3}{4}$ in.
Length	$10\frac{3}{4}$ in.	13 in.	$14\frac{3}{4}$ in.	$19\frac{3}{4}$ in.
Diameter Handle	1 in.	$1\frac{1}{4}$ in.	$1\frac{1}{2}$ in.	$1\frac{3}{4}$ in.
Weight	13 $\frac{1}{2}$ oz.	20 oz.	36 oz.	55 oz.

**Tweco Cable Splicers**

For quick repair of broken welding cables or the salvaging of short lengths.

Has soldering provision between bolted ends.

A heavy fiber sleeve covers the spliced cable.

No. S, For No. 6, 4, or 2 Cable Size	each	\$8.00
No. M, For No. 1 Through 2/0 Cable Size	each	1.00
No. L, For No. 3/0 and 4/0 Cable Size	each	1.20

**Tweco Sol-Con Cable Connectors**Solder Cable Connection  
For Electric Welding

Detachable type, quickly disconnected by a turn and toggle of the two ends, male plug and female receptacle.

Made from precision machined hexagon brass stock,  $\frac{5}{8}$ -inch on the No. 1 and  $1\frac{1}{8}$ -inch on the No. 2 connector.

Cable solders in with acid core solder.

The bore of the female receptacle is broken by a pin-key. The flattened end of the male plug, when inserted in the female receptacle, passes the pin-key; then a slight turn of the male plug locks the pin-key securely in the ring groove on the male plug.

Heavy wall red fiber insulation sleeves are securely held in place by fillister head machine screws.

No. 1, For 1, 2, 4 Cable	each	\$1.35
No. 2, For 1/0 Through 4/0 Cable	each	1.85
No. 4T, For 3/0 and 4/0 Cable. High Amperage	each	2.40

Bakelite covers can be furnished at extra cost where moisture is a hazard.

Male or female half-connector, one-half price full connector.

**Tweco Sol-Con Machine Terminals**

Solder Cable Connection

For Electric Welding



Terminal bolts directly to the positive and negative studs on any welding machine providing a quick-detach or jumping-in of cables right at the machine.

When moving machine or repairing cables, much time is saved by the quick removal of the male connector which slips from the female receptacle of the terminal.

Made in 45° angle and 180° offset; two sizes of each, No. 1-A for angle and No. 1-O for offset use the male plug of No. 1 connector. No. 2-A and No. 2-O use the male plug of No. 2 connector.

**Complete, Female Terminal and Male Connector**

No. 1-A or 1-O, For 1, 2, 4 Cable	each	\$1.75
No. 2-A or 2-O, For 1/0 Through 4/0 Cable	each	2.25

**Female Terminal Only**

No. 1-AF or 1-OF	each	1.15
No. 2-AF or 2-OF	each	1.35

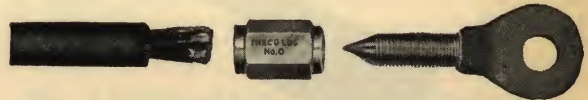
**Male Half, Plug Only**

No. 1 For 1-A or 1-O	each	.675
No. 2 For 2-A or 2-O	each	.925

**Twecolugs**

Mechanical Cable Lugs

No Solder Type

Insert Cable Strands, Turn  
Screw Into Nut Held Stationary

Designed primarily for use on arc welding cables where high amperages are used.

Operates on the principle of a tapered screw terminal wedging into a hollow seated body.

Precision machined. Terminal is made of high copper alloy. Brass body of lug is hexagon for ease of holding while installing.

Hole type, all sizes, is drilled  $\frac{21}{32}$ -inch to accommodate as large as  $\frac{5}{8}$ -inch machine studs. Slotted or open type will also fit  $\frac{5}{8}$ -inch machine studs.



Open Type



Hole Type

No. 2S or 2H, For No. 1, 2, 4 Cable	each	\$8.75
No. 0S or 0H, For No. 0, 2/0 Cable	each	.85
No. 40H, For No. 3/0, 4/0 and 250,000 Cable	each	1.20

**No. 1779 Painters' Wire Scratch Brushes**

Short trimmed, full stiff brush for removing paint, varnish and wax, and for cleaning and preparing flat surfaces. Solid block,  $7\frac{1}{4} \times 2\frac{1}{8}$  in. Rows, 9x21. Steel wire,  $1\frac{1}{16}$  inches long.

Packed 12 in a container; weight 10 pounds.



**Osborn Fine Wire Scratch Brushes**

For removing paint and varnish from surfaces to be refinished. Solid block,  $7\frac{1}{4} \times 2\frac{1}{4}$  in. Rows 6x19.

Packed 12 in a container; weight, 9 pounds.

**No. 1780.** With steel wire,  $1\frac{3}{32}$  inches long.

**No. 1780-S-20.** With stainless steel wire, .010 inch.

**No. 1777 Osborn Steel Wire Scratch Brushes**

An automobile brush. Solid block.

Packed 1 dozen in a container.

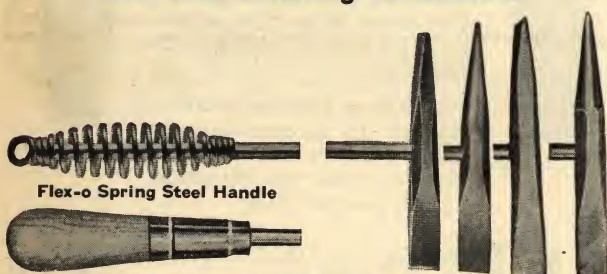
No. ....	1777
Per Dozen .....	.....
Width Block .....	inches $\frac{3}{4}$
Trim .....	inches $1\frac{1}{16}$
Length Brush Part .....	inches 6
No. of Rows .....	3x19
Length Overall .....	inches $13\frac{11}{16}$
Approx. Ship. Weight per Doz .....	pounds 5

**No. 7998 Osborn Combination Wire Brushes and Scrapers**

A straight handle brush with scraper attached. For scraping and cleaning wood or metal in preparation for refinishing.

Solid block,  $11\frac{3}{8} \times 1\frac{1}{2}$  inches; 4x11 rows. Length of brush part,  $5\frac{1}{2}$  inches; trim,  $1\frac{5}{8}$  inches. Width of blade edge,  $2\frac{3}{8}$  inches. Packed 1 dozen in a box. Wt. per dozen,  $7\frac{1}{2}$  pounds.

**No. 7998.** ..... per dozen .....

**Atlas Weld Cleaning Tomahawks**

Flex-o Spring Steel Handle

Solid Wood Hand Grip

Models G, K H, L I, M J, N

**Models G, K.** Tool steel chisel point chipping faces at right angles to each other. Flex-o spring steel handle. Length,  $9\frac{1}{2}$  inches.

**Models H, L.** Tool steel cone and chisel point faces. Flex-o spring steel handle. Length,  $9\frac{1}{2}$  inches.

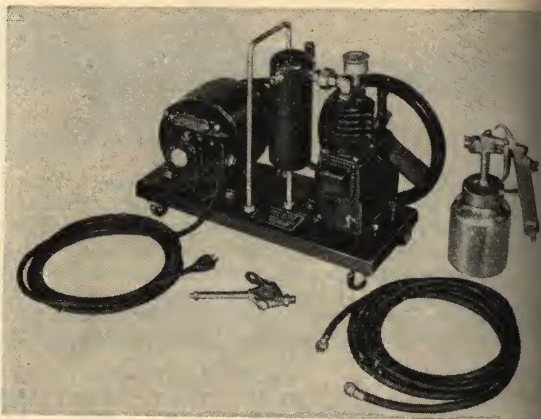
**Models I, M.** Tool steel chisel point chippings faces at right angles to each other. Solid wood handle. Lgth.  $9\frac{1}{2}$  in.

**Models J, N.** Tool steel cone and chisel point faces. Solid wood handle. Length,  $9\frac{1}{2}$  inches.

Model...	12-Oz. Std. Wt.				16-Oz. Heavy Duty Wt.			
	G	H	I	J	K	L	M	N
Each....	\$1.50	1.50	1.50	1.50	1.75	1.75	1.75	1.75

**No. 1 Saylor-Beall Farm and Home Units**

$\frac{1}{4}$ -Horsepower Motor—110-Volt, 60-Cycle, Single-Phase A. C.



Used for spraying liquid germicides on gardens and all forms of close-in planting; animal sprays and disinfectants for barns and milk houses.

The blow-gun is a handy device for blowing dust and dirt from radiator grilles of tractors and for general maintenance of equipment.

Steady flow of air-power is furnished by a compact  $\frac{1}{4}$ -horsepower motor.

The 2-inch bore with  $1\frac{3}{4}$ -inch stroke of piston delivers approximately 2 cubic feet of air per minute.

Speed of compressor, 750 rpm. Piston displacement, 2.39 cubic feet per minute. Weight, 55 pounds.

**No. 1, Complete.** ..... each \$65.75

**No. 116KC, Compressor, Split Phase Motor and Cord.** ..... each 52.50

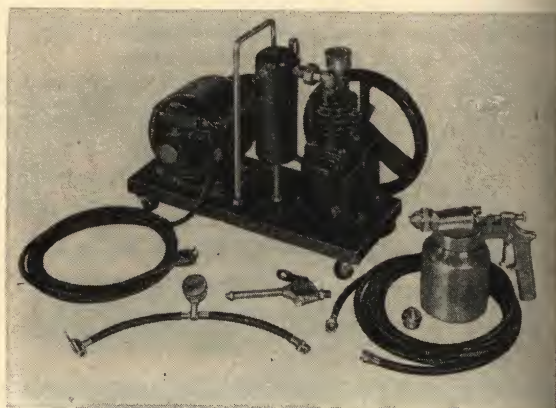
**No. 2810K, Insecticide Gun and Clip** ..... each 8.75

**No. 311K,  $12\frac{1}{2}$ -Foot Air Hose.** ..... each 2.25

**No. 2583K, Blow Gun.** ..... each 2.25

**No. 2 Saylor-Beall Farm and Home Units**

$\frac{1}{4}$ -Horsepower Motor—110-Volt, 60-Cycle, Single-Phase, A. C.



Used for spray painting automobiles, trucks, tractors, and other equipment; painting and whitewashing outbuildings; spraying insecticides on shrubbery, animals, chicken roosts, etc. Furnished with tire adapter and gauge for inflating pneumatic tires.

**Specifications:** bore, 2 inches; stroke,  $1\frac{3}{4}$  inches; speed of compressor, 750 rpm.; piston displacement, 2.39 cubic feet per minute; approximate weight, 55 pounds. Safety valve is set at 45 pounds.

**No. 2, Complete.** ..... each \$74.50

**No. 116KC, Compressor, Split Phase Motor and Cord.** ..... each 52.50

**No. 1210K, Paint Gun, Cup, No. 1 Nozzle.** ..... each 13.70

**No. 1177K, Insecticide Nozzle** ..... each 1.45

**No. 311K,  $12\frac{1}{2}$ -Foot Air Hose.** ..... each 2.25

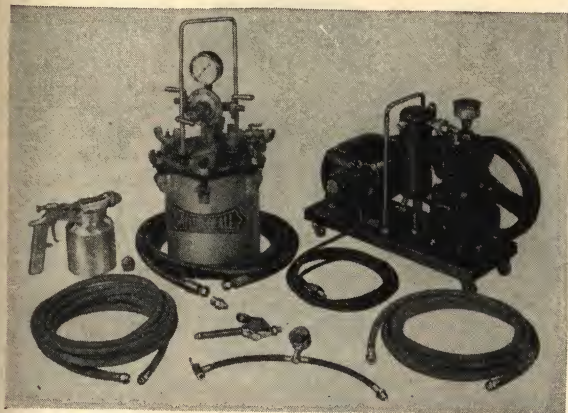
**No. 392K, Tire Adapter and Gauge.** ..... each 2.35

**No. 2583K, Blow Gun.** ..... each 2.25



## No. 3 Saylor-Beall Farm and Home Unit

$\frac{1}{2}$ -Horsepower Motor—110-Volt, 60-Cycle, Single-Phase A. C.



Used for spray painting large surfaces such as barns and houses; insecticide spraying on close-in shrubbery, animals, and chicken roosts. Also used with tire adapter and gauge for inflating pneumatic tires and has a blow-gun attachment for blowing dust and dirt from machinery and equipment.

Specifications: bore,  $2\frac{1}{2}$  inches; stroke,  $1\frac{3}{4}$  inches; speed of compressor, 540 rpm.; piston displacement, 2.70 cubic feet per minute. Approximate weight, 70 pounds.

Safety valve is set at 60 pounds.

Features a material tank which holds 2 gallons.

No. 3, Complete.....	each	\$136.50
No. 1690K, Compressor Split Phase Motor & Cord.....	each	70.00
No. 1210KA, Gun and Cup.....	each	13.70
No. 1177K, Nozzle.....	each	1.45
No. 522K, Material Hose Connection.....	each	.30
No. 438K, Material Tank.....	each	34.25
No. 371K, $12\frac{1}{2}$ -Foot Material Hose.....	each	5.15
No. 357K, $12\frac{1}{2}$ -Foot Air Hose.....	each	2.65
No. 250K, 25-Foot Air Hose.....	each	4.50
No. 392K, Tire Adapter.....	each	2.35
No. 2583K, Blow Gun.....	each	2.25

## No. 1 Saylor-Beall Farm and Home Kits

### Insecticide



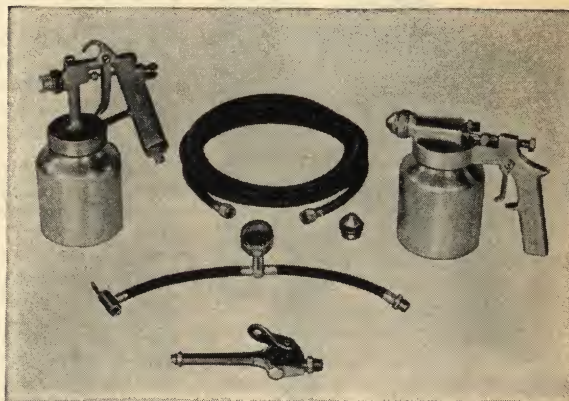
Designed for use with Nos. 1, 2, and 3 compressors or with any compressor which the safety valve is set at not more than 60 pounds.

Contains a spray gun for spraying of liquid insecticide on close-in plantings of shrubbery, as well as animal and building insecticide spraying; 14-foot air hose; and blow gun for blowing dust and other foreign matter from machinery, clothing, etc.

No. 1, Complete.....	each	\$13.25
No. 2810K, Spray Gun and Cup.....	each	8.75
No. 311K, $12\frac{1}{2}$ -Foot Air Hose.....	each	2.25
No. 2583K, Blow Gun.....	each	2.25

## No. 2 Saylor-Beall Farm and Home Kits

### Whitewash and Insecticide



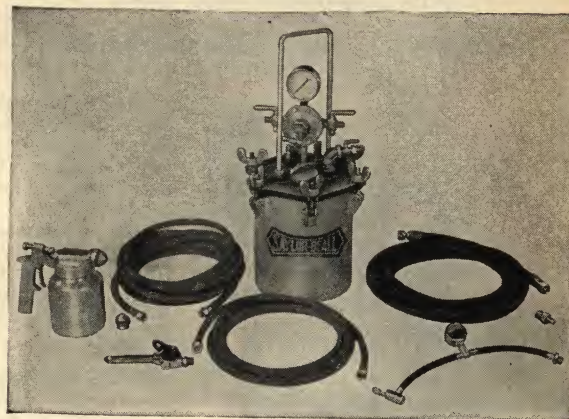
Designed for use with Nos. 1, 2, and 3 compressors or with any compressor on which the safety valve is set at not more than 60 pounds.

Contains the same accessories as Kit No. 1 plus the addition of a paint spray gun and one additional nozzle and a tire adapter and gauge.

No. 2, Complete.....	each	\$30.75
No. 1210KA, Paint Gun, Cup, No. 1 Nozzle.....	each	13.70
No. 1177K, Round Nozzle.....	each	1.45
No. 2810K, Insecticide Gun and Cup.....	each	8.75
No. 311K, $12\frac{1}{2}$ -Foot Air Hose.....	each	2.25
No. 392K, Tire Adapter and Gauge.....	each	2.35
No. 2583K, Blow Gun.....	each	2.25

## No. 3 Saylor-Beall Farm and Home Kits

### Deluxe



Designed for use with Nos. 1, 2, and 3 compressors or with any compressor on which the safety valve is set at not more than 60 pounds.

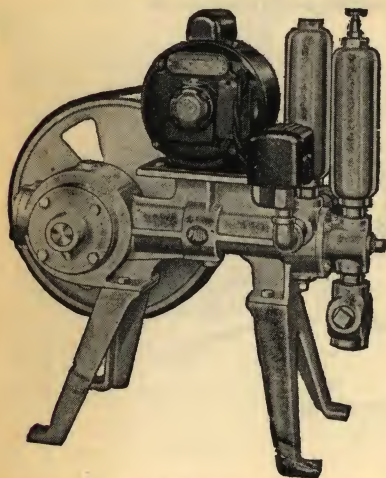
Contains the same accessories as Kits Nos. 1 and 2 with the exception of No. 2810K insecticide gun, the functions which are performed by the No. 1210KA gun using the round insecticide nozzle, and a 2-gallon material tank.

No. 3, Complete.....	each	\$66.50
No. 1210KA, Gun and Cup.....	each	13.70
No. 1177K, Nozzle.....	each	1.45
No. 522K, Material Hose Connection.....	each	.30
No. 438K, Material Tank, 2-Gallon.....	each	34.25
No. 371K, $12\frac{1}{2}$ -Foot Material Hose.....	each	5.15
No. 357K, $12\frac{1}{2}$ -Foot Air Hose.....	each	2.65
No. 250K, 25-Foot Air Hose.....	each	4.50
No. 392K, Tire Adapter and Gauge.....	each	2.35
No. 2583K, Blow Gun.....	each	2.25



**Paul Shallow Well Pumps**

115-Volt, 60 Cycle Single-Phase Motor—1725 RPM.



Used to supply the normal requirements of farm and home.

Should not be used where the source of supply is more than 22 feet below the level of the pump.

Standard equipment includes: self-priming suction pump, with one-piece cast body, complete with air charger, V-belt drive, and strainer; motor with built-in overload protector, two-bearing shaft, horizontally

mounted; two-pole control switch with range of 60 lbs., adjustable differential, 15 to 30 lbs. (normally set to cut in at 20 pounds and off at 40 pounds), vertical visible silver contact.

Fitted with a brass relief valve.

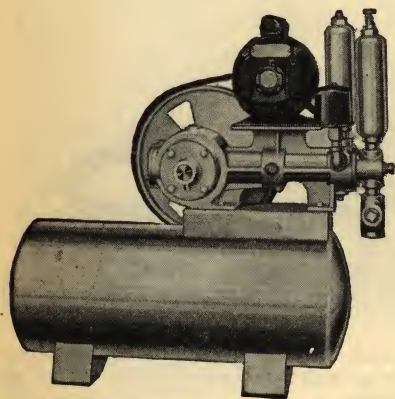
With legs or wall bracket for choice of mounting.

No. ....	200	250
Each. ....	\$77.00	81.40
Pump Capacity per Hour..... gallons	200	250
Motor..... horsepower	$\frac{1}{6}$	$\frac{1}{4}$
Pipe Sizes: Suction..... inches	$\frac{3}{4}$	$\frac{3}{4}$
Service..... inches	$\frac{3}{4}$	$\frac{3}{4}$
Dimensions: Height..... inches	27	27
Width..... inches	12	12
Length..... inches	32	32
Approximate Shipping Weight... pounds	145	150

**Paul Shallow Well Water Systems**

With 10-Gallon Storage Tanks

115-Volt, 60 Cycles Single-Phase Motor—1725 RPM.



Should be used only where the source of supply is not more than 22 feet below the level of the pump.

Has self-priming suction pump with one-piece cast body, air charger, V-belt drive, and strainer.

Motor has a built-in overload protector, two-bearing shaft, and is horizontally mounted.

Tank is electric welded, galvanized inside and out, and is tested for 85 pounds working pressure.

Furnished with two-pole control switch with a range of 60 pounds, adjustable differential, 15 to 30 pounds, (normally set to cut in at 20 pounds and off at 40 pounds), and vertical visible silver contact.

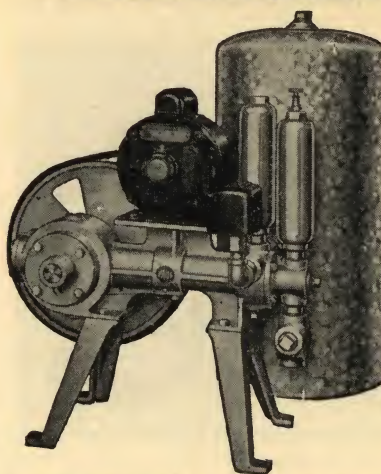
Fitted with brass relief valve.

Pipe sizes, suction and service,  $\frac{3}{4}$  inch. Height, 29 inches. Width, 14 inches. Length, 32 inches.

No. ....	200HT10	250HT10
Each. ....	\$94.40	99.70
Pump Capacity per Hour..... gallons	200	250
Motor..... horsepower	$\frac{1}{6}$	$\frac{1}{4}$
Approximate Shipping Weight. pounds	165	170

**Paul Shallow Well Water Systems  
With 12-Gallon Storage Tank**

115-Volt, 60 Cycle Single-Phase Motor—1725 RPM.



Recommended for shallow well (22-foot vertical lift) installations where occasional peak loads do not more than slightly exceed the capacity of the pump.

Has self-priming suction pump with one-piece cast body, air charger, V-belt drive, and strainer.

Motor has a built-in overload protector, two-bearing shaft, and is horizontally mounted.

Tank is mounted

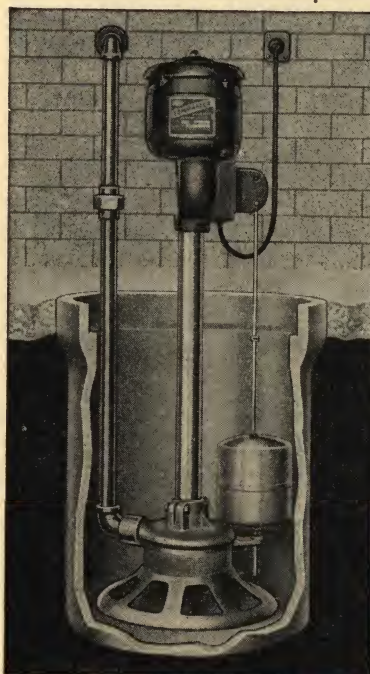
vertically and is galvanized inside and out.

Furnished with two-pole control switch with a range of 60 pounds, adjustable differential, 15 to 30 pounds (normally set to cut in at 20 pounds and off at 40 pounds), and vertical visible silver contact. Fitted with brass relief valve.

No. ....	200T12	250T12	300T12	400T12
Each. ....	\$88.00	92.70	.....	.....
Pump Cap. per Hour. gal.	200	250	300	400
Motor..... hp.	$\frac{1}{6}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$
Pipe Sizes: Suction. in.	$\frac{3}{4}$	$\frac{3}{4}$	1	1
Service. in.	$\frac{3}{4}$	$\frac{3}{4}$	1	1
Dimensions: Height. in.	26	26	27	27
Width. in.	24	24	27	27
Length. in.	33	33	40	40
Approx. Ship. Weight. lb.	150	185	235	245

**No. CD-2 Paul Sump Pumps**With  $\frac{1}{4}$ -Horsepower Motor

115 Volts, 60 Cycles



Operates successfully wherever water collects at a point below the drainage level of sewer facilities, or where drainage water must be lifted over intervening obstacles.

Recommended for buildings with deep basements, boiler rooms, settling basins, flywheel and elevator sumps, tunnels, scale pits, etc.

Total discharge: 5-foot head, 2500 gallons per hour; 10-foot head, 2000 gallons per hour; 15-foot head, 1500 gallons per hour.

All Brass.

Pipe connection,  $1\frac{1}{4}$  inches.

Overall height, 42 inches.

Maximum sump depth, 2 feet.

Shipping weight, 150 pounds.

Each. ....	\$65.00
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## Advantages of Purchasing General Electric Motors

General Electric motors are manufactured in a wide variety of types and ratings. The most widely used motors—those fulfilling the requirements of the great majority of industrial applications—are listed in this catalog. Motors of large size, non-standard rating, or special construction are described in other publications.

General Electric motors possess the exacting characteristics needed to power modern industrial machinery. They are mechanically sturdy; they incorporate the latest developments in electrical design; and they provide the essential benefits of long life and unusually trouble-free service. Specified values of current, torque, and speed can be depended upon in every unit.

Electric motors form a most versatile type of drive. They permit the application of power directly to the job. They frequently eliminate gearing and belting requirements altogether. They make it possible to bring processing operations directly into a production line.

The wide choice available in G-E motors permits the efficient application of motors in widely varying types of drives. The different enclosures offered permit the selection of motors that will stand up under the most severe conditions and that can be safely operated in the most hazardous locations. Enclosures can be obtained for installation in the presence of explosive and corrosive fumes, magnetic and abrasive dusts, splashing liquids, outdoor weather, and other adverse conditions.

General Electric motors are backed up by renewal-parts and exchange-plan services that mean economy and long life to any motor installation. G-E renewal parts are built of the same materials and to the same specifications as the original equipment. G-E exchange-plan motors eliminate long delays in repair or replacement of motors in fractional-horsepower sizes.

## Selection of Motors and Control

The selection of an electric motor and control for a given application depends upon the following factors:

### Available Power

Whether a.c. or d.c., the voltage, and if a.c. the number of phases, the frequency, and whether a 2, 3, or 4-wire system.

### Surrounding Conditions

G-E motors are exceptionally well protected and insulated to withstand atmospheric and other conditions to which the majority of motors are subjected. For unusual conditions, however, the Company is prepared to furnish motors especially designed to withstand the extraordinarily severe conditions under which they will operate. If motors or control are to be used under any of the following conditions, ask for engineering recommendations:

1. Inflammable gases or dusts where a spark would cause an explosion.
2. Rooms filled with hot vapors.
3. Where strong acid or alkaline vapors are encountered.
4. Excessive moisture.
5. Room temperature more than 40°C. (104°F.) or below 0°C. (32°F.).
6. Where windings are exposed to excessive amounts of conducting dusts: iron, carbon, coke, etc.
7. Where windings are exposed to excessive amounts of abrasive dusts: stone dust, cement, etc.

8. Occasional or repeated submergence, as on the deck of a ship.

9. Excessive vibration.

Full particulars of the condition to be met must be given in each case.

In some cases, particularly where very dusty conditions are encountered, as in foundries, etc., even though a standard open motor may operate successfully, a totally enclosed motor should be considered because of the prevention of frequent shutdowns for cleaning purposes.

### Starting Conditions

In many cases, the user knows, from past experience in similar applications, the type and rating of motor he wants, or frequently the manufacturer of the machine to be driven will supply the desired information. This makes easy the selection of the correct motor for a particular application. If it is not possible to get accurate information as to the size of the motor needed, the amount of pull actually required to start the load can usually be measured. Since the frequency of starting and the duration of the starting period, as well as unusual starting-current limitations, are very vital factors in determining the type and size of control and motor selected, they should be determined. Otherwise, a generalization of starting conditions as light, medium, heavy, or extremely heavy can be made. From this, an estimate as to the proper motor and control can be obtained. It is desirable, where information as to the requirements is not available, to conduct tests and, on the basis of the results, to select a motor suitable for the particular job.



## Selections of Motors and Control

Continued

## Running Conditions

## Speeds

Motors are usually selected with as high a standard normal speed as good engineering practice will allow, because, within limits, the lower the speed of the motor, the more costly it is to build, and frequently its operating characteristics are not quite so good as those of higher speed, standard motors. However, the increased cost of mechanical transmission sometimes offsets such advantages where the driven machine operates at a very low speed.

## Constant vs. Adjustable Speeds

Constant-speed motors are found best in the vast majority of cases. Adjustable-speed motors are more expensive and, in ordinary sizes, are seldom justified unless the quantity or quality of the output of the driven machines will be improved or the range of their capacity will be materially increased.

## Speed Regulation

(Change in speed from no load to full load.)

1. Close speed regulation is desirable for machine tools, textile machinery, and similar work.

2. Wide speed regulation is desirable with flywheel-type loads where the work strokes occur less than 25 times per minute, or where peak loads occur which might greatly overload the motor if it did not automatically slow down to take care of this.

Note—Motor of the so-called adjustable-varying-speed type, like the wound-rotor motor, or d.c. motors with armature regulation, give adjustable-varying speed with close speed regulation if the torque required by the driven machine is constant; wide speed regulation, if the torque required is fluctuating. These types are, therefore, not suited for machine tools or for similar work.

## Load Conditions

All standard, general-purpose, G-E motors are designed to carry reasonably fluctuating loads both below and above normal rating. The equivalent average load determines the size of the motor.

Note—Because of the wide variety of requirements of driven machines, the starting, rather than the running, duty sometimes determines the size of the motor selected, and, in some cases, peak loads become the determining factor.

## Service Factor (General-Purpose Motors)

The nameplates of general-purpose motors (except fractional-horsepower motors) bear a statement:  
"Service factor 1.15 at rated volts and cycles."

(This wording has been standardized by the National Electrical Manufacturers' Association for use by all member motor manufacturers.)

The *service factor* is a multiplier, which, applied to the normal horsepower rating, indicates a permissible loading within the accepted safe limits of temperature rise for the insulation. Of course, all guarantees of efficiency, power factor, etc., are based on the normal horsepower rating, and do not apply at the horsepower rating obtained by using the service factor.

This service factor of 1.15 may be used for any general-purpose motor (except fractional-horsepower motors) as defined above, even though the nameplate does not bear the service-factor clause.

As an example of the application of the service factor, assume that a purchaser has a load which requires 55 hp. as a maximum. Instead of using a 60-hp. motor, as heretofore, a 50-hp. motor may be used (as the service factor indicates a permissible loading of  $50 \times 1.15 = 57.4$ ), provided the starting and maximum torques of the 50-hp. motor are sufficient and the rated voltage and frequency are maintained.

## Ball-Bearing Motors

The application of grease-packed ball bearings is especially advantageous:

1. Where the motor frame does not remain in a stationary position after installation.
2. Where the motor is located in an inaccessible place.

The selection of the type of bearing, i.e., ball or sleeve, is largely one of individual preference, since both of these types, when properly selected, applied, and maintained, will give excellent service.

## Voltage and Frequency Range

Motors will operate successfully under the following conditions of voltage and frequency variations, but not necessarily in accordance with the standards established for operation at normal rating:

Where the variation in voltage does not exceed 10 per cent above or below normal.

Where the frequency variation does not exceed 5 per cent above or below normal.

Where the sum of the voltage and frequency variation does not exceed 10 per cent (provided the variation in frequency does not exceed 5 per cent) above or below normal rating as stamped on motor nameplate.

The starting and maximum running torque of a.c. induction motors will vary as the square of the voltage, the speed varying directly with the frequency.

## Control

Dial-type rheostats are used only where starting requirements are not severe, and starting is infrequent. Hand (except drum-type) control is used where starting service is infrequent. Remote magnetic control is used where starting is frequent; where control is used in conjunction with various pilot auxiliaries, as pressure or float switches; where it may be desirable to place control some distance from motor, yet have full control over it at all times, such as with push-button stations.

For all applications involving reversing service, engineering recommendations should be obtained.

## Full-Load Speeds of Motors

The full-load speeds of synchronous and d.c. motors and of all gear-motors are as listed in the motor ratings. The full-load speeds of induction motors are less than the synchronous speeds listed and approximate the speeds shown in the accompanying table.

Approximate Full-Load Speeds of Induction Motors

Syn- chronous RPM.	Poly- phase Type K	Poly- phase Type KG	Poly- phase Type M	Single- phase Type KC	Single- phase Type SCR
3600	3470	....	3520	3425	3500
1800	1750	1740	1720	1720	1760
1200	1160	1150	1140	1140	1160
900	870	865	855	865	870
720	695	690	690	....	....
600	575	570	575	....	....



## Selection Chart of G-E Motors and Control

Type of Motor	Starting Duty	Speed	Max Torque, Per Cent Full Load	Suggested Control	Remarks
Polyphase, Squirrel-Cage, Normal-Starting-Torque, Type K	Medium	Constant Close regulation	175-250	<b>¼-15 Hp</b> Hand control: CR1062* Magnetic: CR7006† <b>15-200 Hp</b> Hand compensator: CR1034‡ Automatic starting compensator: CR7051‡	The simplest and most widely used motor made.
Polyphase, Squirrel-Cage, High-Starting-Torque, Type KG	Heavy, but at not too frequent intervals	Constant Close regulation	200	Full-voltage, magnetic: CR7006† Hand compensator: CR1034‡	High-starting torque per ampere. Simple control. Especially suited for pumps, compressors, and the like.
Polyphase, Wound-Rotor, Type M	Heavy, governed by type of control furnished	Constant or adjustable-varying, depending upon type of control used	175-250	<b>Constant-Speed</b> <b>¼-15 Hp, Hand Starting†</b> Primary switch: CR7006 Secondary rheostat: CR1028 <b>Above 15 Hp, Hand Starting†</b> Primary switch: CR7006 Secondary: CR3204 drum switch with CR3290 resistor <b>All Ratings Remote Control‡</b> CR7022 <b>Adjustable-Varying-Speed</b> <b>¼-15 Hp†</b> Primary switch: CR7006 Secondary rheostat: CR1263 or CR 1264 <b>Above 15 Hp, Hand Control†</b> Primary switch: CR7006 Secondary: CR3204 drum switch with CR3290 resistor	For use where frequent and heavy starting is required, or where low starting current is imperative, or where adjustable-varying speed is desired.
Single-Phase, Capacitor, Type KC	Medium	Constant Close regulation	200 approx.	CR7006 magnetic switch†	Will accelerate practically any load it can start.
Single-Phase, Repulsion-Induction, Type SCR	Heavy	Constant Close regulation	175-250	<b>Full-Voltage</b> Hand control: CR1062* Magnetic: CR7006† <b>Reduced-Voltage</b> Rheostat: CR1026	For use in ratings not available in capacitor-type motor.
Synchronous, Type TS Type QS	Medium	Constant	150-250	Recommendations made on request	For use where (1) maximum power factor and operating efficiency in larger ratings are desired, (2) where constant speed is essential, (3) where power-factor improvement is advantageous.
Direct-Current, Constant-Speed, Shunt-Wound, Types B and CD	Medium	Constant Close regulation	Limited by commutation	Hand rheostat: CR1003‡ Remote: CR4052‡ or CR4061‡	25 per cent increase in speed possible with adjustable-speed field control.
Direct-Current, Constant-Speed, Compound-Wound, Types B and CD	Heavy	Constant 25 per cent regulation	Limited by commutation	Hand rheostat: CR1003‡ Remote: CR4052‡ or CR4061‡	For flywheel loads and other widely fluctuating loads that occur less than 25 times a minute.
Direct-Current, Adjustable-Speed Shunt-Wound, Types B and CD	Medium	Adjustable Close regulation	Limited by commutation	Hand control: CR3105 drum switch with CR3190 and CR3144 resistors Remote control: CR4161‡ with CR8070 field rheostat	For machine-tool and other work requiring adjustable speed.

\*Provides overload protection.

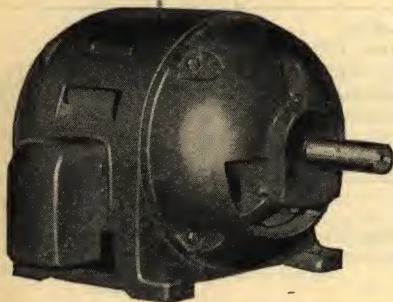
†Provides overload and undervoltage protection.

‡Provides undervoltage protection.



## G-E Tri-Clad Squirrel-Cage Induction Motors

Type K—Normal Starting Torque  
Type KG—High Starting Torque  
1/3 to 200 Hp., Constant-Speed, 2 and 3-Phase,  
\*60 Cycles, Continuous Duty, 40°C. Rise



Tri-Clad Open (Drip-Proof), Sleeve-Bearing Motor

### Type K—Normal Starting Torque

The Type K induction motor is suitable for either full voltage or reduced voltage starting depending upon the permissible starting current of the particular application. It has the highest efficiency and power factor of all the standard lines of induction motors, and is well fitted for driving pumps, fans, blowers, line shafting, and similar equipment requiring continuous operation with fairly constant load.

In general, this motor can be used for any application where continuous operation and constant speed are required, together with a fairly constant load.

### Type KG—High Starting Torque

The Type KG motor has high starting torque and low starting current and is intended to supply the need for motors having a higher percentage of starting torque than can be obtained from the Type K motors with full voltage applied, yet having a starting current equal to the Type K motor, together with high full-load efficiency and power factor.

Recommended for such drives as compressors without unloading valves, conveyors which must be started loaded, and other applications requiring high starting torque.

Type KG motors starting at full voltage should be applied only where high torque at start is actually required and only when the driven mechanism will not be injured by the sudden application of this torque. This latter caution applies especially to drives or driven machines utilizing belts, either of the flat or V type, chains, or other flexible or flat elements.

Hp. at 40°C.	Frame	Sync. Speed RPM.	†Volts	Type K Only	
				Sleeve Bearing Each	Ball Bearing Each
1/3	204	720	208	\$70.	\$70.
	224	600	110-220	82.	82.
			440-550		
1/2	204	900	208	62.	62.
	224	720	110-220	82.	82.
	225	600	440-550	91.	91.
3/4	203	1200	208	56.	56.
	224	900	208	72.	72.
	225	720	110-220	91.	91.
1	254	600	440-550	109.	109.
	284	514		127.	127.
	203	1800		51.	51.
	204	1200	208	60.	60.
	225	900	110-220	81.	81.
	254	720	440-550	109.	109.
	254	600		121.	121.
	284	514		138.	138.

\*Listed open motors will operate on 50 cycles at maintained voltages without injurious heating, except that motors in Frames 364 and larger rated 720 rpm. and lower must be specifically ordered for 50-cycle operation. The 60-cycle horsepower ratings and prices apply. Synchronous speeds are 5/6 of those of 60 cycles.

†All standard 220 and 440-volt, polyphase, squirrel-cage motors in Frames 203 to 445 inclusive have sufficient leads brought out so that they can be reconnected at the terminal board for either 220 or 440 volts.

Continued

## G-E Tri-Clad Squirrel-Cage Induction Motors

General-Purpose, Open, Dripproof  
Type K—Normal Starting Torque  
Type KG—High Starting Torque  
1/3 to 200 Hp., Constant-Speed, 2 and 3-Phase,  
\*60 Cycles, Continuous Duty, 40°C. Rise  
Continued

Hp. at 40°C.	Frame	Sync. Speed RPM.	†Volts	Type K Only		Type KG Only	
				Sleeve Brg. Each	Ball Brg. Each	Sleeve Brg. Each	Ball Brg. Each
1 1/2	203	3600		\$62.	\$62.	....	....
	204	1800		60.	60.	....	....
	224	1200	208	69.	69.	....	....
	254	900	110-220	96.	96.	....	....
	254	720	440-550	121.	121.	....	....
	284	600		133.	133.	....	....
2	324	514		176.	176.	....	....
	204	3600		72.	72.	....	....
	224	1800		69.	69.	....	....
	225	1200	208	77.	77.	....	....
	254	900	110-220	111.	111.	....	....
	284	720	440-550	133.	133.	....	....
3	324	600		168.	168.	....	....
	326	514		211.	211.	....	....
	224	3600		81.	81.	....	....
	225	1800	208	77.	77.	....	....
	254	1200	110-220	92.	92.	\$97.	\$97.
	284	900	440-550	126.	126.	132.	132.
5	324	720		168.	168.	176.	176.
	326	600		200.	200.	210.	210.
			208				
	365	514	220-440	276.	276.	....	....
			550				
	225	3600		96.	96.	....	....
7 1/2	254	1800	208	92.	92.	97.	97.
	284	1200	110-220	120.	120.	126.	126.
	324	900	440-550	161.	161.	169.	169.
	326	720		200.	200.	210.	210.
			208	265.	265.	285.	285.
	†364	600	220-440	322.	338.	....	....
10	404	514	550				
	254	3600		126.	126.	....	....
	284	1800	208	120.	120.	126.	126.
	324	1200	110-220	153.	153.	161.	161.
	326	900	440-550	192.	192.	202.	202.
			208	265.	265.	285.	285.
15	†365	600	220-440	325.	325.	349.	349.
	405	514	550	380.	399.	....	....
	284	3600	208	161.	161.	....	....
	324	1800	110-220	153.	153.	161.	161.
	326	1200	440-550	183.	183.	192.	192.
	364	900		241.	241.	259.	259.
20	†365	720	208	325.	325.	349.	349.
	†404	600	220-440	363.	381.	390.	410.
	444	514	550	437.	459.	....	....
			208	192.	192.	....	....
	324	3600	110-220	183.	183.	192.	192.
	326	1800	440-550				
25	364	1200		241.	241.	259.	259.
	365	900	208	295.	295.	317.	317.
	†404	720	220-440	363.	381.	390.	409.
	†405	600	550	417.	438.	448.	470.
	445	514		545.	572.	....	....
			208				
30	326	3600	110-220	229.	229.	....	....
			440-550				
	364	1800		218.	218.	234.	234.
	365	1200	208	295.	295.	317.	317.
	404	900	220-440	330.	347.	355.	373.
	†405	720	550	417.	438.	448.	470.
50	†444	600		520.	546.	598.	628.
	504U	514		629.	660.	....	....

\*Listed open motors will operate on 50 cycles at maintained voltage without injurious heating except that motors in Frames 364 and larger rated 720 rpm and lower must be specifically ordered for 50-cycle operation. The 60-cycle horsepower ratings and prices apply. Synchronous speeds are 5/6 of those of 60 cycles.

†All standard 220 and 440-volt, polyphase, squirrel-cage motors in Frames 203 to 445 inclusive have sufficient leads brought out so that they can be connected for either 220 or 440 volts.

‡Type KG motors are built in a larger frame size.

Continued



## G-E Tri-Clad Squirrel-Cage Induction Motors

General-Purpose, Open, Dripproof

Type K—Normal Starting Torque

Type KG—High Starting Torque

 $\frac{1}{2}$  to 200 Hp., Constant-Speed, 2 and 3-Phase,  
\*60 Cycles, Continuous Duty, 40°C. Rise

Continued

Hp. at 40°C.	Frame	Sync. Speed RPM.	†Volts	Type K Only Sleeve Brq. Each	Ball Brq. Each	Type KG Only Sleeve Brq. Each	Ball Brq. Each
25	\$364S	3600		\$265.	\$265.		
	364	1800	208	252.	252.	\$271.	\$271.
	404	1200	220-440	330.	347.	355.	373.
	405	900	550	380.	399.	409.	429.
			208				
	†444	720	220-440	520.	546.	598.	628.
			550				
			208				
	†445	600	220-440	602.	632.	692.	727.
			550				
			208				
	505	514	220-440	741.	778.	....	....
			550				
30	\$364S	3600	208	364.	364.	....	....
	365	1800	220-440	347.	347.	373.	373.
	405	1200	550	380.	399.	409.	429.
			208				
	444	900	220-440	473.	497.	544.	571.
			550				
			208				
	†445	720	220-440	602.	632.	692.	727.
			550				
			208				
	†504U	600	220-440	710.	746.	817.	858.
			550				
			208				
40	\$365S	3600	220-440	439.	439.	....	....
	404	1800	550	399.	419.	429.	450.
			208				
	444	1800	†2300	572.	601.	....	....
			208				
	444	1200	220-440	473.	497.	544.	571.
			550				
	445	1200	†2300	646.	678.	....	....
			208				
	445	900	220-440	547.	574.	629.	660.
			550				
	504U	900	†2300	705.	740.	....	....
			208				
	†504U	720	220-440	710.	746.	817.	858.
			550				
			208				
50	\$404S	3600	220-440	521.	547.	....	....
	405S	1800	550	497.	522.	534.	561.
			208				
	445S	1800	2300	670.	704.	....	....
			208				
	445	1200	220-440	547.	574.	629.	660.
			550				
	504U	1200	2300	705.	740.	....	....
			208				
	504U	900	220-440	645.	677.	742.	779.
			550				
	505	900	2300	802.	842.	....	....
			208				
60	\$405S	3600	220-440	603.	633.	....	....
			550				
	444S	3600	†2300	776.	815.	....	....
			208				
	444S	1800	220-440	575.	604.	661.	694.
			550				
	445S	1800	2300	732.	769.	842.	884.
			208				
	504U	1200	220-440	645.	677.	742.	779.
			550				
	505	1200	2300	802.	842.	922.	968.

\*Listed open motors will operate on 50 cycles at maintained voltages without injurious heating, except that motors in Frames 364 and larger rated 720 rpm. and lower must be specifically ordered for 50-cycle operation. The 60-cycle horsepower ratings and prices apply. Synchronous speeds are 5/6 of those at 60 cycles.

†All standard 220 and 440-volt polyphase, squirrel-cage motors in Frames 203 to 445 inclusive have sufficient leads brought out so that they can be connected for either 220 or 440 volts.

‡Type KG motors are built in a larger frame size.

§These motors are recommended for direct connection only. For motors in Frames 444S and larger, 3600 rpm., state direction of rotation.

¶Three-phase only.

Continued

## G-E Tri-Clad Squirrel-Cage Induction Motors

General-Purpose, Open, Dripproof

Type K—Normal Starting Torque

Type KG—High Starting Torque

 $\frac{1}{2}$  to 200 Hp., Constant-Speed, 2 and 3-Phase,  
\*60 Cycles, Continuous Duty, 40°C. Rise

Concluded

Hp. at 40°C.	Frame	Sync. Speed RPM.	†Volts	Type K Only Sleeve Brq. Each	Ball Brq. Each	Type KG Only Sleeve Brq. Each	Ball Brq. Each
			208				
75	†444S	3600	220-440	\$779.	\$818.	....	....
			550				
	†445S	3600	2300	952.	1000.	....	....
			208				
	†445S	1800	220-440	677.	711.	\$779.	\$818.
			550				
	†504S	1800	2300	835.	877.	960.	1008.
			208				
100	†445S	3600	220-440	1083.	1137.	....	....
			550				
	†504S	3600	2300	1240.	1302.	....	....
			208-220				
	†504S	1800	440-550	866.	909.	996.	1046.
			2300				
	†505S		2300	984.	1033.	1132.	1189.
	†6323S	1200	208-220				
			440-550	1013.	1064.	1165.	1223.
	†6323S	1200	2300	1170.	1229.	1346.	1413.
			208-220				
	6325	900	440-550	1071.	1125.	1232.	1294.
			2300				
	6325	900	2300	1236.	1298.	1421.	1492.
125	†504S	3600	208-220				
			440-550	1342.	1409.	....	....
	†504S	3600	2300	1499.	1574.	....	....
			206-220				
	†505S	1800	440-550	1032.	1084.	1187.	1246.
			2300				
	†6323S	1800	2300	1144.	1201.	1316.	1382.
	†6324S	1200	208-220				
			440-550	1206.	1266.	1387.	1456.
	†6324S	1200	2300	1351.	1419.	1554.	1632.
			208-220				
	6333	900	440-550	1356.	1424.	1559.	1637.
			2300				
	6333	900	2300	1466.	1539.	1686.	1770.
150	†505S	3600	208-220				
			440-550	1555.	1633.	....	....
	†505S	3600	2300	1694.	1779.	....	....
			208-220				
	†6324S	1800	440-550	1196.	1256.	1375.	1444.
			2300				
	†6324S	1800	2300	1303.	1368.	1498.	1573.
	†6325S	1200	208-220				
			440-550	1401.	1471.	1611.	1692.
	†6325S	1200	2300	1535.	1612.	1765.	1853.
			208-220				
	†6334S	900	440-550	1567.	1645.	1802.	1892.
			2300				
	†6334S	900	2300	1658.	1741.	1907.	2002.
200	†6326S	3600	208-220				
			440-550	1986.	....	....	....
	†6326S	3600	2300	2084.	....	....	....
			208-220				
	†6325S	1800	440-550	1528.	1604.	1757.	1845.
			2300				
	†6325S	1800	2300	1603.	1683.	1843.	1935.
			208-220				
	†6334S	1200	440-550	1833.	1925.	2108.	2213.
			2300				
	†6334S	1200	2300	1908.	2003.	2194.	2303.
			208-220				
	†6335S	900	440-550	1976.	2075.	2272.	2386.
			2300				
	†6335S	900	2300	2037.	2139.	2343.	2460.

\*Listed open motors will operate on 50 cycles at maintained voltages without injurious heating, except that motors in Frames 364 and larger rated 720 rpm. and lower must be specifically ordered for 50-cycle operation. The 60-cycle horsepower ratings and prices apply. Synchronous speeds are 5/6 of those at 60 cycles.

†All standard 220 and 440-volt polyphase, squirrel-cage motors in Frames 203 to 445 inclusive have sufficient leads brought out so that they can be connected for either 220 or 440 volts.

‡These motors are recommended for direct connection only. For motors in Frames 444S and larger, 3600 rpm., state direction of rotation.



## G-E Tri-Clad Totally Enclosed and Totally Enclosed, Fan-Cooled Squirrel-Cage Induction Motors

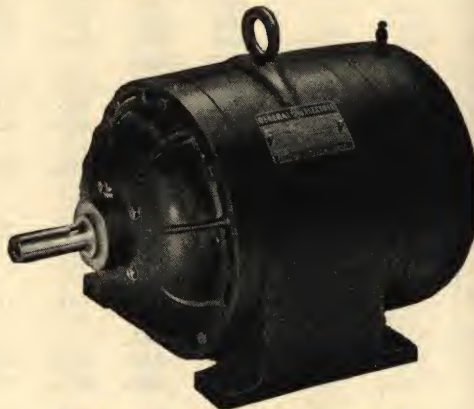
### Type K—Normal Starting Torque

Standard and Explosion-Proof—Enclosed,  $\frac{1}{4}$  to 5 Hp.; Fan-Cooled,  $\frac{3}{4}$  to 200 Hp.

Constant Speed, 2 and 3-Phase, 60 Cycles, Continuous Duty, 55°C. Rise



Type K Totally Enclosed Motor



Type K Totally Enclosed, Fan-Cooled Motor

General Electric has a complete line of totally enclosed motors which have been tested and listed by the Underwriters' Laboratories for Class I, Group D (gasoline); Class II, Group E (magnesium or aluminum dust); Class II, Group F (coal or coke dust); and Class II, Group G (grain dust) service. Motors must be specified for the respective service in order that they may bear the proper Underwriters' label indicating their suitability for the conditions applied.

In the smaller ratings, motors are built in totally enclosed (not fan-cooled) frames. In the larger ratings, the totally enclosed, fan-cooled design is standard. The latter type permits total enclosure of a motor, yet allows full open-motor horsepower rating in those sizes which would otherwise require frames larger than those of open ratings.

The fan-cooled type of enclosure essentially involves motors totally enclosed with an additional housing which has an external fan mounted at the end opposite the pulley. This fan draws air and directs it over the motor frame along especially designed ventilating paths, and exhausts it at the pulley end. The fans on the motor rotor keep the air inside the motor agitated, thus dissipating heat from the motor to the frame.

The explosion-proof motors are furnished with an external fan, made of nonsparking metal, similar to that on the standard totally enclosed, but otherwise fan-cooled motors.

### Totally Enclosed—Not Fan-Cooled

Hp. at 55°C.	Frame	Sync. Speed RPM.	*Volts	Type K, Motor Only Ball Bearing— Class I, Group D and Class II, Groups E, F, and G		Hp. at 55°C.	Frame	Sync. Speed RPM.	*Volts	Type K, Motor Only Ball Bearing— Class I, Group D, and Class II, Groups E, F, and G	
				Standard Each	Each					Standard Each	Each
$\frac{1}{4}$	†204	600		\$75.	\$96.	$\frac{1}{2}$	†203	3600		\$88.	\$111.
							†204	1800		76.	99.
$\frac{1}{3}$	†204	720		75.	96.		†224	1200		84.	107.
	†224	600		89.	112.		†254	900		105.	134.
							†324	720		188.	....
$\frac{1}{2}$	†204	900		67.	88.		†326	600		220.	....
	†224	720		89.	112.	2	224	1800		101.	....
	†225	600	208	98.	121.		†254	1200		101.	....
$\frac{3}{4}$	†203	1200	110-220	61.	82.		†284	900	110-220	140.	....
	†224	900	440-550	79.	102.		†326	720	440-550	220.	....
	†254	720		118.	147.	3	†284	3600		175.	....
	†254	600		130.	159.		†284	1800		134.	....
1	†203	1800		65.	86.		†324	1200		173.	....
	†204	1200		76.	99.		†324	900		181.	....
	†225	900		88.	111.						
	†284	720		147.	....	5	†324	3600		212.	....
	†324	600		188.	....		†326	1800		203.	....

\*All standard 220 and 440-volt, polyphase, squirrel-cage motors, in Frames 204 to 326 inclusive, except those 2-phase ratings as noted, have sufficient leads brought out so that they can be connected at the terminal board for either 220 or 440 volts.

†Standard totally enclosed motors in these frames are

Tri-Clad. Explosion-proof motors are not Tri-Clad.

‡Two-phase motors in these ratings are not reconnectable for 220-440 volts in explosion-proof construction.

§Size for standard construction only. Explosion-proof motors are built in a larger frame size.

¶Not Tri-Clad.



## G-E Tri-Clad Totally Enclosed, Fan-Cooled Squirrel-Cage Induction Motors

## Type K—Normal Starting Torque

Standard and Explosion-Proof— $\frac{3}{4}$  to 200 Hp., Constant Speed, 2 and 3-Phase

60 Cycles, Continuous Duty, 55°C. Rise

Type K, Motor Only —Ball Bearing— Class I, Group D and Class II, Groups E, F and G										Type K, Motor Only —Ball Bearing— Class I, Group D and Class II, Groups E, F and G										Type K, Motor Only —Ball Bearing— Class I, Group D and Class II, Groups E, F and G											
Hp. at 55°C.	Frame	Sync. Speed RPM.	*Volts	Standard Each	Class II, Groups E, F and G Each	Hp. at 55°C.	Frame	Sync. Speed RPM.	*Volts	Standard Each	Class II, Groups E, F and G Each	Hp. at 55°C.	Frame	Sync. Speed RPM.	*Volts	Standard Each	Class II, Groups E, F and G Each	Hp. at 55°C.	Frame	Sync. Speed RPM.	*Volts	Standard Each	Class II, Groups E, F and G Each	Hp. at 55°C.	Frame	Sync. Speed RPM.	*Volts	Standard Each	Class II, Groups E, F and G Each		
3/4	†225	720		\$121.	\$144.				110-220			60	504U	1200	208					504U	1200	208									
1	†254	720		145.	174.	20	326	3600	440-550	\$299.	\$339.				220-440-550							220-440-550									
	†254	600		157.	186.				208				505	1200	2300							2300									
1 1/2	†254	720		157.	186.		364	1800		319.	378.				208							208									
	†284	600		184.	215.		365	1200	208	418.	477.				220-440-550							220-440-550									
2	†204	3600		95.	116.		404	900	220-440	493.	579.				208							208									
	†225	1800		107.	122.		444	720	550	607.	693.				220-440-550							220-440-550									
	†225	1200		107.	130.		445	600		757.	875.				208							208									
	†254	900		147.	176.	25	†365S	3600	208	366.	425.				220-440-550							220-440-550									
	†284	720	110	184.	215.		365	1800	220-440	353.	412.				208							208									
	†324	600	208	238.	278.		404	1200	550	493.	579.				220-440-550							220-440-550									
3	224	3600	220	111.	134.		405	900		570.	656.				208							208									
	225	1800	440	107.	130.		445	720		757.	875.				220-440-550							220-440-550									
	254	1200	550	128.	157.		504U	600		958.	1076.				208							208									
	†284	900		177.	208.	30	†404S	3600	208	487.	546.				220-440-550							220-440-550									
	†324	720		238.	278.		404	1800		470.	529.				208							208									
	†326	600		270.	310.		405	1200		570.	656.				220-440-550							220-440-550									
5	225	3600		126.	149.		444	900	220-440-550	710.	828.				208							208									
	254	1800		128.	157.					958.	1076.				220-440-550							220-440-550									
	284	1200		171.	202.		504U	720		1129.	1247.				208							208									
	324	900		231.	271.	40	†405S	3600		582.	641.				220-440-550							220-440-550									
	†326	720		270.	310.										208							208									
	365	600	208	366.	425.		405	1800	220-440-550	562.	648.				220-440-550							220-440-550									
			220-440-550												208							208									
7 1/2	254	3600	208	162.	191.		445	1800	220-440-550	735.	821.				208							208									
	284	1800	110-220	171.	202.		444	1200	220-440-550	710.	828.				220-440-550							220-440-550									
	324	1200	440-550	223.	263.		504U	1200	2300	883.	1001.				208							208									
	326	900		262.	302.		445	900	220-440-550	903.	1021.				220-440-550							220-440-550									
	365	720	220-440	366.	425.		504U	900	2300	1061.	1179.				208							208									
	404	600	208-550	448.	507.		505	720	220-440-550	1129.	1247.				220-440-550							220-440-550									
10	284	3600	208	212.	243.	50	†444S	3600	208	811.	897.				220-440-550							220-440-550									
	324	1800	110-220	223.	263.				220-440-550						208							208									
	326	1200	440-550	253.	293.		†444S	1800	220-440-550	786.	872.				208							208									
	364	900	208	342.	401.		†504S	1800	2300	959.	1045.				220-440-550							220-440-550									
	404	720	220-440	448.	507.		445	1200	208	903.	1021.				208							208									
	405	600	550	526.	612.				220-440-550						220-440-550							220-440-550									
15	324	3600	208	262.	302.		504U	1200	2300	1061.	1179.				208							208									
	326	1800	110-220	223.	263.		504U	900	220-440-550	1064.	1182.				208							208									
			440-550	253.	293.	60	†445S	3600	208	956.	1042.				220-440-550							220-440-550									
	364	1200	208	342.	401.		†504S	3600	2300	1129.	1215.				208							208									
	365	900	220-440	418.	477.		†445S	1800	208	927.	1045.				220-440-550							220-440-550									
	405	720	550	526.	612.				208						208							208									
	444	600		607.	693.		†504S	1800	2300	1084.	1202.				220-440-550							220-440-550									

\*All standard 220 and 440-volt polyphase, squirrel-cage motors in Frames 204 to 505 inclusive, except those 2-phase ratings as noted, have sufficient leads brought out so that they can be connected at the terminal board for either 220 or 440 volts (except 60 hp., 900 rpm.; 75 hp., 1200 rpm.; and 100 hp., 3600 and 1800 rpm.).

†Not Tri-Clad.

‡Size for standard construction only. Explosion-proof ratings are built in a larger frame size.

§Two-phase motors in these ratings are not reconnectable for 220-440 volts.

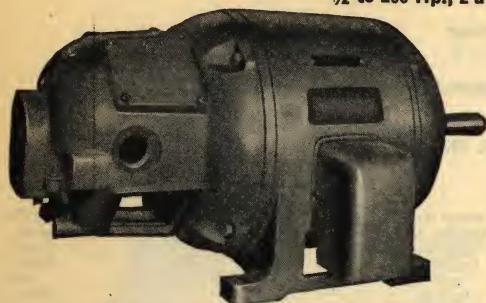
¶These motors are recommended for direct connection only. Orders should specify direction of rotation.

||Class II, Group E, motors available in Frames 505 and smaller only.

\*\*Two-pole, 3600 and 3000-rpm. motors in Frames 504S and larger, will be furnished with oil-lubricated sleeve bearings as standard.



## G-E Tri-Clad General Purpose Wound-Rotor Induction Motors

Type M—Constant-Speed and Adjustable-Varying-Speed  
½ to 200 Hp., 2 and 3-Phase, 60 Cycles, Continuous Duty, 40°C. Rise

Type M Tri-Clad Wound-Rotor Motor

Type M wound-rotor induction motors have both constant and adjustable-varying-speed characteristics, the desired speed characteristics being obtained by selecting controllers of the proper types. This type of motor is suitable for constant-speed applications requiring frequent starting or reversing under heavy load, or where exceptionally high starting torque is encountered. It can also be used on applications requiring adjustable-varying-speed characteristics. For this type of service, the speed can be adjusted by any value over a considerable range but, once adjusted, will vary with change in load.

Open 40°C. rise, Type M, 60-cycle, polyphase motors will operate without injurious heating on 50-cycle circuits of 110, 220, 440, 550, and 2300 volts (except that motors in Frames 364 and larger, rated 720 rpm. and lower, must be specifically ordered for 50-cycle operation, if required). Sixty-cycle horsepower ratings and prices apply. Synchronous speeds are 5/6 of those at 60 cycles.

Type M										Type M										Type M													
Motor Only				Motor Only				Motor Only				Motor Only				Motor Only				Motor Only				Motor Only									
Sleeve	Ball	Brq.	Brq.	Sleeve	Ball	Brq.	Brq.	Sleeve	Ball	Brq.	Brq.	Sleeve	Ball	Brq.	Brq.	Sleeve	Ball	Brq.	Brq.	Sleeve	Ball	Brq.	Brq.	Sleeve	Ball	Brq.	Brq.	Sleeve	Ball	Brq.	Brq.		
Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each			
Hp. at 40°C.	Frame	Sync. Speed RPM.	Volts	Hp. at 40°C.	Frame	Sync. Speed RPM.	Volts	Hp. at 40°C.	Frame	Sync. Speed RPM.	Volts	Hp. at 40°C.	Frame	Sync. Speed RPM.	Volts	Hp. at 40°C.	Frame	Sync. Speed RPM.	Volts	Hp. at 40°C.	Frame	Sync. Speed RPM.	Volts	Hp. at 40°C.	Frame	Sync. Speed RPM.	Volts	Hp. at 40°C.	Frame	Sync. Speed RPM.	Volts		
1/2	1224	1200		20	....	3600		75	6324	900	208-220-440-550	1265	1328			100	**6326S	3600	208-220-440-550	1937	....			125	**6328S	3600	208-220-440-550	2244	....				
	....	900			148.	148.			524.	524.	2300	1447.	1519.					2300	1411.	1482.						2300	1496.	1571.					
	....	720			190.	190.			545.	572.	6325	720	208-220-440-550	1534.	1611.			6325	900	208-220-440-550	1469.	1542.			6333	600	208-220-440-550	1684.	1768.				
	....	600			198.	198.			645.	677.			2300	1650.	1733.					2300	1788.	1877.					2300	1882.	1976.				
3/4	1224	1200			148.	148.			826.	867.			2300	1681.	1765.					2300	1803.	1893.					2300	1962.	2060.				
	1224	900			182.	182.			891.	936.			2300	1803.	1893.													2300	2050.	2153.			
	....	720			216.	216.			885.	929.																							
	....	600			302.	302.			590.	590.																							
1	1224	1800			155.	155.			619.	650.																							
	1224	1200			166.	166.			712.	748.																							
	1225	900	110		196.	196.			911.	957.																							
	1254	720	208		300.	300.			987.	1036.																							
	1284	600	220		306.	306.			932.	979.																							
1 1/2	1224	3600	440		236.	236.			621.	652.																							
	1224	1800	550		157.	157.			683.	717.																							
	1224	1200			182.	182.			788.	827.																							
	1254	900			213.	213.			987.	1036.																							
	1284	720			306.	306.			1073.	1127.																							
	1324	600			316.	316.			1104.	1159.																							
2	1225	3600			248.	248.			736.	773.																							
	1225	1800			165.	165.			879.	923.																							
	1225	1200			196.	196.			802.	842.																							
	1254	900			234.	234.			997.	1047.																							
	1324	720			309.	309.			909.	954.																							
	1326	600			330.	330.			1087.	1141.																							
3	1225	3600			279.	279.			1123.	1179.																							
	1225	1800			186.	186.			1227.	1288.																							
	1254	1200			225.	225.			1254.	1317.																							
	1284	900			265.	265.			836.	878.																							
	1326	720			325.	325.			980.	1029.																							
	365	600			378.	378.			914.	960.																							
5	1254	3600			339.	339.			1096.	1151.																							
	1254	1800			226.	226.			1026.	1077.																							
	1284	1200			274.	274.			1192.	1252.																							
	1324	900			328.	328.			1249.	1311.																							
	365	720			503.	503.			1383.	1452.																							
7 1/2	1284	3600	208		523.	549.			1365.	1433.																							
	1284	1800	220		404.	404.			1486.	1560.																							
	1324	1200	440		269.	269.			1403.	1473.																							
	1326	900	550		329.	329.			1611.	1692.																							
	404	720			393.	393.			935.	982.																							
	405	600			551.	579.			1074.	1128.																							
10	1324	3600			592.	622.			1028.	1079.																							
	1324	1800			473.	473.			1191.	1251.																							
	1326	1200			315.	315.			1125.	1181.																							
	365	900			376.	376.			1297.	1362.																							
	405	720			465.	465.			1369.	1437.																							
	444	600			605.	635.			1492.	1567.																							
15	1326	3600			644.	676.			1498.	1573.																							
	1326	1800			657.	657.			1611.	1692.																							
	365	1200			438.	438.			1610.	1691.																							
	404	900			473.	473.			1818.	1909.																							
	444	720			549.	576.			1073.	1127.																							
	445	600			712.	748.			1212.	1273.																							
					770.	809.			1321.	1387.																							

\*The horsepower output at 50 per cent below normal speed will be approximately 40 per cent of normal horsepower without injurious heating. †Motors for 220 and 440 volts in Frames 505 and smaller, but not exceeding 75 hp., are dual-voltage, 220-440 volts, except for a few 2-phase ratings marked.

‡Motors in these frames are not Tri-Clad. §Two-phase motors in these ratings are for single-voltage only. ¶These motors are recommended for

direct connection only. For motors in Frames 444S and larger at 3600 rpm, orders must state direction of rotation (viewing end opposite driving end) desired so that fan may be properly arranged for ventilation. The temperature ratings of 3600-rpm. motors in Frames 504S and larger are 40°C. rise on stator and 75°C. rise with Class B insulation on rotor. ¶Three-phase motors only. \*\*This motor will be furnished as standard with sleeve bearings only.



### G-E Integral-Hp. Single-Phase Capacitor-Type Tri-Clad Induction Motors

Type KC—Normal Starting Torque  
Type KCJ—High Starting Torque



Type KC Normal-Torque Motor

Open, Horizontal, Constant-Speed, Dual-Rotation  
60 Cycles, 40°C. Rise, Continuous

The Type KC motor is designed for applications requiring moderate starting torques.

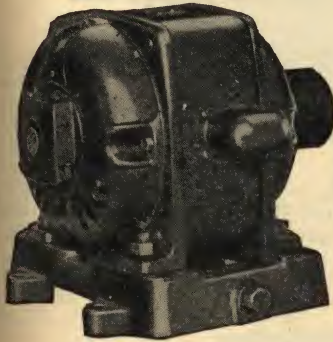
The Type KCJ motor is designed for applications requiring high starting torque.

Hp.	Sync. Speed RPM.	*Volts	Motor Only			Thermo-Tector	
			Sleeve Bearing Each	Ball Bearing Each	Frame (Dripproof)	115-230 Volts Each	230 Volts Each
1	900	115-230	\$111.	\$111.	224	\$2.00	....
	1200		80.	80.	204	2.00	....
	1800		140.	140.	225	2.00	....
1 1/2	900		62.	62.	203	2.00	....
	1200		102.	102.	224	2.00	....
	1800		83.	83.	203	3.00	....
2	900	230	80.	80.	204	3.00	....
	1200		129.	129.	225	3.00	....
	1800		107.	107.	204	....	\$3.00
3	900		102.	102.	224	....	....
	1200		140.	140.	224	....	....
	1800		129.	129.	225	....	....
5	900	230	227.	227.	225	....	....
	1200						
	1800						
1 1/2	900	115-230	\$62.	\$62.	203	\$2.00	....
	1200		80.	80.	204	....	\$3.00
	1800		102.	102.	224	....	3.00
2	900		129.	129.	225	....	....
	1200						
	1800						

\*Motors for 110 and 220 volts are available at same prices corresponding to motors for 115 and 230 volts. †An automatic-reset, thermal-overload device used as a line-interrupting switch. The usual short circuit protection is also required in accordance with the National Electrical Code.

### G-E Type SCR Integral-Horsepower Single-Phase Repulsion-Induction Motors

Open, Horizontal, Constant-Speed, 60 Cycles  
40°C. Rise, Continuous



The Type SCR motor combines the high starting torque of a repulsion motor with the excellent speed characteristics of an induction motor. It is available in ratings which supplement those of the Types KC and KCJ capacitor motors. Some of the many applications for which it is well adapted include refrigerating machines, pumps, stokers, floor surfacers, and dairy machinery.

Hp.	Sync. Speed RPM.	Volts	Motor Only		
			Sleeve Bearing Each	Ball Box Inj Each	Frame
1	900	115-230	\$165.00	\$165.00	254
1 1/2	900		209.00	209.00	254
2	1200		189.00	189.00	254
3	900		248.00	248.00	255
	1200		228.00	228.00	255
5	900		315.00	315.00	324
	1800	230-460	189.00	189.00	254
7 1/2	1200		266.00	266.00	324
	900		440.00	440.00	326
10	3600		287.00	287.00	...
	1800		266.00	266.00	324
	1200		378.00	378.00	326
	3600		....	390.00	326
	1800		353.00	353.00	326

### G-E Type KH Split-Phase Fractional-Horsepower Industrial Motors

Single-Phase, Dripproof, General-Purpose  
Sleeve-Bearing, Resilient Base

60 Cycles, 40°C. Rise, Continuous, Constant-Speed



Type KH resilient-base motors are recommended where long-lived, inexpensive motors with moderate starting torque are required and where quietness and freedom from vibration resulting from the resilient base are desirable. The resilient base also offers a convenient means for side-wall mounting of the motor.

Frames 43 to 49 are available with automatic-reset Thermo-Tector at slight price addition.

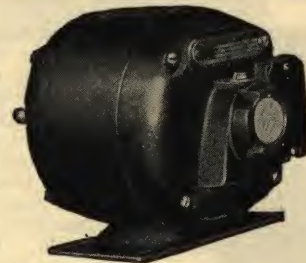
Hp.	Speed RPM.	115 Volts	
		Model No.	*Each
1/20	1725	KH23AC3	\$14.25
	1140	KH33FD17	17.25
1/12	1725	KH23AC27	21.55
	1140	KH31FD8	14.25
1/6	1725	KH43AB837	14.25
	1140	KH47AB55	22.55
1/4	1725	KH45AB1738	16.15
1/3	3450	KH47EB58	23.75
	1725	KH45AB2235	20.25

\*Prices for motors rated 230 volts, or 50 or 25 cycles furnished on request.

### G-E Type KH Split-Phase Fractional-Horsepower Industrial Motors

Single-Phase, Dripproof, General-Purpose  
Sleeve-Bearing, Solid Base

60 Cycles, 40°C. Rise, Continuous, Constant-Speed



Type KH motors are recommended where long-lived, inexpensive motors with moderate starting torque are required. They are ideal for use on belt-driven fans and blowers, office devices, centrifugal pumps, and miscellaneous devices where motors with high starting torque are unnecessary.

Frames 43 to 49 are available with automatic-reset Thermo-Tector at slight price addition.

Hp.	Speed RPM.	115 Volts	
		Model No.	*Each
1/20	1725	KH23AC1	\$13.35
	1140	KH33KD16	16.35
1/12	1725	KH23AC25	20.65
	1140	KH31FD4	13.35
1/6	1725	KH43AB835	13.35
	1140	KH47AB14	21.65
1/4	1725	KH45AB1736	15.25
1/3	3450	KH47EB34	22.85
	1725	KH45AB2233	19.35

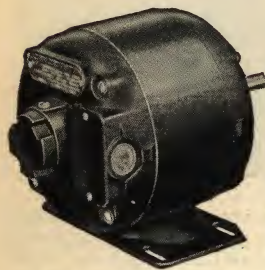
\*Prices for motors rated 230 volts, or 50 or 25 cycles furnished on request.



### G-E Type K Fractional-Horsepower Industrial Motors

3-Phase, Totally Enclosed, Ball Bearing, Solid Base

60 Cycles, 55°C. Rise, Continuous, Constant-Speed



Type K totally enclosed motors with steel base and ball bearings are for general application and have a wide field of use where long life, ability to withstand end thrust, and protection from dirty atmospheric conditions are necessary. They will start and drive any device which can be operated by single-phase motors of corresponding strength.

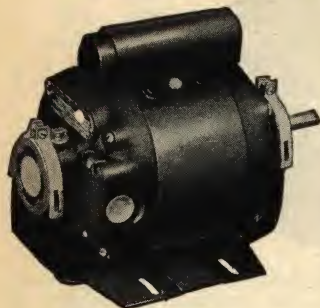
Hp.	Speed RPM.	208-220 Volts		440 Volts	
		Model No.	*Each	Model No.	*Each
1/6	1725	K43AC1563	\$29.70	K43AC1620	\$32.25
1/4	1725	K43AC516	29.70	K43AC964	32.25
	1140	K45AC540	40.95	K45AC537	44.65
1/3	3450	K47EC41	32.80	K47EC42	35.70
	1725	K45AC506	32.90	K45AC417	35.80
	1140	K63AC3333	47.80	K63AC3333	47.80
1/2	3450	K49BC790	40.85	K49BC756	44.55
	1725	K63AC3330	40.50	K63AC3330	40.50
	1140	K73DC2686	56.55	K73DC2686	56.55
3/4	3450	K67BC1433	49.70	K67BC1433	49.70
	1725	K73DC2654	50.75	K73DC2654	50.75
1	3450	K77BC658	61.50	K77BC658	61.50

\*Prices for motors rated 220 or 440 volts, or 50 or 60 cycles, furnished on request.

### G-E Type KC Capacitor-Start Fractional-Horsepower Industrial Motors

Single-Phase, Dripproof, General-Purpose Sleeve-Bearing, Resilient Base

60 Cycles, 40°C. Rise, Continuous, Constant-Speed



These motors are designed for high starting and pull-up torque. They are for use in general applications where dripproof sleeve-bearing motors are suitable and where quietness and freedom from vibration resulting from the resilient-base mounting are desirable. The resilient-base mounting also offers a convenient means of obtaining side-wall mounting of the motor.

Available with automatic-reset Thermo-Tector at slight price addition.

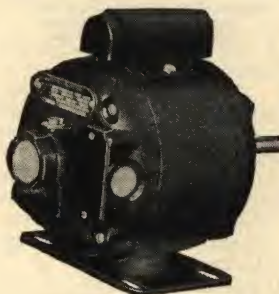
HP.	Speed RPM.	Volts	Model No.	*Each
1/6	1725	115	KC43AB282	\$16.25
1/4	1725	115	KC45AB1402	18.00
	1140	115	KC48AB202	33.40
	860	115-230	KC67AB343	47.50
1/3	3450	115-230	KC47EB15	25.95
	1725	115-230	KC47AB900	25.35
	1140	115-230	KC65AB568	39.90
	860	115-230	KC77AB481	58.95
1/2	3450	115-230	KC49BB515	32.95
	1725	115-230	KC63AB692	36.70
	1140	115-230	KC67AB334	47.50
3/4	3440	115-230	KC67AB522	41.55
	1725	115-230	KC65AB553	46.50
1	3450	115-230	KC67BB523	51.80

\*Prices for motors rated 230 volts, or 50 or 25 cycles furnished on request.

### G-E Type KC Capacitor-Start Fractional-Horsepower Industrial Motors

Single-Phase, Dripproof, General-Purpose Sleeve-Bearing, Solid Base

60 Cycles, 40°C. Rise, Continuous, Constant-Speed



These motors are designed for high starting and pull-up torque. They are for use in general applications where dripproof, sleeve-bearing motors are suitable, applications such as for water pumps, compressors, and industrial equipment operating in favorable ambient conditions.

Available with automatic-reset Thermo-Tector at slight price addition.

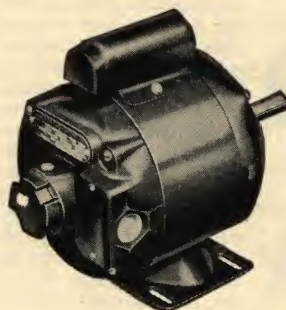
Hp.	Speed RPM.	Volts	Model No.	*Each
1/6	1725	115	KC43AB280	\$15.35
1/4	1725	115	KC45AB1400	17.10
	1140	115	KC48AB201	32.50
1/3	3450	115-230	KC47EB2	25.05
	1725	115-230	KC47AB899	24.45
	1140	115-230	KC65AB566	38.10
1/2	3450	115-230	KC49BB514	32.05
	1725	115-230	KC63AB666	34.90
	1140	115-230	KC67AB333	45.70
3/4	3450	115-230	KC67BB520	39.75
	1725	115-230	KC65AB554	44.70
1	3450	115-230	KC67BB521	50.00

\*Prices for motors rated 230 volts, or 50 or 25 cycles, and prices for d.c. motors (Type BC), furnished on request.

### G-E Type KC Capacitor-Start Fractional-Horsepower Industrial Motors

Single-Phase, Totally Enclosed, Ball Bearing, Solid Base

60 Cycles, 55°C. Rise, Continuous, Constant-Speed



These motors are designed for high starting and pull-up torque. They are for use in general applications where the added protection gained from totally enclosed construction is required or where end thrust conditions make ball bearings necessary.

Available with automatic-reset Thermo-Tector at slight price addition.

Hp.	Speed RPM.	Volts	Model No.	*Each
1/6	860	115	KC48AB215	\$41.40
1/6	1725	115	KC45AB1191	21.65
1/4	1725	115	KC47AB433	23.65
	1140	115	KC48AB207	41.40
	860	115-230	KC67AB344	56.55
1/3	3450	115-230	KC47EB19	32.80
	1725	115-230	KC49AB67	32.10
	1140	115-230	KC65AB570	47.80
	860	115-230	KC77AB483	69.70
1/2	3450	115-230	KC48BB41	40.85
	1725	115-230	KC65AB571	40.15
	1140	115-230	KC77AB482	56.55
3/4	3450	115-230	KC69BB84	49.70
	1725	115-230	KC75AB186	55.40
1	3450	115-230	KC78BB85	61.50

\*Prices for motors rated 230 volts, or 50 or 25 cycles, and prices for d.c. motors (Type BC), furnished on request.

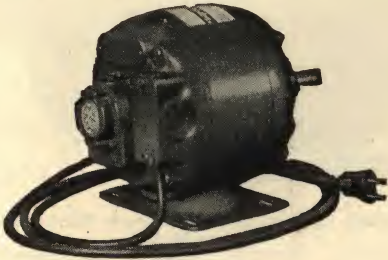


## G-E Fractional Horsepower Utility Motors

G-E utility motors are especially designed and manufactured to provide the casual purchaser with a high quality, low cost source of power for incidental use. Five ratings are available, giving good selection of motors for home workshop and similar uses where close motor application is not required. The motors are distinguished by an attractive blue-gray color and a large yellow nameplate particularly legible and distinctive.

### Model No. 1E152

¼ Hp.—1725 RPM.—115 Volts—60 Cycles Split-Phase

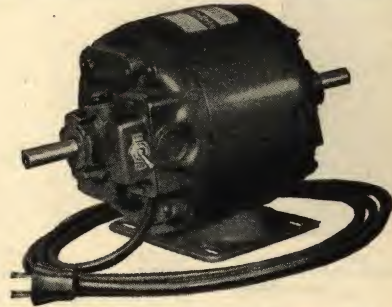


Sleeve bearings, solid base, dripproof. Shaft, 1½ inches long, ½ inch in diameter, with flat. Eight-foot rubber covered cord set with molded-on plug attached to motor.

Model No. 1E152.....each \$13.44

### Model No. 1E153

¼ Hp.—1725 RPM.—115 Volts—60 Cycles Split-Phase

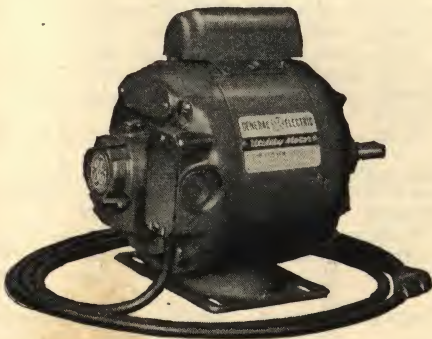


Sleeve bearings, solid base, dripproof. Manual-reset Thermo-Tector. Shaft, 1½ inches long, ½ inch in diameter, with flat, out each end of motor. Eight-foot rubber covered cord set with molded-on plug attached to motor. On-off switch mounted on motor end shield.

Model No. 1E153.....each \$21.66

### Model No. 1E154

½ Hp.—1725 RPM.—115 Volts—60 Cycles Capacitor-Start

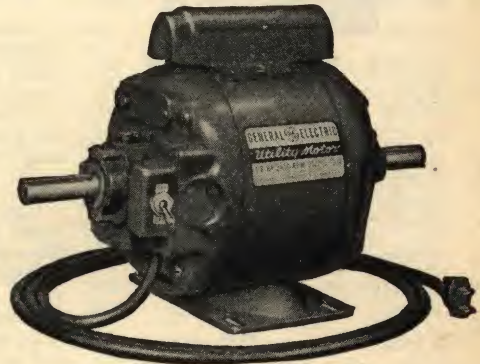


Sleeve bearings, solid base, dripproof. Shaft, 1½ inches long, ½ inch in diameter, with flat. Eight-foot rubber covered cord set with molded-on plug attached to motor.

Model No. 1E154.....each \$27.17

### Model No. 1E155

½ Hp.—3450 RPM.—115 Volts—60 Cycles Capacitor-Start



Sleeve bearings, solid base, dripproof. Manual-reset Thermo-Tector. Shaft, 1½ inches long, ½ inch in diameter, with key, out each end of motor. Eight-foot rubber covered cord set with molded-on plug attached to motor. On-off switch mounted on motor end shield.

Model No. 1E155.....each \$38.23



### Model No. 1E156

¾ Hp.—1750 RPM.—115 Volts—60 Cycles Capacitor-Start

Sleeve bearings, solid base, dripproof. Shaft, 1½ inches long, ½ inch in diameter, with key. Built-in conduit box on end shield with easily connected stud terminals.

Model No. 1E156.....each \$44.66



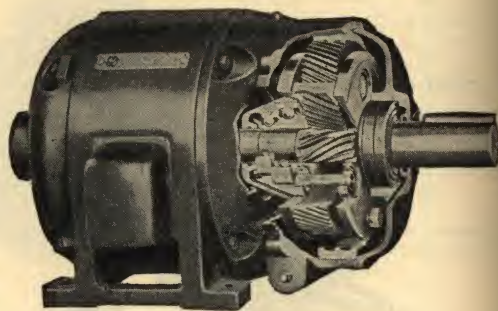
## G-E Gear-Motors

Fractional and Integral-Horsepower Sizes

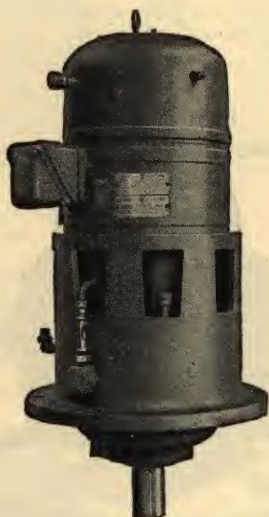
Polyphase, Single-Phase, and D.C. Types



Fractional-Hp. Capacitor-Type Gear-Motor



Cutaway View of Concentric-Shaft, Planetary-Type Gear Motor



Vertical Gear-Motor of Totally Enclosed, Fan-Cooled Induction Design

G-E gear motors are the most economical means of obtaining a dependable source of power for operation of many types of machines. The gear-motor consists of a normal-speed motor in combination with a built-in reduction gear. The combination results in an integral, self-contained unit that is highly efficient, extremely compact, and sturdily built.

General Electric offers a complete line of gear-motors in ratings from  $\frac{1}{8}$  horsepower up. A wide selection of output-shaft speeds is available, ranging from 780 to 5.7 rpm. with standard 1800-rpm. motors. Three basic gear systems are used as follows: (1) Offset shaft, for speeds of 780 to 520 rpm., (2) Planetary, for speeds of 520 to 13.5 rpm., and (3) Right-angle worm, for speeds of 197 to 5.7 rpm.

Gear-motors have a higher operating efficiency than any other type of low-speed drive of comparable installation cost. The motor, running at 1800 rpm., operates at its maximum efficiency and power factor. The gear-type transmission prevents slippage. The motor and gear are closely connected, minimizing mechanical losses.

Gear motors save space. G-E gear-motors have a compact, balanced arrangement of parts and a housing of small physical proportions. They require only slightly more mounting space than a standard motor.

Gear-motors reduce maintenance costs. The inherent smoothness of operation and the sturdiness of G-E gear-motors permit them to operate dependably with little more attention than an infrequent change of lubricant. The simple design, careful workmanship, adequate lubrication, and ample factors of safety in all parts mean long, reliable service and freedom from production delays.

G-E gear-motors are unusually quiet. Gears running in oil and a balanced distribution of load between multiple gears eliminate the noises usually associated with geared speed reduction.

Gear-motors are easy to install and are safe to operate. The concentric output shaft of the planetary system and the gear-motor's similarity in physical proportions to a general-purpose motor contribute to low installation costs.

The elimination of the need for leveling bases and for providing safety devices for couplings and external chains, gears, or belts reduces installation costs and contributes toward safety.

Typical applications of gear-motors include the following:

Machine Tools  
Conveyors  
Agitators  
Fans  
Mixers  
Cooling Towers  
Compressors  
Pumps  
Steering Gears  
Winches, Davits  
Kilns  
Grinders

Car Pullers  
Blowers  
Screens  
Hoists  
Ball and Pebble Mills  
Textile Machinery  
Steel Mills  
Elevators  
Line Shafts  
Valves, Gates  
Rolls  
Sewage Equipment



**Type BC—D.C.—115 Volts**

Rated Motor Hp.	Full-Load Output			Open, Horizontal			Add for Vertical Flange-Mounted Open	Rated Motor Hp.	Full-Load Output			Open, Horizontal			Add for Vertical Flange-Mounted Open	
	Nom. Speed RPM.	Torque in Lb.-In.	Type KH Each	Type K Each	Type BC Each	Nom. Speed RPM.			Torque in Lb.-In.	Type KC Each	Type K Each	Type BC Each				
Gear-Motor Frame.....				045120	043120	042120		Gear-Motor Frame.....				047428	045428	046428		
1/6	520	19	\$50.00	\$55.50	\$63.65	\$10.00		1/3	56	314	\$103.00	\$103.70	\$116.65	\$21.00		
	420	23	52.00	57.50	65.65	10.00			45	394	110.00	110.70	123.65	22.00		
	350	28	54.00	59.50	67.65	11.00			37	477	118.00	118.70	131.65	24.00		
	280	35	57.00	62.50	70.65	11.00			30	593	127.00	127.70	140.65	25.00		
	230	42	60.00	65.50	73.65	12.00			25	703	135.00	135.70	148.65	27.00		
	190	51	62.00	67.50	75.65	12.00		Gear-Motor Frame.....				047332	045332	046332		
	155	63	65.00	70.50	78.65	13.00		Capacitor Case.....				105				
Gear-Motor Frame.....				045220	043220	042220		1/3	20	878	\$147.00	\$147.70	\$160.65	\$29.00		
1/6	125	73	\$69.00	\$74.50	\$82.65	\$14.00			16.5	1080	157.00	157.70	170.65	31.00		
	100	94	72.00	77.50	85.65	14.00			13.5	1325	169.00	169.70	182.65	34.00		
	84	111	75.00	80.50	88.65	15.00		Gear-Motor Frame.....				063128	063128	066128		
	68	138	79.00	84.50	92.65	16.00		Capacitor Case.....				110				
Gear-Motor Frame.....				045428	043428	042428		1/2	520	58	\$77.00	\$73.85	\$89.35	\$15.00		
1/6	56	154	\$84.00	\$89.50	\$97.65	\$17.00			420	71	80.00	76.85	92.35	16.00		
	45	193	89.00	94.50	102.65	18.00			350	86	83.00	79.85	95.35	17.00		
	37	234	94.00	99.50	107.65	19.00			280	108	86.00	82.85	98.35	17.00		
	30	292	101.00	106.50	114.65	20.00			230	131	90.00	86.85	102.35	18.00		
	25	346	108.00	113.50	121.65	21.00			190	159	93.00	89.85	105.35	19.00		
									155	194	97.00	93.85	109.35	19.00		
Gear-Motor Frame.....				045428	043428	042428		Gear-Motor Frame.....				063228	063228	066228		
1/6	20	432	\$119.00	\$124.50	\$132.65	\$24.00		Capacitor Case.....				110				
	16.5	530	129.00	134.50	142.65	26.00		1/2	125	229	\$101.00	\$97.85	\$113.35	\$20.00		
	13.5	650	140.00	145.50	153.65	28.00			100	281	106.00	102.85	118.35	21.00		
Gear-Motor Frame.....				Type KC	047120	043120	044120			84	335	110.00	106.85	122.35	22.00	
1/4	520	28	\$55.00	\$58.75	\$69.95	\$11.00			68	417	115.00	111.85	127.35	23.00		
	420	35	57.00	60.75	71.95	12.00		Gear-Motor Frame.....				063428	063428	066428		
	350	43	59.00	62.75	73.95	12.00		Capacitor Case.....				110				
	280	53	62.00	65.75	76.95	13.00		1/2	56	477	\$121.00	\$117.85	\$133.35	\$24.00		
	230	64	65.00	68.75	79.95	13.00			45	530	129.00	125.85	141.35	26.00		
	190	78	68.00	71.75	82.95	14.00			37	723	137.00	133.85	149.35	27.00		
	155	96	71.00	74.75	85.95	14.00		Gear-Motor Frame.....				063332	063332	066332		
Gear-Motor Frame.....				047220	043220	044220		Capacitor Case.....				110				
1/4	125	112	\$74.00	\$77.75	\$88.95	\$15.00		1/2	30	900	\$147.00	\$143.85	\$159.35	\$29.00		
	100	140	78.00	81.75	92.95	16.00			25	1070	156.00	152.85	168.35	31.00		
	84	165	82.00	85.75	96.95	16.00			20	1330	170.00	166.85	182.35	34.00		
	68	207	87.00	90.75	101.95	17.00		Gear-Motor Frame.....				063336	063336	066336		
Gear-Motor Frame.....				047428	043428	044428		Capacitor Case.....				110				
1/4	56	235	\$91.00	\$94.75	\$105.95	\$18.00		3/4	520	88	\$93.00	\$88.95	\$110.80	\$19.00		
	45	295	98.00	101.75	112.95	20.00			420	108	97.00	92.95	114.80	19.00		
	37	356	105.00	108.75	119.95	21.00			350	130	100.00	95.95	117.80	20.00		
	30	445	113.00	116.75	127.95	23.00			280	162	104.00	99.95	121.80	21.00		
	25	527	121.00	124.75	135.95	24.00			230	197	107.00	102.95	124.80	21.00		
	20	657	133.00	136.75	147.95	27.00			190	240	111.00	106.95	128.80	22.00		
									155	294	115.00	110.95	132.80	23.00		
Gear-Motor Frame.....				047332	043332	044332		Gear-Motor Frame.....				073228	073228	074228		
1/4	16.5	807	\$144.00	\$147.75	\$158.95	\$29.00		Capacitor Case.....				110				
	13.5	992	157.00	160.75	171.95	31.00		3/4	125	350	\$120.00	\$115.95	\$137.80	\$24.00		
Gear-Motor Frame.....				047120	045120	046120			100	432	126.00	121.95	143.80	25.00		
1/3	520	38	\$62.00	\$62.70	\$75.65	\$12.00			84	514	131.00	126.95	148.80	26.00		
	420	47	65.00	65.70	78.65	13.00			68	640	138.00	133.95	155.80	28.00		
	350	57	67.00	67.70	80.65	13.00		Gear-Motor Frame.....				073332	073332	074332		
	280	70	71.00	71.70	84.65	14.00		Capacitor Case.....				110				
	230	86	74.00	74.70	87.65	15.00		3/4	56	756	\$145.00	\$140.95	\$162.80	\$29.00		
	190	104	77.00	77.70	90.65	15.00			45	950	155.00	150.95	172.80	31.00		
	155	127	80.00	80.70	93.65	16.00			37	1150	165.00	160.95	182.80	33.00		
Gear-Motor Frame.....				047220	045220	046220			30	1425	176.00	171.95	193.80	35.00		
1/3	125	144	\$84.00	\$84.70	\$97.65	\$17.00		Gear-Motor Frame.....				073336	073336	074336		
	100	181	88.00	88.70	101.65	18.00		Capacitor Case.....				110				
	84	212	92.00	92.70	105.65	18.00		3/4	25	1700	\$187.00	\$182.95	\$204.80	\$37.00		
	68	266	97.00	97.70	110.65	19.00			20	2130	201.00	196.95	218.80	40.00		
								Gear-Motor Frame.....				073340	073340	074340		
								Capacitor Case.....				110				
								3/4	16.5	2580	\$214.00	\$209.95	\$231.80	\$43.00		
									13.5	3210	228.00	223.95	245.80	46.00		



## G-E Integral-Horsepower Gear-Motors

## Concentric-Shaft—Planetary Gear-Reduction

Type K—Normal Torque—Normal Starting Current—Squirrel-Cage—2 and 3-Phase—60 Cycles—220, 440, or 550 Volts  
 Type KC—Single-Phase—Capacitor-Type—115-230 Volts  
 Type B—D.C.—Shunt-Wound—115-230 Volts

The listed integral-horsepower gear-motors are for Class I service, which in accordance with recommendations of the American Gear Manufacturers' Association, is for steady loads not exceeding the normal rating

of the motor and eight hours service per day, or for moderate shock loads where the service is intermittent.

## 1 Hp., Continuous

*Gear-Motor Frame No.	Nom. Full Load Speed RPM.	Horizontal					Vertical Shaft Down Only	
		Totally Enclosed Fan-Cooled		Type K		Type K	Type K	
		Type K	Open Type KC	Type B	Stand- ard Each	Explo- sion Proof Each	Open Each	Fan- Cooled Each
203A928	780	\$107.	\$118.	\$168.	\$127.	\$148.	.....	.....
203A928	640	108.	119.	169.	128.	149.	.....	.....
203A928	520	110.	121.	171.	130.	151.	.....	.....
203A128	420	111.	122.	172.	131.	152.	\$136.	\$156.
203A128	350	114.	125.	175.	134.	155.	139.	159.
203A128	280	116.	127.	177.	137.	158.	143.	164.
203A128	230	120.	131.	181.	141.	162.	147.	168.
203A132	190	124.	135.	185.	145.	166.	152.	173.
203A132	155	130.	141.	191.	152.	173.	159.	181.
203A232	125	136.	147.	197.	159.	180.	167.	190.
203A232	100	148.	159.	209.	172.	193.	182.	206.
203A232	84	151.	162.	212.	175.	196.	184.	208.
203A232	68	159.	170.	220.	184.	205.	194.	219.
203A336	56	168.	179.	229.	194.	215.	206.	232.
203A336	45	180.	191.	241.	207.	228.	219.	246.
203A336	37	191.	202.	252.	219.	240.	232.	260.
203A336	30	204.	215.	265.	233.	254.	248.	277.
203A340	25	218.	229.	279.	249.	270.	270.	301.
203A340	20	234.	245.	295.	266.	287.	288.	320.
203A344	16.5	251.	262.	312.	285.	306.	310.	344.
203A344	13.5	268.	279.	329.	304.	325.	331.	367.

## 1½ Hp., Continuous

*Gear-Motor Frame No.	Nom. Full Load Speed RPM.	Horizontal					Vertical Shaft Down Only	
		Totally Enclosed Fan-Cooled		Type K		Type K	Type K	
		Type K	Open Type KC	Type B	Stand- ard Each	Explo- sion Proof Each	Open Each	Fan- Cooled Each
204A928	780	\$125.	\$145.	\$192.	\$148.	\$171.	.....	.....
204A928	640	128.	148.	195.	151.	174.	.....	.....
204A928	520	131.	151.	198.	154.	177.	.....	.....
204A128	420	135.	155.	202.	159.	182.	\$163.	\$187.
204A128	350	137.	157.	204.	161.	184.	167.	191.
204A132	280	141.	161.	208.	165.	188.	171.	195.
204A132	230	149.	169.	216.	174.	197.	180.	205.
204A136	190	152.	172.	219.	177.	200.	184.	209.
204A136	155	159.	179.	226.	185.	208.	192.	218.
204A236	125	167.	187.	234.	194.	217.	201.	228.
204A236	100	177.	197.	244.	205.	228.	215.	243.
204A236	84	185.	205.	252.	214.	237.	224.	253.
204A236	68	191.	211.	258.	220.	243.	231.	260.
204A336	56	208.	228.	275.	239.	262.	251.	282.
204A336	45	216.	236.	283.	248.	271.	260.	292.
204A336	37	231.	251.	298.	264.	287.	279.	312.
204A340	30	247.	267.	314.	282.	305.	303.	338.
204A344	25	263.	283.	330.	299.	322.	321.	357.
204A344	20	283.	303.	350.	321.	344.	345.	383.
204A348	16.5	304.	324.	371.	344.	367.	381.	421.
204A348	13.5	323.	343.	390.	365.	388.	403.	445.

## 2 Hp., Continuous

*Gear-Motor Frame No.	Nom. Full Load Speed RPM.	Horizontal					Vertical Shaft Down Only	
		Totally Enclosed Fan-Cooled		Type K		Type K	Type K	
		Type K	Open Type KC	Type B	Stand- ard Each	Explo- sion Proof Each	Open Each	Fan- Cooled Each
224A936	780	\$145.	\$178.	\$218.	\$185.	\$206.	.....	.....
224A936	640	148.	181.	221.	188.	209.	.....	.....
224A936	520	150.	183.	223.	190.	211.	.....	.....
224A132	420	153.	186.	226.	193.	214.	\$189.	\$229.
224A132	350	158.	191.	231.	199.	220.	194.	235.
224A136	280	164.	197.	237.	206.	227.	201.	243.
224A136	230	172.	205.	245.	214.	235.	210.	252.
224A140	190	176.	209.	249.	219.	240.	216.	259.
224A140	155	185.	218.	258.	229.	250.	225.	269.
224A240	125	194.	227.	267.	239.	260.	238.	283.
224A240	100	212.	245.	285.	258.	279.	258.	304.
224A240	84	216.	249.	289.	263.	284.	264.	311.
224A240	68	226.	259.	299.	274.	295.	277.	325.
224A340	56	240.	273.	313.	289.	310.	293.	342.
224A340	45	249.	282.	322.	299.	320.	304.	354.
224A340	37	266.	299.	339.	318.	339.	325.	377.
224A344	30	285.	318.	358.	339.	360.	346.	400.
224A348	25	302.	335.	375.	357.	378.	377.	432.
224A348	20	329.	362.	402.	387.	408.	409.	467.
224A352	16.5	353.	386.	426.	413.	434.	446.	506.
224A352	13.5	376.	409.	449.	439.	460.	473.	536.

\*Type K explosion-proof motors will be furnished in motor frames 204, 224, and 225 for 1, 1½, and 2 hp. respectively, instead of in the frames shown. For 1½-hp. Type K explosion-proof, use gear frames

## 3 Hp., Continuous

*Gear-Motor Frame No.	Nom. Full Load Speed RPM.	Horizontal					Vertical Shaft Down Only	
		Totally Enclosed Fan-Cooled		Type K		Type K	Type K	
		Type K	Open Type KC	Type B	Stand- ard Each	Explo- sion Proof Each	Open Each	Fan- Cooled Each
225A936	780	\$168.	\$220.	\$265.	\$207.	\$230.	.....	.....
225A936	640	170.	222.	267.	209.	232.	.....	.....
225A936	520	173.	225.	270.	213.	236.	.....	.....
225A136	420	176.	228.	273.	216.	239.	\$214.	\$254.
225A136	350	178.	230.	275.	218.	241.	217.	258.
225A140	280	182.	234.	279.	223.	246.	226.	263.
225A140	230	192.	244.	289.	234.	257.	233.	275.
225A144	190	194.	246.	291.	236.	259.	237.	278.
225A144	155	206.	258.	303.	249.	272.	250.	294.
225A244	125	220.	272.	317.	264.	287.	266.	311.
225A244	100	234.	286.	331.	280.	303.	285.	331.
225A244	84	246.	298.	343.	293.	316.	298.	346.
225A244	68	264.	316.	361.	313.	336.	320.	368.
225A344	56	280.	332.	377.	330.	353.	338.	388.
225A344	45	300.	352.	397.	352.	375.	362.	415.
225A344	37	320.	372.	417.	374.	397.	386.	440.
225A348	30	344.	396.	441.	401.	424.	425.	482.
225A352	25	364.	416.	461.	423.	446.	457.	516.
225A352	20	393.	445.	490.	455.	478.	490.	554.
225A356	16.5	426.	478.	523.	491.	514.	541.	606.
225A356	13.5	453.	505.	550.	521.	544.	573.	640.

## 5 Hp., Continuous

*Gear-Motor Frame No.	Nom. Full Load Speed RPM.	Horizontal					Vertical Shaft Down Only	
		Totally Enclosed Fan-Cooled		Type K		Type K	Type K	
		Type K	Open Type KC	Type B	Stand- ard Each	Explo- sion Proof Each	Open Each	Fan- Cooled Each
254A940	780	\$207.	\$212.	\$392.	\$255.	\$284.	.....	.....
254A940	640	209.	214.	394.	257.	286.	.....	.....
254A940	520	213.	218.	398.	261.	290.	.....	.....
254A140	420	217.	222.	402.	266.	295.	\$271.	\$320.
254A140	350	221.	226.	406.	270.	299.	275.	324.
254A144	280	225.	230.	410.	274.	303.	280.	329.
254A144	230	231.	236.	416.	281.	310.	287.	337.
254A148	190	241.	246.	426.	292.	321.	299.	350.
254A148	155	256.	261.	441.	308.	337.	317.	369.
254A248	125	272.	277.	457.	326.	355.	336.	390.
254A248	100	292.	297.	477.	348.	377.	360.	416.
254A248	84	308.	313.	493.	366.	395.	379.	437.
254A248	68	327.	332.	512.	387.	416.	401.	461.
254A348	56	348.	353.	533.	410.	439.	427.	489.
254A348	45	375.	380.	560.	439.	468.	459.	523.
254A348	37	399.	404.	584.	466.	495.	488.	555.
254A352	30	428.	433.	613.	498.	527.	531.	601.
254A356	25	459.	464.	644.	532.	561.	577.	650.
254A356	20	479.	484.	664.	554.	583.	601.	676.
254A360	16.5	535.	540.	720.	615.	644.	668.	748.
254A360	13.5	559.	564.	744.	642.	671.	697.	780.

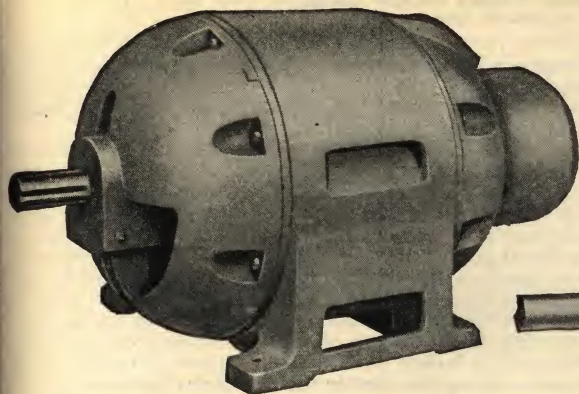
## 7½ Hp., Continuous

284A944	780	\$261.	\$267.	\$476.	\$326.	\$357.	.....	.....
284A944	640	265.	271.	480.	331.	362.	.....	.....
284A944	520	271.	277.	486.	337.	368.	.....	.....
284A144	420	277.	283.	492.	344.	375.	\$345.	\$412.
284A144	350	283.	289.	498.	350.	381.	351.	418.
284A148	280	288.	294.	503.	356.	387.	357.	425.
284A148	230	293.	299.	508.	361.	392.	364.	432.
284A152	190	307.	313.	522.	377.	408.	380.	450.
284A152	155	327.	333.	542.	399.	430.	404.	476.
284A252	125	347.	353.	562.	421.	452.	428.	502.
284A252	100	373.	379.	588.	449.	480.	460.	536.
284A252	84	392.	398.	607.	470.	501.	483.	561.
284A252	68	409.	415.	624.	489.	520.	503.	583.
284A352	56	444.	450.	659.	527.	558.	545.	628.
284A352	45	476.	482.	691.	563.	594.	583.	670.
284A352	37	507.	515.	722.	597.	628.	620.	710.
284A356	30	536.	542.	751.	629.	660.	664.	757.
284A360	25	584.	590.	799.	681.	712.	723.	820.
284A360	20	607.	613.	822.	707.	738.	749.	849.
284A364	16.5	680.	686.	895.	787.	818.	855.	962.
284A364	13.5	697.	703.	912.	806.	837.	876.	988.



## G-E General-Purpose Synchronous Motors

Type TS, 3-Phase—Type QS, 2-Phase

High-Speed—Open—Horizontal—2 Bearing—60 Cycles  
40°C. Rise—Continuous

Tri-Clad Synchronous Motor with Direct-Connected Exciter

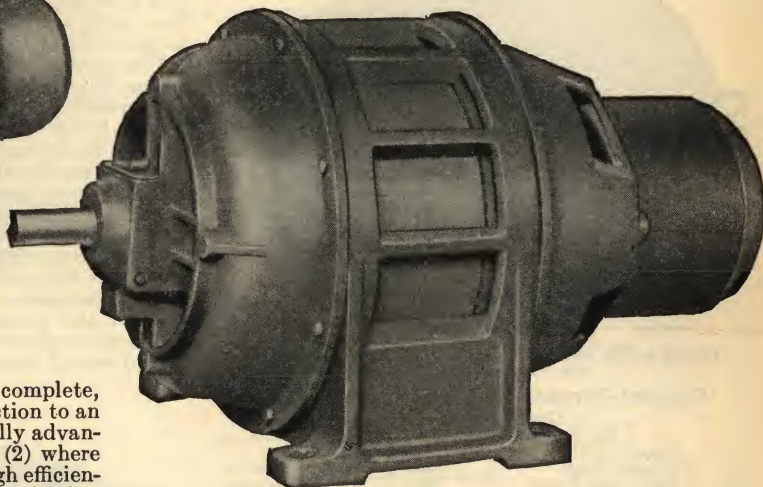
G-E general-purpose synchronous motors make complete, compact power units which simply require connection to an a.c. power supply for operation. They are especially advantageous where (1) good power factor is desired, (2) where power-factor improvement is needed, (3) where high efficiency is sought (in the case of steady, continuous loads of 75 hp. and larger), or (4) where exact speeds must be maintained. These motors have a mechanical simplicity comparable to that of squirrel-cage motors. Where direct-connected exciters are used, the exciter forms an integral part of the motor structure and saves both space and installation cost over other types.

The well known Tri-Clad construction is available in many commonly used ratings. (See price listings.) This

Hp.	Speed RPM.	Volts	1.0 Power Factor Sleeve Bearings			0.8 Power Factor Sleeve Bearings		
			*Motor Only Each	Direct- Connected Exciter Each	Frame	*Motor Only Each	Direct- Connected Exciter Each	Frame
20	1200	220, 440, 550	934S	\$728.	\$181.	934	\$766.	\$203.
		2300	...	...	...	934	804.	203.
25	1200	220, 440, 550	934	766.	181.	934	800.	203.
		2300	934	804.	181.	934	840.	203.
	900	220, 440, 550	...	...	...	944	871.	345.
		2300	...	...	...	944	915.	345.
30	1200	220, 440, 550	934	800.	181.	935	858.	203.
		2300	934	840.	181.	935	901.	203.
	900	220, 440, 550	944	871.	312.	944	944.	345.
		2300	944	915.	312.	944	991.	345.
	720	220, 440, 550	...	...	...	953	1118.	393.
		2300	...	...	...	953	1174.	393.
40	1800	220, 440, 550	†934S	1326.	157.	†934	1385.	157.
		2300	†934S	1392.	157.	†944	1454.	157.
	1200	220, 440, 550	935	858.	203.	944	923.	237.
		2300	935	901.	203.	944	969.	237.
	900	220, 440, 550	944	944.	312.	945	1027.	345.
		2300	944	991.	312.	945	1078.	345.
	720	220, 440, 550	953	1118.	360.	953	1203.	393.
		2300	953	1174.	360.	953	1263.	393.
	600	220, 440, 550	...	...	...	954	1417.	495.
		2300	...	...	...	954	1488.	495.
50	1800	220, 440, 550	†934S	1385.	157.	†935S	1458.	174.
		2300	†934S	1454.	157.	†935S	1513.	174.
	1200	220, 440, 550	944	923.	203.	945	988.	237.
		2300	944	969.	203.	945	1037.	237.
	900	220, 440, 550	945	1027.	312.	953	1092.	345.
		2300	945	1078.	312.	953	1147.	345.
	720	220, 440, 550	953	1203.	393.	954	1287.	441.
		2300	953	1263.	393.	954	1351.	441.
	600	220, 440, 550	954	1417.	451.	955	1495.	495.
		2300	954	1488.	451.	955	1570.	495.
60	1800	220, 440, 550	†935S	1458.	157.	†944S	1554.	174.
		2300	†935S	1513.	157.	†944S	1554.	174.
	1200	220, 440, 550	945	988.	203.	945	1073.	237.
		2300	945	1037.	203.	945	1073.	237.
	900	220, 440, 550	953	1092.	345.	954	1203.	394.
		2300	953	1147.	345.	954	1203.	394.
	720	220, 440, 550	954	1287.	393.	955	1391.	441.
		2300	954	1351.	393.	955	1391.	441.
	600	220, 440, 550	954	1495.	451.	963	1625.	495.
		2300	954	1570.	451.	963	1625.	495.

\*Motor with shaft and two bearings.

†Tri-Clad (drip-proof).



Synchronous Motor with Exciter, Typical of Skeleton-Frame Construction

construction offers the benefits of smooth contours, attractive appearance, and extra physical protection to the synchronous motor line.

G-E synchronous motors are particularly suited for driving centrifugal pumps, centrifugal compressors, belt-driven reciprocating compressors, fans, blowers, line shafts, d.c. generators, rubber and paper mills, and the like.

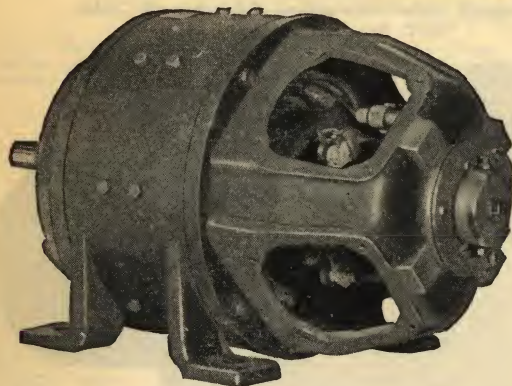
Hp.	Speed RPM.	Volts	1.0 Power Factor Sleeve Bearings			0.8 Power Factor Sleeve Bearings		
			*Motor Only Each	Direct- Connected Exciter Each	Frame	*Motor Only Each	Direct- Connected Exciter Each	Frame
75	1800	220, 440, 550, 2300	†944S	\$1554.	\$157.	†945S	\$1712.	\$174.
		2300	945	1073.	203.	953	1216.	237.
	1200	220, 440, 550, 2300	945	1073.	203.	953	1216.	237.
		2300	945	1073.	203.	953	1216.	237.
	900	220, 440, 550, 2300	954	1203.	345.	954	1359.	394.
		2300	954	1203.	345.	954	1359.	394.
	720	220, 440, 550, 2300	955	1391.	393.	963	1567.	441.
		2300	955	1391.	393.	963	1567.	441.
	600	220, 440, 550, 2300	963	1625.	495.	963	1794.	582.
		2300	963	1625.	495.	963	1794.	582.
100	1800	220, 440, 550, 2300	†945S	1712.	174.	†953S	1862.	174.
		2300	†953S	1216.	237.	†954S	1359.	345.
	1200	220, 440, 550, 2300	954	1359.	345.	955	1521.	394.
		2300	954	1359.	345.	955	1521.	394.
	900	220, 440, 550, 2300	963	1567.	393.	963	1723.	524.
		2300	963	1567.	393.	963	1723.	524.
	720	220, 440, 550, 2300	963	1794.	495.	964	1950.	582.
		2300	963	1794.	495.	964	1950.	582.
	600	220, 440, 550, 2300	964	2048.	567.	972	2210.	662.
		2300	964	2048.	567.	972	2210.	662.
125	1800	220, 440, 550, 2300	†953S	1862.	174.	†954S	2014.	199.
		2300	†954S	1359.	237.	†955S	1508.	345.
	1200	220, 440, 550, 2300	955	1521.	345.	963	1664.	449.
		2300	963	1723.	441.	964	1872.	524.
	900	220, 440, 550, 2300	963	1950.	495.	965	2100.	582.
		2300	963	1950.	495.	965	2100.	582.
	720	220, 440, 550, 2300	972	2210.	567.	973	2360.	797.
		2300	972	2210.	567.	973	2360.	797.
150	1800	220, 440, 550, 2300	†954S	2014.	174.	†955S	2265.	199.
		2300	†955S	1508.	237.	†963S	1794.	345.
	1200	220, 440, 550, 2300	†963S	1664.	394.	†964S	1944.	449.
		2300	†964S	1872.	441.	†973	2152.	524.
	900	220, 440, 550, 2300	965	2100.	495.	972	2379.	582.
		2300	965	2100.	495.	972	2379.	582.
	720	220, 440, 550, 2300	973	2360.	662.	974	2633.	797.
		2300	†955S	2265.	199.	...	...	...
	600	220, 440, 550, 2300	†963S	1794.	237.	...	...	...
		2300	†964S	1944.	394.	...	...	...
	514	220, 440, 550, 2300	965	2152.	524.	...	...	...
		2300	972	2379.	582.	...	...	...
		2300	†974S	2633.	662.	...	...	...

†May be used for V-belt drive if ordered with standard long shaft.



### G-E Direct-Current Motors

Type B, Frames 204 to 284—Type CD, Frames 66 and Larger  
Open—Horizontal—Constant and Adjustable Speed



Type B or CD Motor, Typical of Frames 204 to 284 and Frames 66 to 95

Their flexibility permits close matching of motor speed to the driven load. Choices of speed and torque characteristic provide a selection of motors tailored to suit the application requirements—whether they be for heavy-starting duty, for widely varying speed, or subject to speed change with change of load.

Use constant-speed motors (1) where the power supply is d.c., (2) where it is desirable to obtain a large variety of accurately controllable speeds over speed ranges less than 3:1 from a constant voltage source, or (3) where an adjustable-voltage system is used for speed control from near zero speed to maximum. Typical applications include centrifugal pumps, fans, blowers, etc. Use adjustable-speed motors where speed ranges of 3:1 or greater are required by field control. Adjustable-speed motors of constant horse-power, continuous rating are suitable for such applications as driving metal, paper and textile winding reels. Motors of constant horse-power, one-hour rating are selected for lathes, planers, etc. Motors of tapered horse-power, continuous rating are used in driving centrifugal pumps, fans, blowers and paper making machines. Select shunt-wound motors for medium starting duty and close speed regulation. Select compound-wound motors for use where heavy starting torque is required.

#### General-Purpose—Constant Speed—Shunt or Compound-Wound

Hp. at 40°C.	Basic Full-Load Speed RPM.	Max. Speed by Field Control RPM.	Volts	MOTOR ONLY			
				Shunt-Wound	Ball Brg. Each	Add for Compound Winding	Frame
3/4	1150	2300		\$116.	\$116.	\$3.	203
1	1750	2199		112.	112.	3.	203
	1150	2300		131.	131.	3.	204
1 1/2	1750	2190		127.	127.	3.	204
	1150	2300		151.	151.	5.	224
2	3500	....	115	156.	156.	5.	204
	1750	2190	230	142.	142.	3.	224
	1150	2300		176.	176.	5.	225
3	3500	....		186.	186.	5.	224
	1750	2190		174.	174.	5.	225
	1150	2300		267.	267.	8.	254
5	1750	2190		277.	277.	8.	254
	1150	2300		337.	337.	13.	284
7 1/2	1750	2190		335.	335.	13.	284
	1150	1725		410.	410.	13.	66
10	1750	2190		385.	385.	13.	66
	1150	1725		471.	471.	13.	67
15	1750	2190		469.	469.	13.	67
	1150	1725	115	576.	576.	21.	83
20	1750	2190	230	543.	543.	13.	83
	1150	1725		672.	672.	21.	85
	850	1700		777.	816.	39.	95
25	1750	2190		611.	611.	21.	85
	1150	1725		727.	763.	21.	93
	850	1700		891.	936.	39.	95
30	1750	1925		675.	675.	21.	85
	1150	1725		807.	847.	39.	95
	850	1700		993.	1043.	39.	1126
40	1750	1925	115	789.	828.	39.	93
			230	751.	789.	39.	93
	1150	1440	115	1014.	1065.	39.	95
			230	966.	1014.	39.	95
	850	1275	115	1245.	1307.	39.	1129
			230	1186.	1245.	39.	1129
50	1750	1925	115	958.	1006.	39.	*95
			230	913.	959.	39.	*95
	1150	1440	115	1174.	1233.	39.	1130
			230	1118.	1174.	39.	1128
	850	1275	115	1435.	1507.	51.	1135
			230	1366.	1434.	51.	1131
60	1750	1925		983.	1032.	39.	*96
	1150	1440		1271.	1335.	39.	1136
	850	1065		1541.	1618.	51.	1133
75	1750	1925		1162.	1220.	39.	1129S
	1150	1440		1485.	1559.	51.	1133
	850	1065		1776.	1865.	51.	1235
100	1150	1440		1827.	1918.	51.	1239S
	850	1065	230	2152.	2260.	51.	1341
125	1150	1325		2152.	2260.	51.	1242S
	850	1065		2512.	2638.	87.	1345
150	1150	1325		2465.	2588.	87.	1341S
	850	1065		2851.	2994.	87.	1444S
200	1150	1325		3069.	3222.	87.	1447S
	850	1065		3498.	3673.	105.	1549S
	690	865		4043.	4245.	121.	1556

\*Recommended for V-belt, but not for flat-belt drive.

#### Adjustable-Speed—Shunt-Wound

		115-230 Volts		SPEED, RPM.		Motor Only		Frame	
Tapered Cont. 40°C.	HORSEPOWER	Constant Cont. 40°C.	Basic 1 Hour Full- 50°C. Load	Maximum by Field Control 3:1 4:1 or Less	Sleeve Brg. Each	Ball Brg. Each			
1/2-3/4		1/2	3/4	850 575	2550 1725	3400 2300	\$138. 185.	\$138. 185.	204 225
3/4-1		3/4	1	850 575	2550 1725	3400 2300	151. 205.	151. 205.	224 225
1-1 1/2		1	1 1/2	850 690	2550 2070	3400 2760	166. 201.	166. 201.	225 225
				575	1725	2300	306.	306.	254
1 1/2-2		1 1/2	2	690 500	2070 1500	2760 2000	306. 360.	306. 360.	254 284
2-3		2	3	1150 690	3450 2070	.... 2760	194. 335.	194. 335.	226 284
230 Volts									
3-5		3	5	850 575	2550 1725	.... 2300	\$354. 441.	\$354. 441.	67 68
5-7 1/2		5	7 1/2	690 575	2070 1725	2300 2300	493. 559.	493. 559.	68 77
7 1/2-10		7 1/2	10	690 575	2070 1725	2300 2300	610. 684.	610. 684.	85 85
10-15		10	15	575 500	1725 1500	2300 2000	763. 835.	802. 877.	87 96
15-20		15	20	575 400	1725 1200	1800 1600	845. 1181.	886. 1240.	97 1129
20-25		20	25	500 300	1500 900	1800 1200	1155. 1696.	1213. 1780.	1129 1138
25-30		25	30	500 400	1500 1200	.... 1600	1312. 1600.	1377. 1680.	1131 1136
				300	900	1200	1913.	2009.	1235
30-40		30	40	500 400	1500 1200	.... 1600	1460. 1767.	1533. 1855.	1136 1236
				300	900	1200	2168.	2276.	1337
40-50		40	50	500 400	1500 1200	.... 1600	1749. 2092.	1836. 2196.	1138 1242
				300	900	1200	2563.	2691.	1441
50-60		50	60	500 400	1500 1200	.... ....	2009. 2391.	2110. 2511.	1238 1341
				300	900	1200	2930.	3076.	1445
60-75		60	75	500 300	1500 900	.... 1200	2256. 3243.	2369. 3406.	1341 1539
75-100		75	100	500 300	1500 900	.... 1200	2593. 3692.	2722. 3876.	1441 1543
100-125		100	125	400 300	1200 900	.... 1200	3631. 4363.	3812. 4582.	1543 1550
125-150		125	150	400 300	1200 900	.... 1200	4162. 4931.	4370. 5178.	1553 1645
150-200		150	200	400 300	1200 900	.... 1200	4581. 5500.	4810. 5774.	1645 1654
.....		200	...	400 300	1200 900	.... 1200	5507. 6516.	5783. 6842.	1657 1752

\*Tapered Horsepower: From basic speed up to 150 per cent basic speed, motor delivers minimum rated horsepower with temperature rise not exceeding 50°C. Above 150 per cent basic speed, temperature rise will not exceed 40°C.

Constant Horsepower: From basic speed up to 150 per cent basic speed, temperature rise will not exceed 50°C. Above 150 per cent basic speed, the temperature rise will not exceed 40°C.



# GENUINE G-E RENEWAL PARTS

Observe these few simple rules in ordering renewal parts, and you will save time, get the parts you need, and have your electric equipment back in first-class operating condition with little delay.

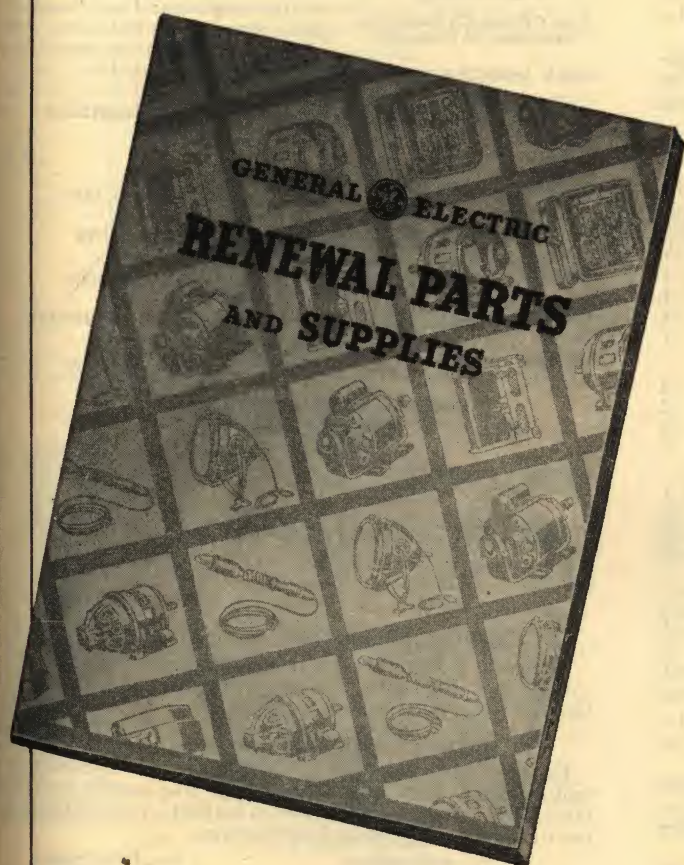
1. Give complete nameplate rating of apparatus requiring parts.
2. Give quantity of each part.

3. Give catalog number of each part, using the G-E renewal-parts catalog or bulletins.

4. Give exact description of each part.

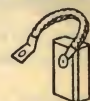
5. When immediate delivery is essential, telephone your order to us. The part you need is probably carried in stock.

If you do not have a copy of the General Electric renewal parts catalog, ask for one. It's free. It will help you to order parts quickly and correctly.

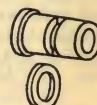


In addition to the items pictured, this catalog lists rubber mountings and capacitors for small G-E motors, parts for G-E industrial heating devices, street-lighting equipment, and floodlights; and gives data on supplies for G-E recording instruments, magnet wire, and testing instruments. Ask your nearby Graybar office or warehouse for a copy.

Motor Brushes



Motor Bearings and Oil Rings



Motor Centrifugal Mechanisms and Switches



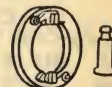
Motor Collectors



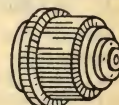
Motor Short-circuiting Devices



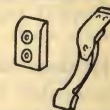
Motor Brush Holders and Brush-holder Parts



Motor Commutators and Segments



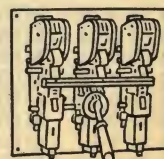
Control Contacts and Contact Parts



Control Coils



Air- and Oil-circuit-breaker Parts





**G-E CR1061 Motor Starting Switches****For Fractional-Hp. Motors—Manually Operated**

Maximum Ratings { A. C. { Single Pole, 1 Hp., 110 to 220 Volts  
 { Double Pole, 1 Hp., 110 to 220 Volts  
 { D. C. { Single Pole, 1 Hp., 115 to 230 Volts  
 { Double Pole, ¾ Hp., 115 to 230 Volts

Listed by Underwriters' Laboratories, Inc.

**For Wall Mounting**

This small, compact, hand-operated starting switch incorporates positive overload protection. It is designed for use with fractional-horsepower motors, and can be supplied for a.c. or d.c. circuits.

For flush-mounted type, order an open-type switch by nomenclature designation and number. For a single switch, order from a local dealer the following material: one flush plate—No. GE2316 Textolite or No. GE1701 brass; and one conduit box 2½ inches deep—No. SP6971 for rigid conduit and No. SP6972 for BX or flexible conduit. For gang mounting, specify flush plate and/or conduit box "similar to number" and state number of switches to be

included in gang.

For all other types, order switch by nomenclature designation and number. Order one heater for overload device by number. Select heater, from table at bottom of this column, in accordance with full-load motor current.

Example: 1 CR1061-C1A, motor starting switch  
 1 No. 81D70 heater

**Open Type—Also for Flush Mounting**

No.	*Each	Power Supply	No. of Poles	Nomenclature	Approx. Ship. Wt. Lb.
4983952	\$2.65	A.C.	1	CR1061-C1C	1
4983960	3.00	A.C.	2	CR1061-C2C	1
4983956	2.65	D.C.	1	CR1061-C1G	1
4983964	3.00	D.C.	2	CR1061-C2G	1

**Enclosed Type for Surface Wall Mounting**

4983950	\$3.15	A.C.	1	CR1061-C1A	2
4983958	3.50	A.C.	1	CR1061-C2A	2
4983954	3.15	D.C.	1	CR1061-C1E	2
4983962	3.50	D.C.	2	CR1061-C2E	2

**Dust-Tight and Weather-Resisting Type**

4988807A	\$10.50	A.C.	1	CR1061-F1A	1
4988807B	11.00	A.C.	2	CR1061-F1B	2
4988807C	10.50	D.C.	1	CR1061-F1C	1
4988807D	11.00	D.C.	2	CR1061-F1D	2

**Explosion-Proof Type**

For Class I, Group D, Hazardous Locations

4986903G1	\$13.00	A.C.	1	CR1061-B2A	1
4986903G2	13.50	A.C.	2	CR1061-B2B	2
4986903G3	13.00	D.C.	1	CR1061-B2C	1
4986903G4	13.50	D.C.	2	CR1061-B2D	2

\*Prices include one overload device heater which must be ordered separately. Heater may be omitted or additional heaters may be ordered at 75 cents each.

†Open type is adaptable to flush mounting when used with standard (2½ inches deep) conduit box and flush plate.

No. 5187946G1 replaceable solder-film-type overload device, 60 cents each.

**Heaters for Thermal Overload Devices**

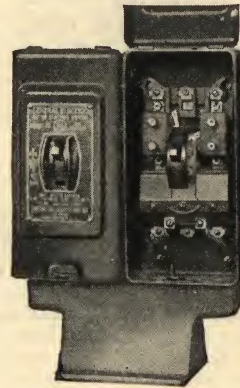
Interchangeable heaters are available for a variety of motor current ranges as shown in the table below.

Listed values are for motors rated 40°C. continuous. For motors rated 50°C. or 55°C. continuous, use heaters one size smaller than listed.

No.	Full-Load Current of Motor, Amperes	No.	Full-Load Current of Motor, Amperes	No.	Full-Load Current of Motor, Amperes
81D64	0.44-0.49	81D74	1.51-1.61	81D84	4.37-5.04
81D65	0.50-0.56	81D75	1.62-1.78	81D85	5.05-5.56
81D66	0.57-0.63	81D76	1.79-1.93	81D86	5.57-6.47
81D67	0.64-0.72	81D77	1.94-2.18	81D87	6.48-7.0
81D68	0.73-0.82	81D78	2.19-2.56	81D88	7.1-7.8
81D69	0.83-0.93	81D79	2.57-2.77	81D89	7.9-8.8
81D70	0.94-1.04	81D80	2.78-3.01	81D90	8.9-10.1
81D71	1.05-1.20	81D81	3.02-3.45	81D91	10.2-11.5
81D72	1.21-1.32	81D82	3.46-3.83	81D92	11.6-13.1
81D73	1.33-1.50	81D83	3.84-4.36	.....	.....

**G-E CR1062 Motor Starting Switches****For Small A.C. Motors—Manually Operated**

25, 40, 50 and 60 Cycles

**Two CR1062-C5 Switches Mounted on Pedestal**

These switches are single throw with double-break contacts. Overload protection is provided by means of hand-reset thermal overload device, and are used for throwing small a.c. single or 3-phase 60, 50, 40 or 25-cycle motors directly across the line. Operating mechanism trips free from handle. Contacts are of silver.

Cases have conduit knockouts and sufficient wiring space for No. 8 line wires with soldered terminals. Protects against single-phase operation of polyphase motors.

Order by CR number and switch number and form number. Also give rating of motor with which switch is to be used. Specify if heaters are required for overload protection.

**CR1062-B6, Single-Phase, for Wall Mounting**

No.	*Each	Max. Hp. Rating	Volts	No. of Poles
4981887	\$9.00	1 1½	110 220, 440, 550, 600	2

**CR1062-B7, 3-Phase, for Wall Mounting**

4981888	\$10.00	1 1½ 2	110 220, 440, 550, 600	3
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**Type CR1062-B8, 3-Phase, for Pedestal Mounting**

4981889	\$10.00	1 1½ 2	110 220, 440, 550, 600	3
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**CR1062-C4, Single-Phase, for Wall or Pedestal Mounting**

4981890	\$11.50	1 1½ 3 5	110 220 440, 550, 600	2
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**CR1062-C5, 3-Phase, for Wall or Pedestal Mounting**

4981891	\$12.50	3 5 7 1½	110 220 440, 550, 600	3
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**CR1062, Explosion-Proof or Watertight**

Complete information furnished on application.

\*Price includes heaters. Heaters may be omitted or additional heaters may be ordered at 75 cents each.

**Heaters for Thermal Overload Devices**

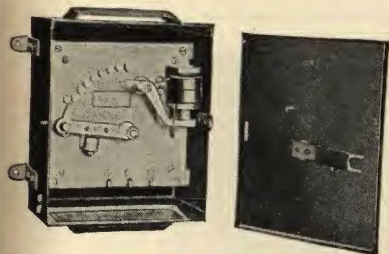
For use with standard or high-reactance squirrel-cage motors rated 40°C. rise continuous. For totally-enclosed fan-cooled motors or for motors rated 50°C. rise continuous, use one size smaller than listed below.

FULL-LOAD CURRENT OF MOTOR, AMPS.				FULL-LOAD CURRENT OF MOTOR, AMPS.			
For CR1062B Switches		For CR1062C Switches		For CR1062B Switches		For CR1062C Switches	
No.		No.		No.		No.	
81D106	.45-.50	81D123	3.24-3.59	81D107	.51-.57	81D124	3.60-3.99
81D108	.58-.64	81D125	4.00-4.49	81D109	.65-.74	81D126	4.50-5.09
81D110	.75-.84	81D127	5.10-5.79	81D111	.85-.96	81D128	5.8-6.59
81D112	.97-1.09	81D129	6.6-7.39	81D113	1.10-1.24	81D130	7.4-8.39
81D114	1.25-1.39	81D131	8.4-9.39	81D115	1.40-1.56	81D132	9.4-10.4
81D116	1.57-1.76	81D133	10.5-11.7	81D117	1.77-1.96	81D134	11.8-13.4
81D118	1.97-2.16	81D135	13.5-15.2	81D119	2.17-2.37	81D136	15.3-17.2
81D120	2.38-2.59	81D137	17.3-19.7	81D121	2.60-2.89	81D138	19.8-22.4
81D122	2.90-3.23						



### G-E CR1026 A.C. Enclosed Starting Rheostats

For Single-Phase Repulsion-Induction Motors  
40, 50 and 60 Cycles, Single-Phase



May be used with motors that do not require more than 150 per cent torque to start or longer than 30 seconds to attain full speed. Complies with N.E. M.A. Standard Resistor Classification No. 135.

Primarily for use

with the single-phase repulsion-induction motors (Type SCR) where the inrush of current resulting from throwing the motor directly upon the line is objectionable. When started by being thrown directly upon the line, it requires from 250 to 300 per cent full-load current. While in many cases this starting current may not be objectionable, it is recommended that a starter be installed in every case with the 7½ and 10-hp. motors and with the smaller motors when it is desired to reduce the starting current.

Starter for use with motors up to and including 5-hp. 110 volts and 7½-hp. 220 volts is provided with button contacts. Larger size has renewable segments.

Motor Hp.	110 Volts Each	220 Volts Each	440 Volts Each
Up to 1	\$30.80	\$30.80	.....
1½	33.60	33.60	.....
2	33.60	33.60	.....
3	33.60	33.60	.....
5	36.00	36.00	.....
7½	69.00	50.00	\$53.00
10	70.00	74.00	53.00

When ordering state CR Number of rheostat and hp., voltage and frequency of motor.

### G-E CR1034 A.C. Manual Reduced Voltage Starters

For Squirrel-Cage Induction Motors

For starting squirrel-cage induction motors on applications requiring not more than 15 seconds to attain full speed, once every 4 minutes for an hour.

Consists of an auto-transformer with taps, a switching device, an instantaneous undervoltage protective device and a hand-reset overload relay.

For wall mounting. The 2200-volt size is floor mounted. Switch is oil immersed. Can be furnished with ammeter attachment (including ammeter) at \$90. additional.

When ordering, specify the complete motor rating. Order ammeter attachment if desired.

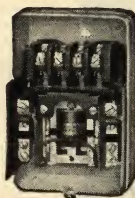
220, 440, 550-Volt Motor Rating

Hp.	Starter Incl. Relay Each	Form	Size	Hp.	Starter Incl. Relay Each	Form	Size
5-10	\$141.	K1	1	30	\$153.	K1	1
15	141.	K1	1	60	277.	K1	2
20	147.	K1	1	75	287.	K1	2
25	147.	K1	1	.....	.....	.....	.....
40	\$161.	K1	1	125	\$312.	K1	2
50	161.	K1	1	150	312.	K1	2
100	287.	K1	2	200	427.	K33	33
2200-Volt Motor Rating							
20	\$563.	F1A	75	\$612.	F1A	..	..
25	584.	F1A	100	623.	F1A	..	..
30	584.	F1A	125	631.	F1A	..	..
40	591.	F1A	150	641.	F1A	..	..
50	591.	F1A	200	659.	F1A	..	..
60	612.	F1A	.....	.....	.....	.....	.....
220-Volt Motor Rating							
40	\$259.	K1	2	125	\$410.	K33	3
50	267.	K1	2	150	1070.	K22	3
100	391.	K33	3	.....	.....	.....	.....

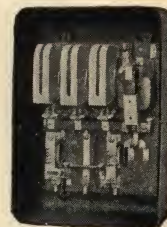
### G-E CR7006 A.C. Magnetic Switches

For Throwing Single, 2 or 3-Phase Motors  
Directly on the Line

25, 50 and 60 Cycles



CR7006-D50B, Size 0,  
with Cover Removed



CR7006-D30B, Size 2,  
with Cover Removed

These switches consist of a 2 or 3-pole magnetically-operated contactor with overload relays mounted on a base and enclosed in a suitable case. Provides undervoltage protection or release. May be operated by means of a push button station, float or pressure switch, etc.

Prices will be quoted on request on these switches designed specially for installation in dusty or corrosive atmospheres or in Class I Group D hazardous gas locations.

Order by CR number and specify rating of motor with which to be used and heater units required for overload protection.

#### 110 Volts

Nomen- clature	*Switch Each	†Push But- ton Sta- tion Each	—OMISSION PRICES—			MAX. HP.			No. of Poles
			En- clo- sing Case Each	Neces- sary Relay Heaters Each	Re- lay Each	3 or 2 Ph.	1 Ph.	Size No.	
CR7006-D50A	\$15.00	\$2.50	\$1.25	\$ .75	.....	.....	1	0	2
CR7006-D50B	17.50	2.50	1.25	1.50	.....	.....	1½	0	3
CR7006-D40G	17.50	2.50	1.25	.75	.....	.....	1½	1	2
CR7006-D40H	20.00	2.50	1.25	1.50	.....	3	1½	1	3
CR7006-D30B	38.00	2.50	4.00	1.50	.....	7½	3	2	3
CR7006-D 7B	63.00	2.50	9.00	1.50	.....	10	7½	..	3
CR7006-D54B	140.00	2.50	18.75	1.50	.....	25	..	4	3
CR7006-D38A	283.00	7.50	32.00	....	\$45.00	50	..	5	3

#### 220 Volts

CR7006-D50A	\$15.00	\$2.50	\$1.25	\$ .75	.....	.....	1½	0	2
CR7006-D50B	17.50	2.50	1.25	1.50	.....	2	..	0	3
CR7006-D40G	17.50	2.50	1.25	.75	.....	3	1	2	2
CR7006-D40H	20.00	2.50	1.25	1.50	.....	5	3	1	3
CR7006-D30B	38.00	2.50	4.00	1.50	.....	15	7½	2	3
CR7006-D7B	63.00	2.50	9.00	1.50	.....	25	15	..	3
CR7006-D54B	140.00	2.50	19.00	1.50	.....	50	..	4	3

#### 440-600 Volts

CR7006-D50A	\$15.00	\$2.50	\$1.25	\$ .75	.....	.....	1½	0	2
CR7006-D50B	17.50	2.50	1.25	1.50	.....	2	..	0	3
CR7006-D40G	17.50	2.50	1.25	.75	.....	5	1	2	2
CR7006-D40H	20.00	2.50	1.25	1.50	.....	7½	5	1	3
CR7006-D30B	38.00	2.50	4.00	1.50	.....	25	10	2	3
CR7006-D 7B	63.00	2.50	9.00	1.50	.....	50	25	3	3

\*Price of switch includes necessary relay heaters or relay, but no push button.

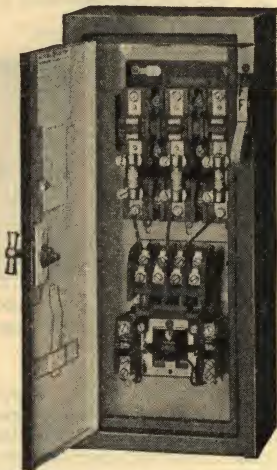
†Separately mounted.



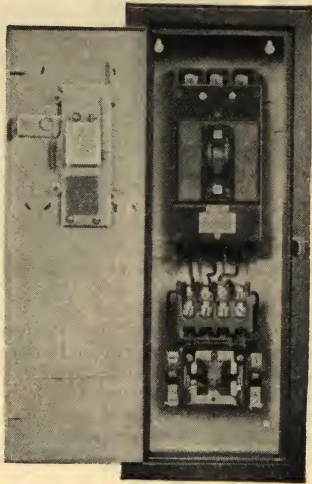
G-E CR7008 A.C. Combination Magnetic Switches

Full-Voltage Starters for Induction Motors

Air-Break or Oil-Immersed—Undervoltage Protection or Release—Thermal Overload Protection  
Maximum Voltage, 600—25-60 Cycles—3 or 2-Phase



Size 1 Fusible Switch in Type 1 General-Purpose Case



Size 1 Switch with Air Circuit Breaker in Type 1 General-Purpose Case

This combination device consists of a standard full-voltage starter enclosed in the same case with a motor-circuit switch or an air circuit breaker, operated from the outside of the case. Fusible motor-circuit switches can be furnished with the air-break switches.

A CR7008 combination magnetic switch and a CR2940 momentary-contact "start"-"stop" push-button station make a simple and reliable equipment for starting a small alternating-current motor. The combination provides complete protection to both the motor and the operator. The switch and push-button station are completely enclosed, which prevents accidental contact with any live parts.

These switches can be used with any pilot control, such as float switches or pressure governors. They also are suitable for use as primary switches in connection with wound-rotor motors.

The fuse clips will accommodate fuses for average values of motor current when the fusing practice is in accordance

with the 1937 National Electrical Code recommendations, which require that:

- 1. Squirrel-cage motors should be fused at not more than 300% of rated motor current.
- 2. High-reactance motors rated at not more than 30 amperes should be fused at not more than 250% of rated motor current, or, if rated at more than 30 amperes, should be fused at not more than 200% of rated motor current.
- 3. Wound-rotor motors should be fused at not more than 150% of rated motor current.

Fuse clips must likewise be of a size which will accommodate the maximum rating of fuse calculated in accordance with the above percentages. It is always desirable to check the fuse-clip recommendations for a particular value of motor current, to insure that a fuse of suitable size can be used. In no case should the size of fuse used exceed 400% of rated motor current.

208 and 220 Volts											Oil-Immersed Switch for Corrosive Atmospheres (Type 5 Case) with Circuit Breaker		Oil-Immersed Switch in Type 8 Case for Hazardous Gas Locations with Circuit Breaker							
MAXIMUM HP.					Fuse-Clip Capacity, Amp.	In Type 1 General-Purpose Case with Motor-circuit Switch		In Type 1 General-Purpose Case with Air Circuit Breaker		In Type 5 Dust-Tight Case with Motor-circuit Switch		Including Relay Coils and Oil Each	Approx. Ship. Wt. Lb.	Including Relay Coils and Oil Each	Approx. Ship. Wt. Lb.					
Squirrel-Cage	High-Reactance	Wound-Rotor	Single-Phase	Size No.		Including Relay Heaters Each	Approx. Ship. Wt. Lb.	Including Relay Heaters Each	Approx. Ship. Wt. Lb.	Including Relay Heaters Each	Approx. Ship. Wt. Lb.									
3	3	5	2	1	30	\$41.00	25	.....	..	\$59.00	40	\$126.00	125	\$145.00	140					
5	5	.....	3	1	60	44.00	30	\$48.00	30	62.00	45									
5	5	5	3	1	Unfused	36.00	25	.....	..	54.00	40									
7½	7½	10	.....	2	60	70.00	55	74.00	55	93.00	90	176.00	174	201.00	200					
10	15	15	7½	2	100	74.00	55	91.00	55	97.00	90									
15	.....	.....	.....	2	200	87.00	55	91.00	55	110.00	90									
15	15	15	7½	2	Unfused	63.00	50	.....	..	86.00	80	263.00	180	307.00	210					
.....	20	20	.....	3	100	113.00	105	.....	..	143.00	145									
25	25	25	10	3	200	119.00	105	125.00	105	149.00	145									
25	25	25	.....	3	Unfused	101.00	95	.....	..	131.00	135									
30	30	30	15	3	Unfused															
440 Volts																				
7½	7½	7½	5	1	30	\$45.00	30	\$57.00	30	\$63.00	45	\$126.00	125	\$145.00	140					
7½	7½	7½	5	1	Unfused	36.00	25	.....	..	54.00	40									
15	15	25	7½	2	60	74.00	55	88.00	55	97.00	90									
25	25	.....	10	2	100	79.00	55	88.00	55	102.00	90	176.00	174	201.00	200					
25	25	25	10	2	Unfused	63.00	50	.....	..	86.00	80									
.....	40	50	.....	3	100	113.00	105	.....	..	143.00	145									
50	50	.....	.....	3	200	131.00	105	138.00	105	161.00	145	263.00	180	307.00	210					
50	50	50	.....	3	Unfused	101.00	95	.....	..	131.00	135									

\*Prices do not include fuses. Relay heaters may be omitted or additional ones furnished at 75 cents each.

†Also available in Type 5 Dust-Tight case.

Heaters for above switches are listed on another page.



## G-E CR7009 A.C. Magnetic Reversing Switches—Sizes 1, 2, 3 and 4

110 to 600 Volts—Up to 100 Hp.

G-E Type CR7009 Magnetic Switches are suitable for use with reversing motors which are thrown directly across the line or which are controlled by automatic starters. Each switch consists of two mechanically interlocked, magnetically operated, three-pole contactors with overload relay. The entire assembly is mounted in a suitable enclosure. The switches can be controlled remotely through push-button stations, limit switches, or other pilot devices.

**Undervoltage Protection or Release.** These switches are ordinarily operated by a momentary-contact Forward-Reverse-Stop push-button station. A normally open interlock is furnished on both the forward and the reverse contactors of all sizes of switches, and completes the holding circuit.

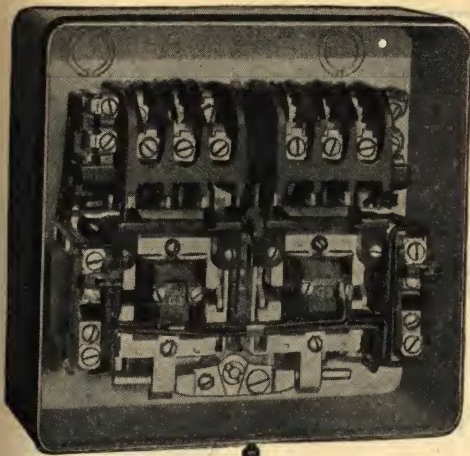
**Overload Protection.** Each switch is provided with a two-element hand-reset thermal overload relay. Provision is made for external resetting of the overload relays on Sizes 1 to 3 inclusive. On Size 4, it is necessary to open the door to reset the relay.

**Type 1, General-Purpose Enclosures.** Sizes 1 to 3 switches are enclosed in wall-mounted cases which have covers hinged on the side and which are held closed by clasps. Size 4 is provided with a floor-mounted case.

**Ordering Directions.** Order a magnetic reversing switch by CR number and complete number (root number plus suffix number).

Order a relay or two heaters from table at the bottom of this page.

Order CR2943-A300A push-button station separately.



Size 1 Magnetic Reversing Switch with Cover Removed

### 110 Volts

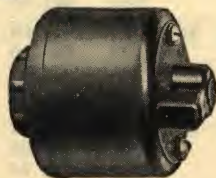
Nomenclature	Root No.	SUFFIX No.			Without Push-Button Station Each	MAXIMUM HP.		Size No.	Approx. Ship. Wt. Lb.	OMISSION PRICES	
		60 Cycles	50 Cycles	25 Cycles		3 or 2-Phase	Single Phase			Enclosing Case Each	Heater Each
CR7009-B50L	8235160	G2	G7	G17	\$38.00	1½	1	0	18	\$2.00	\$1.50
CR7009-B51L	8235184	G2	G7	G17	44.00	3	1½	1	19	3.00	1.50
CR7009-B18C	4383048	G2	G7	G17	84.00	7½	3	2	80	8.00	1.50
CR7009-B24A	4383441	G102	G107	G117	131.00	10	7½	3	90	13.00	1.50
CR7009-B33A	8234521	G2	G7	G17	131.00	15	....	3	125	13.00	1.50
CR7009-B34A	8234522	G2	G7	G17	329.00	25	....	4	165	24.00	1.50
<b>220 Volts</b>											
CR7009-B50L	8235160	G3	G8	G18	\$38.00	2	1½	0	18	\$2.00	\$1.50
CR7009-B51L	8235184	G3	G8	G18	44.00	5	3	1	19	3.00	1.50
CR7009-B18C	4383048	G3	G8	G18	84.00	15	7½	2	80	8.00	1.50
CR7009-B24A	4383441	G103	G108	G118	131.00	25	15	3	90	13.00	1.50
CR7009-B33A	8234521	G3	G8	G18	131.00	30	....	3	125	13.00	1.50
CR7009-B34A	8234522	G3	G8	G18	329.00	50	....	4	165	24.00	1.50
<b>440 Volts</b>											
CR7009-B50L	8235160	G4	G9	G19	\$38.00	2	1½	0	18	\$2.00	\$1.50
CR7009-B51L	8235184	G4	G9	G19	44.00	7½	5	1	19	3.00	1.50
CR7009-B18C	4383048	G4	G9	G19	84.00	25	10	2	80	8.00	1.50
CR7009-B24A	4383441	G104	G109	G119	131.00	50	....	3	90	13.00	1.50
CR7009-B34A	8234522	G4	G9	G19	329.00	100	....	4	165	24.00	1.50
<b>550 Volts</b>											
CR7009-B50L	8235160	G5	G10	G20	\$38.00	2	1½	0	18	\$2.00	\$1.50
CR7009-B51L	8235184	G5	G10	G20	44.00	7½	5	1	19	3.00	1.50
CR7009-B18C	4383048	G5	G10	G20	84.00	25	10	2	80	8.00	1.50
CR7009-B24A	4383441	G105	G110	G120	131.00	50	....	3	90	13.00	1.50
CR7009-B34A	8234522	G5	G10	G20	329.00	100	....	4	165	24.00	1.50
<b>600 Volts</b>											
CR7009-B50L	8235160	G6	G11	....	\$38.00	2	1½	0	18	\$2.00	\$1.50
CR7009-B51L	8235184	G6	G11	G21	44.00	7½	5	1	19	3.00	1.50
CR7009-B18C	4383048	G6	G11	G21	84.00	25	10	2	80	8.00	1.50
CR7009-B24A	4383441	G106	G111	G121	131.00	50	....	3	90	13.00	1.50
CR7009-B34A	8234522	G6	G11	G21	329.00	100	....	4	165	24.00	1.50

Price includes overload relays or heaters.

### Accessories



Two-Button Station for General Purpose Applications



Master Switch Control Station

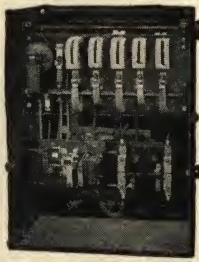
These magnetic reversing switches are generally controlled by push-button stations. They can also be controlled by a small master switch. Many applications, such as motor-operated doors and windows, valves and machine tools, require either a geared-type or track-type limit switch in addition to the reversing switch and push-button station. Complete information and prices will be furnished on application.





## G-E CR7051 A.C. Magnetic Reduced Voltage Starters

For Squirrel-Cage Induction Motors  
60 Cycles



Size 1 Starter

Provides remote control for constant-speed squirrel-cage induction motors on compressors, blowers and any application that does not require longer than 15 seconds to attain full speed, once every 4 minutes for an hour.

Consists chiefly of an autotransformer for supplying reduced voltage to motor during acceleration, accelerating contactor which connects autotransformer to line and motor to low-voltage taps, line contactor, temperature overload relay, a definite time relay which causes accelerating contactor to open and line contactor to close after a predetermined time.

### Size No. 1—3-Phase, 3-Wire

MOTOR RATING H.P.	Volts	†No.	*Each	MOTOR RATING H.P.	Volts	†No.	*Each
5	220	4386985G3	\$236.00	20	440	4386985G7	\$259.00
	440	4386985G4	236.00		550	4386985G8	259.00
	550	4386985G5	236.00	25	220	4386985G6	277.00
7½	220	4386985G3	236.00	440	4386985G7	259.00	
	440	4386985G4	236.00	550	4386985G8	259.00	
	550	4386985G5	236.00	30	220	4386985G9	287.00
10	220	4386985G3	236.00	440	4386985G10	287.00	
	440	4386985G4	236.00	550	4386985G11	287.00	
	550	4386985G5	236.00	40	440	4386985G12	311.00
15	220	4386985G3	236.00	550	4386985G13	311.00	
	440	4386985G4	236.00	50	440	4386985G12	311.00
	550	4386985G5	236.00	550	4386985G13	311.00	
20	220	4386985G6	277.00				

### Size No. 1—2-Phase, 3-Wire

5	220	4386983G2	\$236.00	20	440	4386983G6	\$259.00
	440	4386983G3	236.00		550	4386983G7	259.00
	550	4386983G4	236.00	25	220	4386983G5	277.00
7½	220	4386983G2	236.00	440	4386983G6	259.00	
	440	4386983G3	236.00	550	4386983G7	259.00	
	550	4386983G4	236.00	30	220	4386983G9	287.00
10	220	4386983G2	236.00	440	4386983G10	287.00	
	440	4386983G3	236.00	550	4386983G11	311.00	
	550	4386983G4	236.00	40	440	4386983G12	311.00
15	220	4386983G2	236.00	550	4386983G12	311.00	
	440	4386983G3	236.00	50	440	4386983G11	311.00
	550	4386983G4	236.00	550	4386983G12	311.00	
20	220	4386983G5	277.00				311.00

Ammeter Attachment (Includes Ammeter)...each \$90.00

\*Price is for compensator, relay heater units and push-button station. Relay heater units may be omitted or additional ones supplied at 75 cents each; push-button station may be omitted or additional ones supplied at \$2.50 each.

†No. does not include relay heater units.

## G-E Synchronous Motor Controllers

2 or 3-Phase, 3-Wire 50 or 60 Cycles  
Undervoltage Protection (Time Delay above 600 Volts)  
Thermal Overload Protection of Stator and Squirrel-Cage Windings  
Automatic Speed-Responsive Field Control



Typical CR7061 Reduced-Voltage Magnetic Controller for Low-Voltage Application (below 600 Volts)

Available in three types: full-voltage, magnetic; reduced-voltage, magnetic; and reduced voltage, semi-magnetic. Magnetic controllers are controlled by push buttons, whereas semi-magnetic controllers are equipped with manual starting devices. Both types have automatic field application and removal equipment.

The following equipment is common to all types: a.c. line ammeter, d.c. field ammeter, field applying contactor and field discharge contactor with discharge resistor; slip cycle impedance relay and auxiliary devices to apply field at critical speed and favorable angle and to remove field on pull-out within first slip-cycle, stator temperature overload relay and temperature squirrel-cage protective relay, and drilling for exciter field rheostat.

The full-voltage magnetic controllers employ a magnetically operated contactor for connecting the motor to the line, and the semi-magnetic type is equipped with a manually-operated compensator.

Reduced-voltage magnetic controllers are furnished with starting and running contactors and an auto-transformer for supplying reduced voltage to the motor in starting. The accelerating time is automatically determined by a Telechron motor operated transfer relay, which is adjustable.

The reduced-voltage semi-magnetic controllers are similar to the magnetic type except that the starting and running devices are manually-operated.

Rating of Controller H.P.		Reduced-Voltage Controller Magnetic CR7061		Semi-Magnetic CR7062		Full-Voltage Controller Magnetic CR7065	
1.0	0.8	Panel No.	Each	Panel No.	Each	Panel No.	Each
25	20	220	\$868.00	111	\$728.00	121	\$623.00
		440	801.00	111	728.00	121	595.00
		550	801.00	111	728.00	121	595.00
		2200	1905.00	212	1144.00	221	1098.00
30	25	220	868.00	111	728.00	121	623.00
		440	801.00	111	728.00	121	595.00
		550	1905.00	111	728.00	121	595.00
		2200	801.00	212	1165.00	221	1098.00
40	30	220	886.00	112	734.00	121	623.00
		440	886.00	111	734.00	121	623.00
		550	886.00	111	734.00	121	623.00
		2200	1931.00	212	1165.00	221	1098.00
50	40	220	1085.00	112	840.00	123	693.00
		440	899.00	111	742.00	121	623.00
		550	899.00	111	742.00	121	623.00
		2200	1945.00	212	1172.00	221	1098.00
60	50	220	1085.00	112	848.00	123	693.00
		440	927.00	111	742.00	121	623.00
		550	927.00	111	742.00	121	623.00
		2200	1945.00	212	1172.00	221	1098.00
75	60	220	1275.00	114	858.00	123	847.00
		440	1098.00	112	858.00	123	693.00
		550	1098.00	112	858.00	123	693.00
		2200	1973.00	212	1193.00	221	1098.00



## Cabinetrol Unit Control Cabinets

A dead-front unit control cabinet which is completely assembled at the factory, so that the user needs only to make connections for his motor and control cables at the time of installation.

Each individual panel is completely coordinated to give proper short circuit protection to bus, wiring, and all branch circuits. Thermal protection is provided for each individual motor circuit.

Case is made from special, smooth  $\frac{3}{32}$ -inch sheet steel with welded outside joints which are seam welded and ground to a smooth finish.

Each compartment has its own door and is segregated from the neighboring compartments by steel barriers.

Doors are of the pan type with edges turned back 90° and mounted on fully concealed hinges. Doors close into deep, L-shaped flanges providing a construction which effectively excludes dust. Each door is equipped with T-shaped operating handles and provided with key-operated cylinder locks. A engraved Textolite nameplate on each door identifies each control unit.

**Operating handles** for motor circuit switches and breakers, except incoming line breakers, are mounted on the compartment doors.

**Operating mechanisms for incoming line breakers** are inside of the door to prevent unintentional shutdown of entire equipment.

**Operating mechanisms for motor starters** are so interlocked that the door cannot be opened unless the handle is in the Open position. A locking bar is provided for all motor-starter mechanisms so that they can be padlocked in either the On or Off position. A reset button is provided in the door of each compartment for resetting the overload relay with the door closed.

**Terminal boards** are accessible through full-length rear doors whose handles have cylinder-type, key-operated locks.

**Furnished with a 4-inch lifting angle** to facilitate installation.

**Starters** are available for synchronous, squirrel-cage, or wound-rotor motors requiring up to N.E.M.A. size 6 contactors. Either reduced-voltage or full-voltage, reversing or non-reversing control units are available.

Can be arranged for throat connection to the source of power.

All devices, including starters, transformers, reactors, rheostats, resistors, meters, or instruments are wired, assembled, and tested at the factory. Push button stations, selector switches, and indicating lights can be mounted on the doors of standard compartments. Dry-type transformers up to  $7\frac{1}{2}$  kilovoltamperes, for control or lighting, can be installed, if required.

Available in 24 or 40-inch depth.

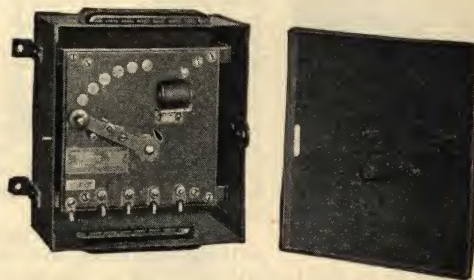
Pearl-gray lacquer finish is standard.

## G-E CR1003 D.C. Enclosed Heavy Duty Starting Rheostats

For Series, Shunt or Compound-Wound Motors

N.E.M.A. Resistor Class.

Up to 30 Hp., 32 & 115 Volts; 50 Hp., 230 & 350 Volts; No. 115  
Above 30 Hp., 32 & 115 Volts; 50 Hp., 230 & 350 Volts; No. 135



This heavy duty starting rheostat affords a convenient, simple means of providing starting and smooth acceleration for all kinds of d.c. motors.

Provides undervoltage protection.

Order by CR number and number and state rating of motor with which rheostat is to be used.

## 32 Volts

No.	Each	Motor Hp.	Approx. Ship. Wt. Lb.	No.	Each	Motor Hp.	Approx. Ship. Wt. Lb.
2021100G15	\$19.60	$\frac{1}{4}$	20	2021000G31	\$28.00	$1\frac{1}{2}$ -2	40
2021100G17	19.60	$\frac{1}{2}$	20	2042441G7	59.00	3	120
2021000G29	28.00	$\frac{3}{4}$ -1	40	2042441G8	66.00	5	120

## 115 Volts

2021100G3	\$19.60	$\frac{1}{8}$ - $\frac{1}{2}$	20	2042593G2	\$101.00	20	175
2021100G7	19.60	$\frac{3}{4}$ -1	20	2042593G3	123.00	25	175
2021000G3	28.00	$1\frac{1}{2}$ -2	40	2042593G4	132.00	30	175
2021000G7	28.00	3	40	2091686G2	297.00	40	400
2021000G11	35.00	5	50	2091687G2	384.00	50	550
2042440G2	57.00	$7\frac{1}{2}$	80	2091687G4	395.00	60	550
2042441G2	71.00	10	90	2091687G5	395.00	75	550
2042441G3	77.00	15	90	.....	.....	.....	.....

## 230 Volts

2021100G5	\$19.60	$\frac{1}{8}$ - $\frac{1}{2}$	20	2042441G6	\$81.00	25	105
2021100G9	19.60	$\frac{3}{4}$ -1	20	2042593G5	101.00	30	175
2021000G5	28.00	$1\frac{1}{2}$ -2	40	2042593G8	132.00	40	175
2021000G9	28.00	3	50	2042593G9	139.00	50	175
2021000G13	35.00	5	50	2091686G4	308.00	60	400
2021000G15	36.00	$7\frac{1}{2}$	50	2091686G5	308.00	75	400
2042440G3	64.00	10	105	2091687G6	395.00	100	550
2042441G4	74.00	15	105	2091687G7	410.00	125	550
2042441G5	74.00	20	105	2091687G8	410.00	150	550

## 550 Volts

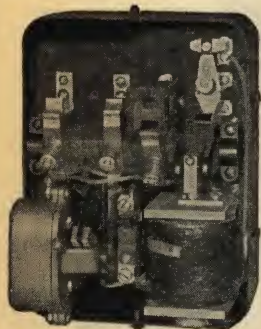
2046402G3	\$35.00	$\frac{1}{8}$ - $\frac{1}{2}$	45	2091688G6	\$244.00	25	350
2046402G5	35.00	$\frac{3}{4}$ -1	45	2091688G7	244.00	30	350
2046402G7	35.00	$1\frac{1}{2}$ -2	45	2091688G9	244.00	40	350
2046402G9	35.00	3	50	2091689G4	253.00	50	350
2046402G11	36.00	5	50	2091690G4	308.00	60	400
2046402G13	43.00	$7\frac{1}{2}$	50	2091690G5	308.00	75	400
5726619G3	112.00	10	80	5726675G7	308.00	100	400
5726619G5	116.00	15	80	5726676G6	330.00	125	400
5726619G7	123.00	20	80	5726676G7	330.00	150	400



## G-E CR4052 D.C. Definite Mechanical Time Starters

Constant Speed—Non-Reversing—Non-Jogging—Without Dynamic Braking

Maximum Rating, 5 Hp., 115 Volts; 10 Hp., 230 Volts



Typical CR4052-A1L Starter with Cover Removed

CR4052-A1L and -A2L starters are non-reversing, non-jogging, general purpose starters designed for use with constant-speed direct current motors up to 5 hp. 115 volts and 10 hp. 230 volts. They consist of a solenoid-operated multifinger contactor and a temperature overload relay (either hand or automatic reset), all mounted on a molded Textolite base on the back of which is mounted the Class 115 starting resistor. The multifinger contactor has a blowout and arc chute on the line contact to interrupt the arc quickly.

The starters can be applied, within their rating, to constant-speed motors up to and including 1800 rpm. that do not require more than 150% full-load torque to start nor longer than 10 seconds to attain full speed. Before using these starters on 3600-rpm. motors, or on motors that require longer than 10 seconds to attain full speed, the application should be checked with the nearest district office. These starters provide isothermic overload protection, hand or automatic

reset, and undervoltage protection or release depending on the accessory used.

Supplied in N.E.M.A. Type 1 enclosing case.

Order by number and form, and specify motor with which starter is to be used. Order relay heater from table below.

Non-reversing, non-jogging pushbutton stations; CR-2943A200A, \$2.50; CR2940-2A1, \$7.50.

## Heaters for Thermal Overload Devices

Listed values are for motors rated 40°C. continuous. For motors rated 50°C. continuous, use heaters one size smaller than listed.

115 Volts					
No.	*Each	Form	Hp.	No. of Accelerating Points	Approx. Ship. Wt. Lb.
6932902G10	\$58.00	A1L	1/2-3/4	3	20
6932902G11	58.00	A1L	1-1 1/2	3	20
6932902G12	58.00	A1L	2	3	20
6932902G13	58.00	A1L	3	3	20
6932903G5	105.00	A2L	5	3	31
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....

230 Volts					
No.	*Each	Form	Hp.	No. of Accelerating Points	Approx. Ship. Wt. Lb.
6932902G6	\$58.00	A1L	1/2-3/4	3	20
6932902G7	58.00	A1L	1-1 1/2	3	20
6932902G8	58.00	A1L	2	3	20
6932902G9	58.00	A1L	3	3	20
6932902G14	65.00	A1L	5	3	20
6932903G6	76.00	A2L	7 1/2	3	31
6932903G7	105.00	A2L	10	3	31

## G-E Type CR4061 D.C. Definite Magnetic-Time, Heavy Duty Starters

Constant Speed—Non-Reversing—Jogging—Without Dynamic Braking

Maximum Rating, 10 Hp., 115 Volts; 20 Hp., 230 Volts

Order a starter by number and form.

Order one relay heater from table above.

## Pushbutton Station

Non-reversing, jogging. This pushbutton station has pigtail and latch on jog, and is for use with starters listed below.

CR2940-3DP1.....each \$11.75

## Modifications

Field-protective relay, \$40.00; field decelerating relay, \$53.00; fused, control-circuit knife switch, \$32.20; control-circuit fuses, \$16.80; auxiliary control relay, \$40.00; jogging relay, for use with pushbutton station that has no jog attachment, non-reversing, \$40.00.



Typical CR4061-A1C Starter with Cover Removed



Typical CR4061-A1A, 1 to 3 Hp. Definite Magnetic Time-Heavy Starter

115 Volts					
No.	*Each	Form	Hp.	No. of Accelerating Points	Approx. Ship. Wt. Lb.
4389745G9	\$106.00	A1A	1/2-3/4	2	25
4389745G10	106.00	A1A	1-1 1/2	2	25
4389745G29	106.00	A1A	2	2	25
4389745G30	109.00	A1A	3	2	25
5367125G6	141.00	A1C	5	3	60
5367125G7	213.00	A1C	7 1/2	3	60
5367125G3	219.00	A1C	10	3	60
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....

230 Volts					
No.	*Each	Form	Hp.	No. of Accelerating Points	Approx. Ship. Wt. Lb.
4389745G3	\$106.00	A1A	1/2-3/4	2	25
4389745G4	106.00	A1A	1-1 1/2	2	25
4389745G31	106.00	A1A	2	2	25
4389745G32	106.00	A1A	3	2	25
4389745G33	109.00	A1A	5	2	25
5367125G10	137.00	A1C	7 1/2	3	60
5367125G4	141.00	A1C	10	3	60
5367125G8	206.00	A1C	15	3	60
5367125G9	213.00	A1C	20	3	60

\*Price includes relay heater, but no pushbutton station. Relay heaters may be omitted or additional ones supplied at 75 cents each.



## G-E CR2940 Pushbutton Stations

CR2940 pushbutton stations are primarily intended for use in the control circuits of various magnetic controllers. The large contacts and substantial construction of these heavy-duty stations make them well able to withstand the frequent operation and ordinary rough usage of machine tool and similar applications.

The stations listed are divided into three general classes: momentary contact, maintaining contact and a combination of momentary and maintaining contacts. With a momentary contact the circuit is completed or interrupted only as long as the operator's finger depresses the button. This feature is required when the station is used with a controller that must provide under-voltage protection. A maintaining contact holds the circuit open or closed as does an ordinary knife switch.

Available in two sizes: standard-duty, suitable for use with contactors up to and including 150 amperes, and heavy duty, for use with any size contactor.



Typical 3 Button Station for Front-of-Panel or Wall Mounting

## General-Purpose, Momentary-Contact—Single Button

Nomenclature	Nameplate Markings	Duty	Each
CR2943-A100A	Stop.....	Standard	\$2.50
CR2943-A100D	Start.....	Standard	2.50
CR2940-1H1	Start.....	Heavy	5.00
CR2940-1A1	Stop.....	Heavy	5.00
CR2940-1E1	Reset.....	Heavy	5.00

## 2 Buttons



Nomenclature	Nameplate Markings	Duty	Each
CR2940-2A1	Start—Stop.....	Heavy	\$7.50
CR2940-2E1	Raise—Lower.....	Heavy	7.50
CR2940-2F1	Up—Down.....	Heavy	7.50
CR2943-A200F	Raise—Lower.....	Standard	3.10
CR2943-A200A	Start—Stop.....	Standard	2.50
CR2943-A200J	Up—Down.....	Standard	3.10

## 3 Buttons

CR2940-3A1	Forward—Reverse—Stop..	Heavy	\$10.00
CR2943-A300A	Forward—Reverse—Stop..	Standard	7.50
CR2943-A300C	Open—Close—Stop.....	Standard	7.50

## 4 Buttons

CR2940-4A1	Forward—Jog Forward—Reverse—Stop.....		\$16.25
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## 5 Buttons

CR2940-5A1	Forward—Jog Forward—Reverse—Jog—Reverse—Stop.....		\$20.00
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## Maintaining Contact One Selector Switch

CR2940-A2	Safe Stop—Run.....		\$6.25
CR2940-B2	Stop—Run.....		6.25
CR2940-C2	Slow—Fast.....		6.25
CR2940-D2	Creep—Normal.....		6.25
CR2940-E2	Open—Close.....		6.25
CR2940-F2	On—Off.....		6.25
CR2940-G2	Stop—Start.....		6.25
CR2940-H2	Raise—Lower.....		6.25

## Stations for Special Applications



CR2943-E200B

CR2943-E200B	Start—Stop (Watertight) .....	\$8.75
CR2940-2A7	Start—Stop (Watertight) .....	15.00

## G-E CR2931 Enclosed Float Switches

For A.C. or D.C. Motors



Form D



Form P

Suitable for use in the control circuit of a.c. or d.c. automatic starters, and, except for the Form P, can directly handle the circuits of small motors.

These switches, as furnished, are arranged for tank operation, that is, the switch closes as the lower liquid level is reached, and opens as the top level is reached. This action may be easily changed for sump operation by interchanging the float and counterweight. Standard floats should not be subjected to pressure. Quotation on special floats will be furnished on request.

All switches are drip and splash-proof and suitable for outdoor installation where they are not subjected to snow or sleet. Where the liquid whose level is to be controlled is subject to freezing, a float switch should not be used.

All switches are quick acting when closing and opening, and this insures a minimum of arcing and burning of the contacts.

Form	No. of Poles	Description	Each
A	Dbl.	For Clamping to Inside Top Edge of Tank; Operated by Rod and Float; Range, 10 Inches to 5 Feet.....	\$46.
A	4	Same as Form A Double-Pole.....	51.
B	Dbl.	For Bolting to Tank Cover; Requires Guide in Cover for Operating Rod; Range, 10 Inches to 3½ Feet.....	49.
B	4	Same as Form B Double-Pole.....	54.
C	Dbl.	For Bolting to Tank Cover; Range, 10 Inches to 3½ Feet.....	51.
C	4	Same as Form C Double-Pole.....	56.
D	Dbl.	†For Bolting to Tank Cover; Operated by Chain and Float; Suitable for Any Depth of Tank or Any Variation in Water Level Not Less Than 10 Inches	*51.
D	4	†Same as Form D Double-Pole.....	*56.
L	Dbl.	†Operated by Chain and Float; For Any Variation in Water Level Not Less Than 5 Inches.....	*36.
M	Dbl.	Rod-Operated; Range, 2½ In. to 4½ Ft.	36.
P	Sgl.	§Operated by Chain and Float; For Any Variation in Water Level Not Less Than 2 Inches.....	†20.
AW	Sgl.	Same as Form P, Except with Mercury-Tube, Heavy Duty Connectors.....	†23.

Order by CR and Form numbers. Specify number poles of switch.

\*Price includes 15 feet of bronze chain. If more is required add 15 cents for each additional foot.

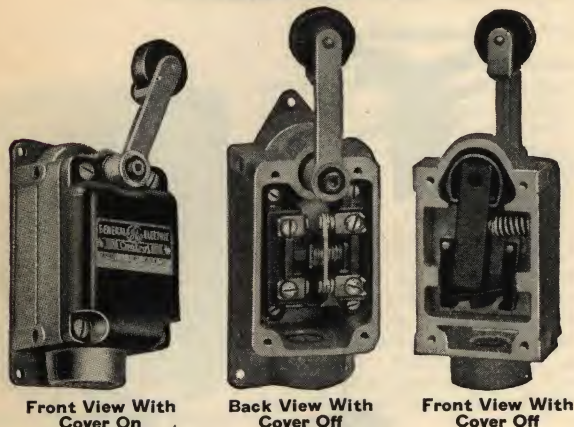
†Price includes 15 feet of brass chain. If more is required add 5 cents for each additional foot.

To obtain maximum operating range: †Deduct 3½ feet from length of chain; §deduct 1½ feet from length of chain.



## G-E CR9440 Lever-Type Limit Switches

CR9440-J1D

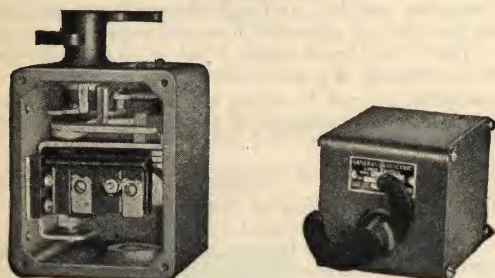


The No. CR9440-J1D is a sturdy, lever-operated limit switch enclosed in a strong, die-cast case and a moulded phenolic cover. Its oilproof construction and single-pole, double-throw, double-break silver contacts of snap-action design make it very suitable for machine tool and miscellaneous service.

Complete operation of the switch is obtained by a 12 degree travel of the lever with an overtravel of 24 degrees in either the clockwise or counterclockwise directions of rotation.

As supplied by the factory, this switch is arranged for clockwise operation, looking at its cover side. The direction of operation can be reversed by removing the base plate and transferring the return spring to the opposite side of the swing bar.

CR9440-B1B



With Side Plate Removed

Closed

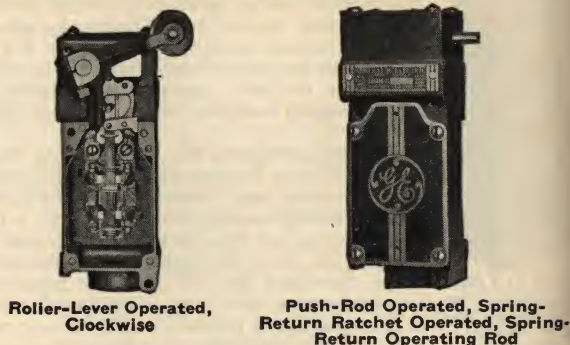
A heavy-duty, snap-action, single-pole, double throw switch with two independent circuits. This limit switch should be used whenever a small, compact, heavy-duty reversing limit switch is required to open or close a control circuit and where maintained accuracy of operation is of primary importance. Its field of application includes tapping machines, threading machines, grinder tables, welding machines, and other reciprocating machines where a reversing limit switch is applicable.

The contacts are double-break, and both stationary and movable tips are of fine silver to insure long life and dependable operation.

The movable contacts are held in either position by a small Alnico magnet acting on an iron yoke. When the yoke is broken away from the magnet face, by direct mechanical action of the operating lever, a sturdy spring snaps the contact assembly to the opposite position, where it is held in by the same Alnico magnet until the yoke is broken away in the opposite direction. For this reason, the operating point is determined entirely by the position of the operating lever and is independent of tension in the spring. This construction insures maintained accuracy of operation in spite of changes in spring tension caused by aging under repeated operation.

Switch is enclosed in an oiltight steel enclosing case with two gasketed side plates and an opening in the rear for 1/2-inch conduit connection. With the side plates removed, the terminals are easily accessible and large working clearances make the switch easy to wire and install.

CR9440-D2

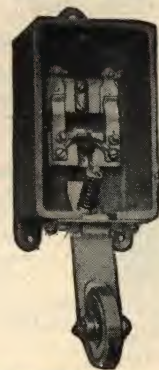


A lever-operated, push-rod-operated or plunger-operated limit switch. All except the plunger-operated form have snap-action contacts. A variety of contact arrangements is available, which can be changed in the field from normally open to normally closed operation, or vice versa. The operating heads can be interchanged, or turned 180°. Holes are provided for mounting the switch on either its back or its side. These features allow maximum flexibility in application.

The switches are available in both open and enclosed forms. The open switches are particularly adapted to built-in applications where space is limited. Frames and plungers are constructed of molded Textolite. The contacts are solid silver and are designed to close with a rolling action. All switches are equipped with flag terminals to accommodate two wires on each terminal. The construction is extremely compact and flexible. The enclosed form has a die-cast case, and is provided with velumoid gaskets and grease seals at shaft journals to make the switch oilproof for machine-tool use.

Application extends to virtually any automatic equipment where a traverse motion must be converted into control of an electric circuit, particularly where the motion is slow and snap-action contacts are necessary to prevent burning of the contact tips.

CR9440-LS416



With Cover Removed

This hatchway-type limit switch is of lever construction, and is particularly for mounting in the hatch of an elevator. Although the switch is light and compact to facilitate mounting where space is limited, it is substantially built and is suitable for severe service. Only a small amount of pressure is needed to operate the roller lever. The Forms A, B and C have a rubber-tired roller to eliminate noise.

The switch is obtainable with either one open, one closed, one open and one closed (with overlapping or non-overlapping contacts), or two closed circuits. The various forms cannot be conveniently interchanged in the field.



### G-E CR9440 Lever-Type Limit Switches For Miscellaneous and Machine Tool Service—Track Type

Roller Lever, Spring Return Operation						CONTACT RATINGS, INDUCTIVE LOAD CARRYING AND BREAKING, MAXIMUM AMPERES								Approx. Ship. Wt.Lb.
Description	Form and Type of Switch	*Each	No. of Circuits	Norm. Open	Devel- opment Fig.	D.C. CIRCUITS			A.C. CIRCUITS					
						115 Volts	230 Volts	550 Volts	110 Volts	220 Volts	440 Volts	550 Volts		
Oilproof, Snap-Action, C. W. or C. C. W. Rotation, 1/2-In. Conduit	CR9440-JIC	\$7.50	†1	1	1	2.5	.8	.25	30	15	7	5	4	
Oilproof, Snap-Action, C. W. or C. C. W. Rotation, 1/2-In. Conduit	CR9440-JID	7.50	†1	1	1	2.5	.8	.25	30	15	7	5	4	
Snap-Action Silver Contacts; Oilproof Case.....	C. W. Rotation	CR9440-D2AA	10.00	2	..	2	1.5	.5	.15	30	15	7	5	3
		CR9440-D2BA	10.00	..	2	3	1.5	.5	.15	30	15	7	5	3
		CR9440-D2CA	10.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
		CR9440-D2DA	10.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
	C. C. W. Rotation	CR9440-D2AB	10.00	2	..	2	1.5	.5	.15	30	15	7	5	3
		CR9440-D2BB	10.00	..	2	3	1.5	.5	.15	30	15	7	5	3
		CR9440-D2CB	10.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
		CT9440-D2DB	10.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
Reversing Motion, Maintained Contact														
Alnico Snap-Action; Oilproof Case; } Forked Lever (Offset).....	CR9440-B1B	\$13.75	†1	1	1	4	1.2	.4	30	15	7	5	5	
Silver Contacts; Oilproof Spring Return.....	Plunger Operated													
	CR9440-D2AF	\$6.25	2	..	2	1.5	.5	.15	30	15	7	5	3	
	CR9440-D2BF	6.25	..	2	3	1.5	.5	.15	30	15	7	5	3	
	CR9440-D2CF	6.25	†1	1	1	1.5	.5	.15	30	15	7	5	3	
	CR9440-D2DF	6.25	†1	1	1	1.5	.5	.15	30	15	7	5	3	
Snap-Action Silver Contacts; Oilproof Case.....	Push-Rod Operated													
	CR9440-D2AC	\$10.00	2	..	2	1.5	.5	.15	30	15	7	5	3	
	Maintained Contact	CR9440-D2BC	10.00	..	2	3	1.5	.5	.15	30	15	7	5	3
		CR9440-D2CC	10.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
		CR9440-D2DC	10.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
		CR9440-D2AD	10.00	2	..	2	1.5	.5	.15	30	15	7	5	3
	Spring Return	CR9440-D2BD	10.00	..	2	3	1.5	.5	.15	30	15	7	5	3
		CR9440-D2CD	10.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
		CR9440-D2DD	10.00	†1	1	1	1.5	.5	.15	30	15	7	5	3

### Hatchway, Elevator Service

Roller Lever, Spring Return													
3-Inch Rubber-Tired Roller (End) ..	CR9440-LS416A	\$13.75	..	1	4	5	1.5	.5	50	20	8	6	14
	CR9440-LS416B	15.00	..	2	3	5	1.5	.5	50	20	8	6	14
	CR9440-LS416C	13.75	1	..	5	5	1.5	.5	50	20	8	6	14
3-Inch Textolite Roller (End) . . . . .	CR9440-LS416E	15.00	..	2	3	5	1.5	.5	50	20	8	6	14
	CR9440-LS416AA	20.00	†1	1	1	5	1.5	.5	50	20	8	6	14
	CR9440-LS416AB	20.00	†1	1	1	5	1.5	.5	50	20	8	6	14

\*Price of switch includes one of the following operating levers:

No. 2879404G5 roller lever with 3-inch Textolite roller.

No. 2804448G5 roller lever with 1-inch steel roller.

No. 894946G1 straight lever.

†Non-overlapping contacts; one circuit is broken before the other is closed.

‡Overlapping contacts; one circuit is broken after the other is closed.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

### G-E CR9441 Direct-Connected, Rotating-Type Limit Switches

**CR9441-LS424.** This geared-type, general-purpose limit switch has two cam-operated switch elements which make it suitable for limiting travel in two directions.

**CR9441-D2B** is a durable, reversing, rotating limit switch, traveling-nut type, built in a heavy, cast-iron, watertight enclosure. Primarily developed for use with valves, the switch can be used successfully for any application where this type of limit switch is required to limit the range of equipment operation.

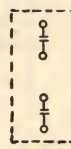


Fig. 1

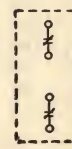


Fig. 2



Fig. 3

### For Miscellaneous and Machine Tool Service—Cam-Operated, Reversing

Description	Form and Type of Switch	Each	TURNS OF DRIVING SHAFT			No. of Contact Units	Development Fig.	CONTACT RATINGS, INDUCTIVE LOAD CARRYING AND BREAKING, MAX. AMP.						Approx. Ship. Wt. Lb.
			Min.	Max.	Over-travel			D.C. CIRCUITS		A.C. CIRCUITS				
								115 Volts	230 Volts	110 Volts	220 Volts	440 Volts	550 Volts	
General Purpose...	CR9441-C2G	\$17.50	1½	120	3½	2 N.C.	2	1.5	.5	30	15	7	5	10
	CR9441-C2H	17.50	1½	120	3½	2 N.O.	1	1.5	.5	30	15	7	5	10
	CR9441-LS424S	17.50	5	30	1	2 N.C.	2	* 2	* 1	20	10	4	3	10

### Traveling-Nut Type—Reversing

Description	Form and Type of Switch	Each	TURNS OF DRIVING SHAFT			No. of Contact Units	Devel- ment Fig.	CONTACT RATINGS, INDUCTIVE LOAD CARRYING AND BREAKING, MAX. AMP.				Ap- prox. Ship. Wt. Lb.
			Min.	Max.	Over-travel			115 Volts	230 Volts	110 Volts	220 Volts	
Watertight in Cast Iron Case..	CR9441-D1	†\$213.00	1	120	3	†3-14	§	2.5	.8	30	15	7
	CR9441-D2B	68.00	1	113	5	2	3	2.5	.8	30	15	7

\*When using on d.c., a .5-microfarad capacitor is required across the coil of the controlled device.

†Additional contact units up to a maximum total of 14 may be added at \$12.50 each. Specify number of circuits required.

‡Each contact unit has 1 N.O. and 1 N.C. circuit.

§Traveling nut with a total of 8 dripping dogs. Can have a maximum of 14 N.O. and 14 N.C. circuits.



CR9441-D2B



**G-E CR2927 Pressure and Vacuum Switches**

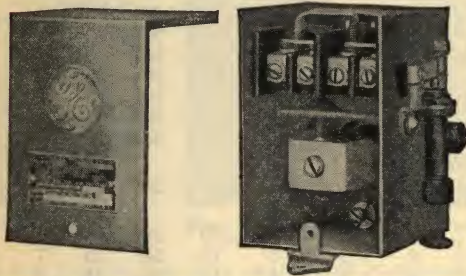
**Diaphragm Type—For Starting Small Motors or for Pilot-Circuit Control**

**Maximum Hp. Ratings:**

**2 Hp. 110 Volts, 5 Hp. 220 Volts, 5 Hp. 440 and 550 Volts A.C. Polyphase**

**1½ Hp. 110 Volts and 3 Hp. 210 Volts A.C. Single-Phase**

**½ Hp. 110 to 550 Volts D.C.**



**Pressure Switch (Cover Removed) with Unloader Valve and Differential-Adjusting Attachment Mounted in Place**

These switches are designed to open or close contacts upon changes of pressure or vacuum of any gas or liquid which will not affect synthetic rubber or brass or steel parts.

Used for starting motors not larger than 2 hp. 110 volts, 5 hp. 220, 440, and 550 volts polyphase; 1½ hp. 110 volts and 3 hp. 220 volts single-phase or ½ hp. 110 to 550 volts d.c. When larger motors are used, these switches can be used in connection with automatic starters which will also provide overload protection.

Order by CR number and specify adjustment if other than factory adjustment is required.

**Pressure Switches**

No.	Each	Operation	Max. Pres- sures, Lb. per Sq. In.	FACTORY ADJUSTMENT, Lb. PER Sq. In.		MIN. ADJUSTMENT, Lb. PER Sq. In.		MAX. ADJUSTMENT, Lb. PER Sq. In.	
				Close	Open	Close	Open	Close	Open
2248268G7	\$21.00	Std.	5000	3200	4500	250	1300	3650	5000
2248268G2	9.80	Std.	300	200	250	15	35	245	300
2248268G3	8.40	Std.	160	130	150	8	23	140	160
2248268G4	19.60	Std.	80	70	80	4	12	70	80
2248268G20	7.00	Std.	80	52	70	8	23	62	80
2248268G5	19.60	Std.	40	36	40	2	5	36	40
2248268G6	22.40	Std.	13	9	10	1½	1½	12	13
2248268G8	9.80	Rev.	300	250	200	35	15	300	245
2248268G9	8.40	Rev.	160	150	130	23	8	160	140
2248268G10	19.60	Rev.	80	80	70	12	4	80	70
2248268G11	19.60	Rev.	40	40	36	5	2	40	36
2248268G12	22.40	Rev.	13	10	9 1¼	1½	13	12	

**Vacuum Switches**

2248269G2	\$18.20	Std.	26½	5¾	8	1	3 23½	26½	26½
2248269G3	18.20	Rev.	26½	8	5¾	3	1 26½	23½	

**Attachments**

†No. 2244498G2, Unloader, 2-Way.....	each	\$2.80
No. 2246093G1, Differential-Adjusting Attachment for Standard Operation Switch.....	each	1.40
No. 2246900G1, Differential-Adjusting Attachment For Reverse Operation Switch.....	each	1.40
†No. 2246094G1, Hand-Oper. Lock-Out Lever.....	each	2.10

\*Std., standard operation: open at high pressure, close at low pressure. Rev., reverse operation: open at low pressure, close at high pressure.

†These attachments are used only for Nos. 2248268G2, 3, 4, 5, and 6; and No. 2248269G2.

**G-E CR7505 Photoelectric Relays**

**CR7505-K108**

For certain control problems, G-E photoelectric relays offer many definite advantages over more conventional control devices.

All units have an adjustable sensitivity to meet various conditions of phototube illumination, and may be adjusted either to close or to open a circuit upon suitable light change.

A separate phototube holder can be mounted in any position by means of a mounting bracket, which is included.

**CR7505-A100.** This general purpose relay is for indoor application. It has an extended phototube holder, and is often applied where mounting space for the phototube is limited, or where the phototube will be subject to considerable vibration. The use of tubes, which are designed for long life, makes this unit especially desirable for installations which have infrequent inspection. The unit also includes a 15-ampere a-c. contactor for operation of the controlled electric circuit.

**CR7505-N110.** This relay is designed for indoor applications where high speed of response is necessary. The phototube is mounted in a separate holder, complete with 6 feet of shielded cable. The load is handled by a 5-ampere relay.

**CR7505-K2, -K112, -K108.** These general purpose, self-contained relays are applied where a complete photoelectric relay can be mounted to receive the beam of light and where the per cent change in light is adequate. The CR7505-K2 is for a-c. indoor application, CR7505-K112 is for a-c. or d-c. indoor application, and CR7505-K108 is for a-c. outdoor application.

These relays may either open or close the controlled circuit when the light beam is interrupted. The relay tips are rated 1 ampere at 110 volts a.c., and will operate small magnetic devices directly. It is recommended that a small capacitor be connected across such inductive loads to insure maximum life of the relay tips.

For certain applications, an extended phototube holder can be added to CR7505-K2 and -K112 relays. A combination plug, cable, and phototube holder is available.

A special cover, CR7500-F1 can be added to CR7505-K2 or -K112 to increase the sensitivity and to make the units directional.

Order by CR number and specify voltage and frequency.

Nomenclature	With Tubes Each	Volts	Cycles	DIMEN. OF PANEL ENCLOSING CASE, IN.			Apprx. Ship. Wt., Lb.
				Height	Width	Depth	
CR7505-A100	\$98.00	115	60/50	9½	7¼	4⅞	35
	101.00	230	60/50				
		115	25				
		230	60				
CR7505-N110	126.00	115	60	10⅞	7⅞	8⅜	35
CR7505-K2	49.00	115	60/50	7¼	5	4½	5
CR7505-K112	53.00	115	60/25	7¼	5	4½	5
CR7505-K108	56.00	115	60/25	10¼	5¼	7⅞	9

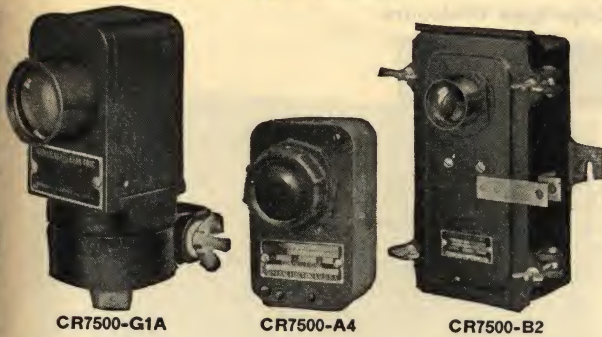
Numerous special photoelectric devices are also available.



## G-E CR7500 Photoelectric Accessories

### For Type CR7505 Photoelectric Relays

#### Light Sources



CR7500-G1A

CR7500-A4

CR7500-B2

In some cases, the operating light source for use with a photoelectric relay may be an ordinary incandescent lamp. For many applications, and for those in which the light source must be at some considerable distance from the phototube, a light source of greater intensity is required.

G-E CR7500 light sources employ a low voltage, concentrated-filament lamp of the type commonly used in automobile headlights. A double contact lamp socket permits the use of a single or double-filament lamp, to which voltage is supplied by a separately mounted transformer.

**CR7500-A4.** This general-purpose light source is designed for indoor service to be used with the CR7505 photoelectric relays. The unit consists of a metal conduit box. A lens with an arrangement for focusing is mounted on the cover of the box.

**CR7500-G1A.** For general-purpose, indoor application. Of cast-aluminum construction with a snap-on steel cover. The unit is provided with an adjustable optical system, adjustment being made by removing the back cover and loosening one screw. By means of an adjustable bracket, the unit may be mounted in any position, but it is preferable that the mounting be such that the lamp is upright.

A CR7500-K2 infra-red filter cap may be fitted to the end of the lens barrel so that an invisible beam can be produced where a visible beam would be objectionable.

**CR7500-G3A.** This light source for indoor service is similar to CR7500-G1A except that an additional lens is added to provide a short-focus concentrated beam of light. This unit will concentrate an intense spot of light approximately 1/4-inch in diameter at a distance of 2 inches from the lens. The appearance and dimensions are the same as CR7500-G1A.

**CR7500-B2.** Light source consists of a cast iron enclosing case with rubber gaskets, in which is mounted a No. 9TM321-A1 transformer. For outdoor service—weatherproof. The cover mounts a lens and arrangement for focusing and a double-contact lamp socket.

Order light sources by CR number. Specify voltage and frequency for transformer to be used with indoor light source; specify voltage and frequency for CR7500-B2.

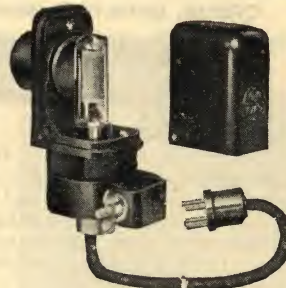
Nomenclature	Without Lamp or Transformer, Each	DIMENSIONS, INCHES			Approx. Ship. Wt. Lb.
		Height	Width	Depth	
CR7500-A4	\$8.40	4 1/4	2 1/2	3 5/16	6
CR7500-G1A	21.00	5 3/16	2 3/4	4 1/2	6
CR7500-G3A	23.80	5 3/16	2 3/4	4 1/2	6
*CR7500-B2	38.00	8 3/4	6 5/8	4 7/8	12

\*Price and number include a 60-cycle transformer. A 25-cycle transformer cannot be mounted in the outdoor type of light source because the physical dimensions of the transformer are too great. Separate outdoor 25-cycle transformer can be furnished at \$28.00 and the 60-cycle transformer can be omitted at \$7.00.

#### Indoor Light-Source Transformers

This transformer may be used to supply low voltage a.c. to one 21 or 32-candlepower lamp in any one of the indoor light sources. It is rated 110/220 volts primary with a secondary voltage to provide approximately 1000 hours' life from either a 21 or 32-candlepower, 6-8-volt automobile lamp. A tap is also provided on the secondary to give approximately 3000 hours' life from either a 21 or 32-candlepower, 6-8-volt lamp (with reduced illumination).

#### Accessories

CR7500-H1  
Phototube HolderCR7500-K2  
Infra-Red Filter  
CapSpecial Lens  
and Mask

**CR7500-F1 Special Cover.** This cover is provided with a light-collecting lens 3 inches in diameter, and a small aperture between the lens and the phototube. The light tunnel projects 3 inches from the front of the cover. The addition of this cover makes either CR7505-K2 or CR7505-K112 sensitive to an illumination of 1 foot-candle at the lens, and minimizes the effect of extraneous light.

**CR7500-H1 Phototube Holder, Cable and Plug.** If it is necessary to locate the phototube at some distance from CR7505-K2 or -K112 relays, this holder may be used. The dimensions of this unit are the same as those of the CR7500-G1A light source.

**CR7500-K2 Infra-Red Filter Cap.** This unit is a small cap which fits over the end of the lens barrel of the CR7500-G1A or -B2 light source to provide a practically invisible beam. The cap contains a filter glass which absorbs practically all of the visible energy radiated by the lamp, but permits the infra-red energy to pass. The photoelectric relays are sensitive to this infra-red energy.

**Special Lens and Mask.** This lens and mask is an accessory for use with the CR7500-H1 phototube holder (the type of phototube holder used with the CR7505-A100 and -N100) to minimize the effect of extraneous light and to make the unit directional. It consists of a lens barrel, a lens, and a mask or diaphragm located at the focal point of the lens. A small hole in the center of the mask permits light which enters approximately perpendicular to the plane of the lens to reach the phototube. For some special applications, the shape of the hole in the mask may be changed to permit the phototube to "see" only a definite area. The lens barrel fits into the phototube holder in place of the light tunnel normally employed.

No.	Description	For Use with	Each
CR7500-F1	Special Cover.....	CR7505-K2, -K112.	\$16.80
CR7500-H1	Phototube Holder, Cable and Plug..	CR7505-K2, -K112	16.80
CR7500-K2	Infra-Red Filter Cap.....	CR7500-G1A, -G3A, -B2.....	5.60
.....	Lens and Mask 1 1/2-In. Diam.....	CR7505-A100, -N110, CR7500-H1.....	5.60
.....	3-In. Diam.....	CR7505-A100, -N110, CR7500-H1.....	11.20
.....	Capacitor, 0.25 muf.....	CR7505-K2, -K112, -K108.....	2.30
.....	0.50 muf.....	CR7505-K2, -K112, -K108.....	3.20

†The 3-inch lens and mask use the same optical system as CR7500-F1.

Volts.....	115/230	†115/230	115/230	†115/230
Cycles.....	50/60	50/60	25	25
Each.....	\$7.00	8.40	11.20	28.00
Ship. Wt., pounds	2	2	5	

†Enclosed. ‡Weatherproof.



## G-E Enameled Resistors

CR9006, Individual Unmounted Units

CR9150, Units Mounted on a Base and with Perforated Cover

CR9158, Units in Perforated Cage-Type Enclosure



Form QD

FORM QL. Has stranded copper leads for making external connections.

FORM QD. Has stranded copper leads and porcelain bushings to facilitate mounting.

FORM QC. Designed for fuse clip mounting. Leads are connected to metal ferrules.

FORM QS. Provided with screw base for mounting in lamp sockets.

FORM QF. Provided with metal feet to which leads are connected and through which external connections are made.

## \*22-Watt Units

Form	Size	Ohms	Each	Form	Size	Ohms	Each
QL	K2673259	1-2000	\$ .55	QC	K2673261	1-2000	\$1.15
QD	K2673260	1-2000	.95	QF	K2673263	1-2000	.95

## \*57-Watt Units

QL	K2673264	1-1000	\$ .70	QF	K2673268	1-1000	\$1.20
QD	K2673265	1-1000	1.50	QS	K2673280	1-1000	1.20
QC	K2673266	1-1000	1.30				

## \*85-Watt Units

QL	K2673244	1-1500	\$ .95	QF	K2673269	1-1500	\$1.45
QD	K2673245	1-1500	1.40	QS	K2673281	1-1500	1.45
QC	K2673246	1-1500	1.60				

## \*122-Watt Units

QL	K2673248	1.2-2000	\$1.10	QF	K2673252	1.2-2000	\$1.60
QD	K2673249	1.2-2000	1.55	QS	K2673282	1.2-2000	1.60
QC	K2673250	1.2-2000	1.75				

## \*180-Watt Units

QL	K2673270	1.5-1500	\$1.50	QF	K2673274	1.5-1500	\$2.05
QD	K2673271	1.5-1500	1.95	QS	K2673283	1.5-1500	2.05
QC	K2673272	1.5-1500	2.15				

\*This rating is based on a single unit mounted with free ventilation. The rating is reduced if ventilation is hindered by adjacent units or by enclosure.

No. 2X930 Fuse Clip for 57-Watt Form QC Unit. each \$ .15

No. 2X931 Fuse Clip for 85, 122 and 180-Watt Form

QC Units. each .30

Two fuse clips are required for each unit.

## Ratings

Std. Resistance Values in Ohms	MAXIMUM AMPERES					Std. Resistance Values in Ohms	MAXIMUM AMPERES				
	22-Watt Unit	57-Watt Unit	85-Watt Unit	122-Watt Unit	180-Watt Unit		22-Watt Unit	57-Watt Unit	85-Watt Unit	122-Watt Unit	180-Watt Unit
1	4.5	....	....	....	....	400	.22	.37	.45	.55	.67
3	2.6	4.3	5.1	....	....	500	.20	.33	.40	.49	.60
5	2.0	3.3	4.0	4.9	6.0	600	.18	.30	.36	.45	.55
10	1.4	2.3	2.7	3.5	4.3	700	.17	.28	.34	.41	.50
15	1.1	1.9	2.3	2.8	3.4	800	.16	.26	.32	.39	.47
20	1.0	1.6	2.0	2.4	3.0	900	...	.25	.30	.37	.45
25	0.9	1.5	1.8	2.2	2.7	1000	...	.23	.28	.35	.43
30	0.8	1.3	1.6	2.0	2.4	1200	...	.21	.26	.32	.39
40	0.71	1.1	1.4	1.8	2.0	1400	...	.20	.24	.29	.35
50	0.63	1.05	1.2	1.5	1.9	1600	...	.185	.22	.27	.33
60	0.58	0.96	1.1	1.4	1.7	1800	...	.175	.21	.26	.32
75	0.52	0.86	1.0	1.3	1.6	2000	...	.16	.20	.24	.30
100	0.45	0.74	0.90	1.1	1.3	2500	...	.15	.18	.22	.25
125	0.40	0.66	0.80	1.0	1.2	3000	...	.13	.16	.20	.24
150	0.36	0.60	0.73	0.90	1.1	4000	...	...	.14	.17	.20
175	0.34	0.56	0.67	0.83	1.0	5000	...	...	.15	.19	
200	0.31	0.52	0.63	0.77	0.95	6000	...	...	...	.17	
250	0.28	0.47	0.56	0.69	0.84	8000	...	...	...	.14	
300	0.26	0.43	0.51	0.63	0.72	10000	...	...	...	.13	

†Resistance of standard units varies from 90 to 110 per cent of these values. Prices for units of less resistance variation will be quoted on request.

## Basic Net Prices Each

	22	57	85	122	180
Continuous Watt Rating (Open).....	.17	.5	.85	1.2	1.5
Minimum Special Ohms.....	1.	1.	1.	1.2	1.5
Minimum Standard Ohms.....	12000	40000	70000	100000	1000000
Maximum Standard Ohms.....	\$ .75	\$ .85	\$1.30	.....	.....
Between Minimum Special Ohms and Minimum Standard Ohms.....	.55	.71	1.00	.....	.....
1.0 to 1000 Inclusive.....	.....	.....	.....	\$1.10	.....
1.2 to 1000 Inclusive.....	.....	.....	.....	.....	\$1.50
1.5 to 1000 Inclusive.....	.....	.....	.....	.....	1.50
\$1500.....	.55	.75	1.00	1.10	1.50
\$2000.....	.55	.75	1.00	1.10	1.55
\$2500.....	.55	.75	1.00	1.15	1.55
\$3000.....	.55	.80	1.00	1.15	1.55
\$3500.....	.55	.80	1.00	1.15	1.60
\$4000.....	.55	.80	1.05	1.20	1.60
\$4500.....	.55	.85	1.05	1.20	1.60
\$5000.....	.60	.85	1.05	1.20	1.65
\$6000.....	.60	.85	1.10	1.25	1.70
\$7000.....	.65	.85	1.10	1.25	1.75
\$8000.....	.65	.90	1.10	1.35	1.75
\$10000.....	.65	.95	1.15	1.40	1.75
\$12000.....	.70	1.00	1.20	1.40	1.80
\$15000.....	.....	1.00	1.20	1.40	1.80
\$17000.....	.....	1.05	1.25	1.40	1.80
\$20000.....	.....	1.10	1.30	1.40	1.80
\$22500.....	.....	1.10	1.30	1.50	1.80
\$25000.....	.....	1.10	1.35	1.50	1.80
\$30000.....	.....	1.15	1.35	1.50	1.80
\$40000.....	.....	1.20	1.40	1.60	1.85
\$50000.....	.....	.....	1.45	1.60	1.85
\$60000.....	.....	.....	1.45	1.65	1.95
\$70000.....	.....	.....	1.50	1.75	2.00
\$80000.....	.....	.....	.....	1.85	2.15
\$90000.....	.....	.....	.....	1.95	2.15
\$100000.....	.....	.....	.....	2.05	2.25

†For intermediate watt ratings, use next larger listed rating.

§If intermediate ohm ratings are desired, use price of next higher listed rating.



## G-E Metal-Clad Switchgear Equipment

For General Power Service

With Magne-Blast Power Circuit Breakers

15000 Volts Maximum—500 Mva. Maximum—3-Phase, 3-Wire, 60 Cycles



Typical Light-Duty Metal-Clad Switchgear

Designed to provide the advantages obtainable in complete factory-assembled, metal-enclosed, safety-type switching equipments. Now available in standardized unit construction, for practically all varieties of general power applications and service, where the interrupting rating requirements for the power circuit breakers do not exceed 50000 kilovolt-amperes and the service voltage class is not in excess of 13200(Y) volts.

## Application

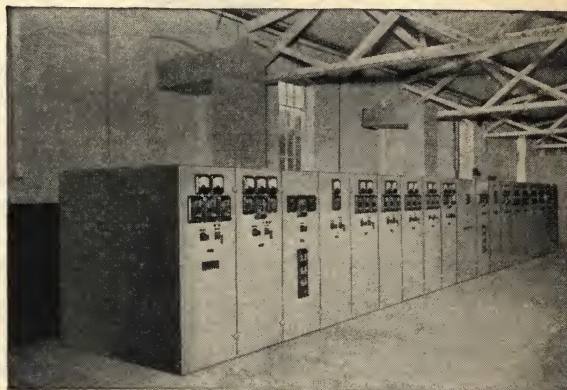
Applicable for general power service in central-station main and auxiliary circuits, steel mills, and other industrial plants, distribution substations, office buildings, hotels, theatres, department stores, hospitals, educational and public buildings, and other similar installations, to provide reliable control for generators, transformers, incoming power and tie lines, feeder circuits, bus-tie and bus-sectioning circuits, and synchronous and induction motors.

In the general design of this standardized switchgear, the anticipated requirements for the comprehensive field of its application have been carefully and fully studied, and all the advantages and outstanding constructive features, to provide properly for such application, have been adequately embodied in the factory-built unit construction.

It should be recognized that in the preparation of a listing of such standard equipment, as is contained in this catalog, it is necessary to generalize much of the information included. The purpose of such listings is to provide a quick simple method for estimating over-all costs, and space requirements, of entire projects, where rough total prices are required for appropriation purposes, etc. With such perspective in view, it will be realized that, for some specific jobs, actual final net quoted selling prices will frequently total materially less than the total estimating prices computed from the approximate price schedules and the actual over-all dimensions may differ from those listed.

**Service-Voltage Classes:** Standard equipment ratings are listed in accordance with system voltage classes as established by A.S.A. Standards, viz., 2400, 4160, 4800, 7200, 12000(Y), and 13200(Y) volts. The listed equipments are applicable within the nominal voltage ranges of each of these voltage classifications.

**Caution:** Systems having nominal service voltages of 4600 or 4800 volts, usually involve regulation conditions where actual voltages exceed these values for protracted intervals. Accordingly, for systems with these nominal service voltages, equipments listed for the 7200-service-voltage class should be selected and priced in every case.



Typical Installation with Magne-Blast Power Circuit Breakers, for General Power Service in a Large Industrial Plant

**System Neutral Grounding:** For installations where any of the listed equipments are applied on systems where the service-voltage class exceeds 4160 volts, it is desirable that the system neutral be grounded through a low value of impedance.

This provision is an important item in protection against overvoltage. The equipments which are listed for the 12000(Y) and 13200(Y) service-voltage classes are applicable only where the system neutral is grounded through a low value of impedance and adequate surge of overvoltage protective equipment also is installed.

**Frequency:** Although listed for 60 cycles, equipments can be furnished for operation at any other established commercial frequency. For applications at frequencies of 25 to 50 cycles, the listed estimating prices will apply.

## Construction

Sturdy construction will give service for many years, with minimum maintenance attention and expense.

Because the equipments herein listed are standard factory-built metal-clad units, any deviation from the standard listings of either the basic gear, or optional items, either by substitution, or otherwise, may necessitate an increase in price.

Designed for the adequate protection of machines and circuits, for safe and convenient operation, and for accessibility to component parts. Each complete switchgear equipment has a streamline appearance, which results from the use of the G-E standard line of semi-flush instruments, meters, relays, and other devices which are regularly and symmetrically mounted on the front and rear, smooth-steel enclosing panels.

Planned with reference to other similar units with which they may be required to line up, and the unit-type factory-assembled construction makes it easy to add extensions to an existing installation of an equipment composed of such units, without disturbing the harmonious appearance of the initial and complete installation, thus insuring maximum flexibility and adaptability.

Completely assembled at the factory, and shipped assembled, where feasible, or in the largest permissible number of units as a group, as determined by existing transportation and handling facilities.

Each standard metal-clad unit combines circuit breaker, disconnecting devices, interlocks, buses, connections, instruments, meters, control devices, instrument transformers, supporting frame, and enclosing structure in a single, factory-assembled unit per circuit controlled. All component parts are of G-E design and manufacture, of the type best suited to their function, and properly co-ordinated. Liberal factors of safety, both electrical and mechanical, to withstand severe service, are included.



## G-E Metal-Clad Switchgear Equipment

**Construction**

**Each group of associated primary devices**, such as the current transformers, the potential transformers, the buses and connections, is enclosed, where practical, in a separate grounded metal compartment. All circuits are exceptionally well-insulated.

**Potential-transformer compartments** are built in the well-known drawout construction, wherein the potential transformers and their primary fuses are mounted on a movable carriage. Access to the primary fuses is obtained only after the withdrawal of the carriage from the compartment, thus automatically disconnecting and isolating both the fuses and the potential transformers, and grounding them, to permit fuse replacement under safe conditions.

**Power circuit breaker** is effectively isolated from all other primary equipment, and so arranged that it may be completely disconnected from the bus and line, by lowering it from the connected position, (for operation-test purpose), and it may be entirely removed from the unit structure, for inspection, etc. Proper interlocks insure the proper sequence of operation, so that the breaker is always removed under safe conditions. Inspection of the breaker can usually be performed with perfect safety, because such routine service is ordinarily accomplished external to the unit stationary structure. Continuity of service of any circuit is obtained, during the inspection period, by the substitution of a spare breaker in place of the removed one. All units of equal rating and with like features are interchangeable.

All equipments are designed to withstand the insulation tests, and will operate within the temperature-rise limits, as prescribed by the N.E.M.A. and A.I.E.E. standards for enclosed switchgear.

The details of construction of the listed standard metal-clad switchgear units, and equipments, are fully and adequately illustrated and described in available G-E descriptive bulletins.

**Installation**

Prior to the physical installation of a standard metal-clad switchgear equipment, the floor can be prepared, conduits installed, and cables drawn, from previously prepared construction drawings, before the equipment is shipped from the factory. Then, only the power and control cable connections need to be made, and the removable elements (which are shipped separately) inserted in the stationary structures, in order to place the equipment into service. The incoming or outgoing cables can be brought in from above or below, according to the convenience of the installation. The cables are easily secured in the unit potheads, when ready to connect into service.

There is no chance for incorrect reassembly after shipment, nor is there involved any hunting for loose parts. This is an inherent asset and convenience when purchasing completely assembled equipment entirely built by a single manufacturer. Thus, is eliminated any divided responsibility of different manufacturers who contribute individual items for the erection of an assembled equipment.

High salvage value is obtained, because of the standard-unit type of construction and the sturdiness of the equipment. This makes it easy to move the equipment, either as a group or as an individual unit, simply by disconnecting cables, unbolting from foundations, etc., and lifting.

**General Information****Selection of Units**

All base units are listed according to the rating of the included oil circuit breaker. It is possible to choose a group of units, for an installation, having different breaker interrupting ratings. This is not objectionable, provided that the lower-rated breakers are adequate for the required interrupting duty.

It is general practice, however, and usually recommended, to include units of identical interrupting and current ratings, for purposes of economy, consistency in operation, and complete interchangeability of all removable elements.

**Protection of Machines and Circuits**

Provision is included throughout for automatically interrupting transformer, incoming-line, feeder, and motor circuits when the current exceeds a predetermined value over a predetermined period of time. This effectively protects generators against abnormal overcurrents from sources most likely to cause trouble and, beyond this, no automatic protection is provided in the basic equipment for generators. Differential relays for protection against internal generator trouble, however, are available as optional items. No automatic protection is furnished for exciters or generator field circuits.

Installations where the base units are to control both sides of power-transformer banks, optional items on differential protection equipment are offered.

Where parallel lines are involved and selective relaying arrangements are required, the problem should be submitted to your Distributor. For synchronous-motor units, automatic field-application and field-accelerating equipment are included.

**Heating**

At rated amperes, the temperature rise of the listed metal-clad units will not exceed the temperature requirements of the N.E.M.A. standards for metal-clad switchgear.

**Information Required With Order**

Give the complete ratings of all generators, transformers, feeder circuits, and motors to be controlled by the metal-clad switchgear.

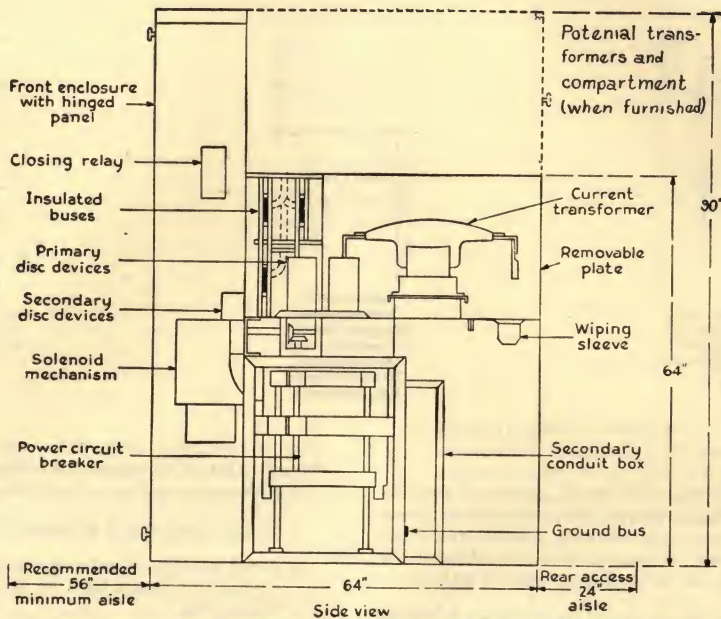
To assure promptness and efficiency in the execution of an order for this class of equipment, it is suggested that G-E Switchgear Information Form 13212 be filled in and accompany the order. If this form is not available, it is requested that the following information be furnished at the time the order is placed:

1. State, giving dimensions in feet, the maximum size of package that can be conveniently handled.
2. Give size, type, and direction of main leads, and direction of secondary leads.
3. Where the equipment is to line up with purchaser's present equipment, give complete information on the installed equipment.
4. Give name of person, or persons, to whom drawings and instruction books should be sent.
5. When equipment is to control machines already installed, the following information concerning the installed apparatus should be given:
  - (a) Name of manufacturer and complete ratings.
  - (b) Type of governor motor and rating (if used).
  - (c) Type of field rheostat (how operated, etc.).
  - (d) Field data.
6. Give location of the equipment, with reference to walls and available headroom.
7. Give the desired order of units from left to right, with accompanying sketch.
8. Give polarity of transformer banks (additive or subtractive) and connection sketch.
9. Furnish a one-line diagram of connections of all apparatus and feeder circuits.
10. Is system grounded? Where? If through a resistor, how much resistance?
11. If temperature meter is to be included, give length and size of meter leads.
12. Nameplates—give complete wording for any special marking or engraving.

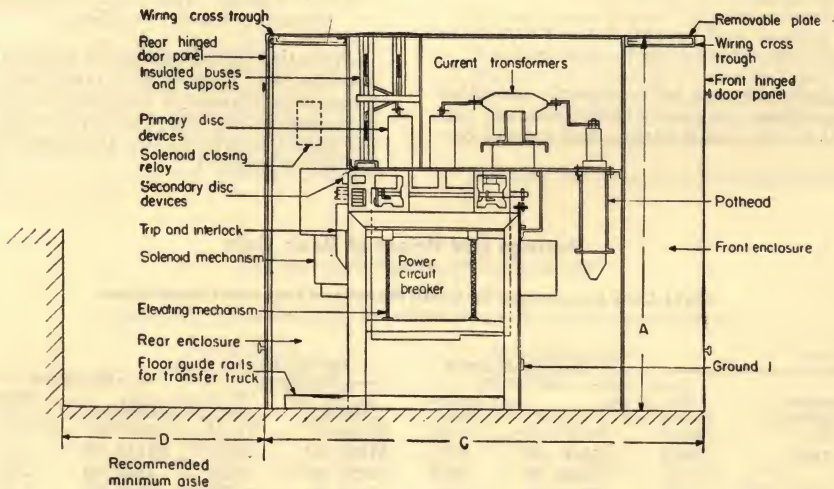


## G-E Metal-Clad Switchgear Equipment

For General Power Service



Construction and Dimensions of Light-Duty Metal-Clad Switchgear Unit—Width, All Units, 20 Inches (Except Bus-Section Unit, 30 Inches).



Construction and Dimensions of Master Metal-Clad Switchgear Unit.

Interrupting Rating of Power Circuit Breaker, Kva.	DIMENSIONS, INCHES				Interrupting Rating of Power Circuit Breaker, Kva.	DIMENSIONS, INCHES			
	Height A	Width of Each Unit *B	Depth †C	Recommended Aisle D		Height A	Width of Each Unit *B	Depth †C	Recommended Aisle D
50000	68	26	96	63	250000	68	26	96	63
100000	68	26	96	63	‡250000	82	36	96	75
150000	68	26	96	63	500000	82	36	96	75

\*Dimension B given here is that per single unit—where two units are included, this should be doubled.

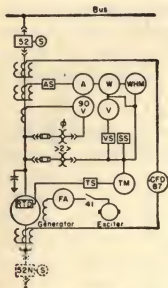
†Depth of the enclosures is 15 inches for each.

‡This is for 15 kilovolt breakers.

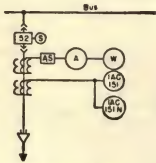


G-E Metal-Clad Switchgear Equipment

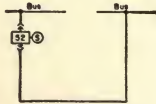
For General Power Service



Schematic Connections Combined A.C. Generator and D.C. Exciter Equipments



Schematic Connections Single-Circuit Feeder, Incoming-line, Transformer Equipments



Schematic Connections Bus-Section Equipments

Includes (all equipments):

- 1 Metal-clad unit, complete with stationary and removable elements, including mechanical interlocks, primary and secondary disconnecting devices, automatic shutters, and front and rear enclosures (rear enclosures for master equipments) with hinged instrument panels.
- 1 Power circuit breaker, 3p-st, complete with d-c solenoid operating mechanism, trip coil, auxiliary switches, closing relay, control switch and indicating lamps, and breaker elevating mechanism.
- 1 Complement of instruments and meters as indicated, in full lines, in "schematic connections."
- 1 Complement of current and potential transformers as indicated, in full lines, in "schematic connections."
- 1 Set of insulated 3-phase buses, with supports, insulated copper interconnections, necessary cable-terminal connectors, terminal blocks, small wiring, and ground bus.

In addition, Generator and Exciter Equipments:

- 1 Generator voltage regulator, complete with accessories.
- 1 Relay, 3-element generator differential protective.
- 1 Field switch (discharge resistor not included) and provision for operation of field rheostats (rheostats not included).
- 1 Auxiliary compartment for secondary control.
- 1 Auxiliary compartment, separately mounted (for master equipment only).
- 1 Set of surge capacitors, to be mounted at the generator terminals by the purchaser.

Potential transformers are not included in feeder, incoming-line, or transformer equipments. For installations where bus-connected potential transformers are included, and wattmeters, watthourmeters, or voltmeter with transfer switch is added, two transformers and a compartment should be ordered.

Ratings and Prices of Basic Gear

Light-Duty Equipments for Small Plants and Industrial Installations

RATINGS			Combined Generator and Exciter		Feeder, Line or Transformer		Bus Section		Spare, Removable Element for Any Equipment Listed Herein	
Power-Circuit-Breaker Interrupting Rating, Kva.	Service-Voltage Class	Continuous Amperes	*Complete Equipment	Approx. Ship. Wt., Lb.	*Complete Equipment	Approx. Ship. Wt., Lb.	*Complete Equipment	Approx. Ship. Wt., Lb.	*Complete Equipment	Approx. Ship. Wt., Lb.
50000	2400	600	\$5500.00	4625	\$1865.00	2225	\$1140.00	1825	\$730.00	600
		1200	5890.00	5025	2255.00	2625	1525.00	2225	1120.00	700
50000	4160	600	5720.00	4825	1865.00	2225	1140.00	1825	730.00	600
		1200	6110.00	5225	2255.00	2625	1525.00	2225	1120.00	700

Master Equipments for General Power Service

100000	2400 and 4160	600	\$8075.00	7625	\$3595.00	3700	\$2205.00	2965	\$1535.00	1150
		1200	8560.00	8000	4080.00	4050	2650.00	3275	1980.00	1250
		600	8315.00	7650	3835.00	3700	2440.00	2975	1770.00	1350
150000	2400 and 4160	1200	8795.00	7950	4320.00	4050	2890.00	3275	2215.00	1450
		2000	11720.00	9550	7250.00	5650	5745.00	4765	4240.00	2900
250000	2400 and 4160	1200	9475.00	7950	5005.00	4450	3570.00	3700	2890.00	1500
		2000	12400.00	9850	7930.00	5950	6430.00	5125	4920.00	3100
†250000	4800 to † 13200(Y)	1200	13215.00	9500	6215.00	4650	4435.00	3800	3320.00	1500
		2000	15990.00	11,000	9140.00	6175	7280.00	5225	5485.00	3100
†500000	4800 to † 13200(Y)	1200	14085.00	10,700	7085.00	5900	5300.00	5050	4195.00	3200
500000	.....	2000	16835.00	12,350	9830.00	6600	7970.00	5625	6175.00	3400

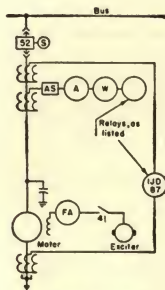
\*Prices are approximate only; freight allowed to the nearest railroad freight station within the United States.

†Applicable only where the system neutral is grounded through a low value of impedance.

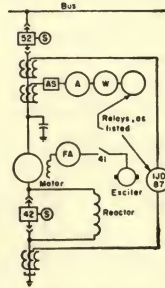


## G-E Metal-Clad Switchgear Equipment

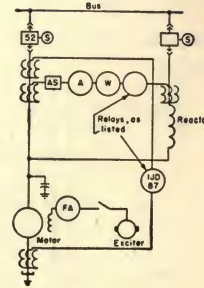
## Synchronous-Motor or Condenser Equipments



**Schematic Connections  
Full-Voltage  
Start**



**Schematic Connections  
Neutral-Reactor  
Start**



**Schematic Connections  
Line-Reactor  
(Parallel) Start**

Included (all equipments):

- 1 Metal-clad unit, complete with stationary and removable elements, including mechanical interlocks, primary and secondary disconnecting devices, automatic shutters, and front and rear enclosures (rear enclosures for master equipments) with hinged instrument panels.
- 1 Power circuit breaker (main or running), 3p-st. Complete with d.c. solenoid operating mechanism, trip coil, auxiliary switches, closing relay, control switch and indicating lamps, and breaker elevating mechanism.
- 1 Complement of instruments as indicated, in full lines, in the schematic connections.
- 1 Complement of current transformers as indicated in the schematic connections.
- 1 Set of protective relays (thermal, 2-element, No. 49; 3 short-circuit selective, No. 50; under voltage, No. 27; for motors less than 1500 hp, or for motors rated 1500 hp. and above relay equipment includes one 3-phase current-balance relay, No. 46; one 3-phase undervoltage and phase sequence relay, No. 47; thermal relay, No. 49; 1 over-current relay, No. 51; and one 3-phase differential protective relay, No. 87).

- 1 Field-application equipment (to be mounted separately in vicinity of motor) including metal-enclosed auxiliary compartment with enclosed panel and a hinged instrument panel (Note: for light-duty equipments the field application equipment is mounted in the main compartment)—includes field contactor and discharge resistor, synchronous speed relay, No. 13; field relay, No. 40; incomplete sequence relay, No. 48 (where required); and exciter relay, No. 53 (where required).

For other than full-voltage start, necessary starting breakers, breaker compartment, metal-clad units, etc., are included.

Insulated buses, interconnections, bar supports, ground bus, small wiring, etc. included.

All equipments are complete automatic-start.

Not included: Potential transformers and compartment. If meters or equipments are added requiring potential source and if no bus-connected potential transformers are included for the installation, two potential transformers and compartment should be added.

Starting reactors or autotransformers not included.

## Ratings and Prices of Basic Gear

## Light-Duty Equipments for Small Plants and Industrial Installations

RATINGS		Full-Voltage Unloaded Start				Neutral-Reactor Unloaded Start				Line-Reactor (Parallel) Unloaded Start				
Power-Circuit-Breaker Interrupting Rating, Kva.	Service- Voltage Class	Contin- uous Am- peres	Motor Less Than 1500 HP.		Motor Rated 1500 HP. and Above		Motor Less Than 1500 HP.		Motor Rated 1500 HP. and Above		Motor Less Than 1500 HP.		Motor Rated 1500 HP. and Above	
			*Each	Approx. Ship. Wt., Lb.	*Each	Approx. Ship. Wt., Lb.	*Each	Approx. Ship. Wt., Lb.	*Each	Approx. Ship. Wt., Lb.	*Each	Approx. Ship. Wt., Lb.	*Each	Approx. Ship. Wt., Lb.
50000	4160	600	\$3380.00	3000	.....	.....	.....	.....	.....	.....	\$5375.00	6000	.....	.....
Master Equipments for General Power Service														
100000	2400 and 4160	{ 600 1200	\$4745.00 5370.00	4800 5125	\$5605.00 6660.00	5100 5425	\$8450.00 8930.00	9000 9325	\$9735.00 10215.00	9300 9650	\$8400.00 9375.00	9150 9800	\$9685.00 10660.00	9500 10100
150000	2400 and 4160	{ 600 1200	5120.00 5610.00	4800 5125	6410.00 6890.00	5100 5425	8690.00 9165.00	9000 9325	9975.00 10465.00	9300 9650	8865.00 9840.00	9150 9800	10155.00 11130.00	9500 10100
250000	2400 and 4160	1200	6285.00	5550	7570.00	5850	9850.00	9750	11135.00	10100	11200.00	10650	12495.00	11000
†250000	{ 4800 to † 13200(Y) }	1200	7930.00	6000	9315.00	6400	14560.00	11350	15955.00	11725	14945.00	12150	16335.00	12500
†500000	{ 4800 to † 13200(Y) }	1200	8795.00	7200	10185.00	7650	15435.00	12550	16835.00	13000	16685.00	14500	18070.00	15000

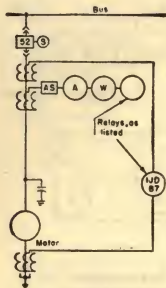
\*Prices are approximate only; freight allowed to the nearest railroad freight station within the United States.

†Applicable only where the system neutral is grounded through a low value of impedance, and where adequate surge or overvoltage protective equipment also is installed.

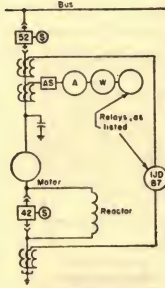


G-E Metal-Clad Switchgear Equipment

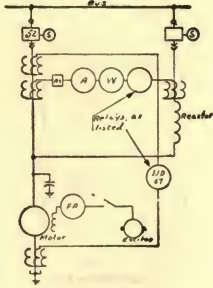
Induction-Motor Equipment



Schematic Connections Full-Voltage Start



Schematic Connections Neutral-Reactor Start



Schematic Connections Line-Reactor (Parallel) Start

- Included (all equipments):
- 1 Metal-clad unit, complete with stationary and removable elements, including mechanical interlocks, primary and secondary disconnecting devices, automatic shutters, and front and rear enclosures (rear enclosures for master equipments) with hinged instrument panels.
  - 1 Power circuit breaker (main or running), 3p-st., complete with d.c. solenoid operating mechanism, trip coils, auxiliary switches, closing relay, control switch and indicating lamps, and breaker elevating mechanism.
  - 1 Ammeter and necessary current transformers, as indicated in schematic connections.
  - 1 Complement of protective relays, as follows: For motors less than 1500 hp.—undervoltage, No. 27; incomplete sequence, No. 48, thermal, No. 49; and 3 instantaneous short-circuit selective No. 50. For 1500 hp. and above—

3-phase current-balance, No. 46; 3-phase undervoltage and phase sequence, No. 47; thermal, No. 49, overcurrent, No. 51; and 3-phase differential, No. 87.

Insulated buses, copper interconnections, bus supports, ground bus, small wiring, etc.

For other than full-voltage start, necessary starting breakers, breaker compartments, metal-clad subsidiary units, etc., are included.

All equipments are complete automatic-start.

Not included: Potential transformers. For installations where no bus-connected potential transformers are provided add for the complete installation, one set of two transformers and one potential transformer compartment.

Starting reactors or autotransformers not included.

Ratings and Prices of Basic Gear

Light-duty Equipment for Small Plant and Industrial Installations

RATINGS		Full-Voltage Automatic Start				Neutral-Reactor Automatic Start				Line-Reactor Start, (Parallel)			
		Motor Less Than 1500 H.P.		Motor Rated 1500 HP. and Above		Motor Less Than 1500 H.P.		Motor Rated 1500 HP. and Above		Motor Less Than 1500 H.P.		Motor Rated 1500 HP. and Above	
Power-Circuit Breaker Interrupting Rating, Kva.	Service Voltage Class	Continuous Am-peres	*Each	Approx. Ship. Wt., Lb.	*Each	Approx. Ship. Wt., Lb.	*Each	Approx. Ship. Wt., Lb.	*Each	Approx. Ship. Wt., Lb.	*Each	Approx. Ship. Wt., Lb.	*Each
50000	4160	600	\$2320.00	2400	.....	.....	.....	.....	\$4160.00	4900	.....	.....	.....

Master Equipment for General Power Service

100000	2400 and 4160	{ 600 1200	\$3835.00 4320.00	4100 4400	\$5120.00 5610.00	4400 4700	\$6955.00 7440.00	7950 8275	\$8255.00 8735.00	8250 8575	\$7475.00 8450.00	8400 9050	\$8755.00 9730.00	8700 9350
150000	2400 and 4160	{ 600 1200	4060.00 4550.00	4100 4400	5360.00 5835.00	4400 4700	7195.00 7685.00	7950 8275	8480.00 8970.00	8250 8575	7945.00 8920.00	8400 9050	9230.00 10200.00	8700 9350
250000	2400 and 4160	1200	5230.00	4800	6520.00	5100	8365.00	8675	9650.00	9000	10270.00	9875	11570.00	10,200
†250000	{ 4600 to † 13,200(Y) }	1200	6870.00	5300	8255.00	5700	12965.00	10,250	14365.00	10,700	13750.00	11,400	15125.00	11,800
†500000	{ 4600 to † 13200(Y) }	1200	7735.00	6500	9130.00	6900	13845.00	11,500	15240.00	12,000	15470.00	13,800	16870.00	14,225

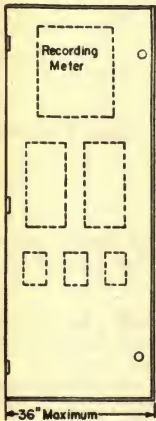
\*Prices are approximate only; freight allowed to the nearest railroad freight station within the United States.

†Applicable only where the system neutral is grounded through a low value of impedance.

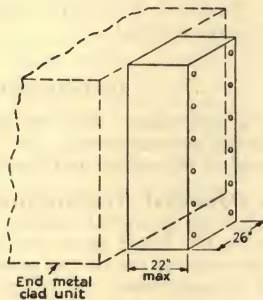


## G-E Metal-Clad Switchgear Equipment

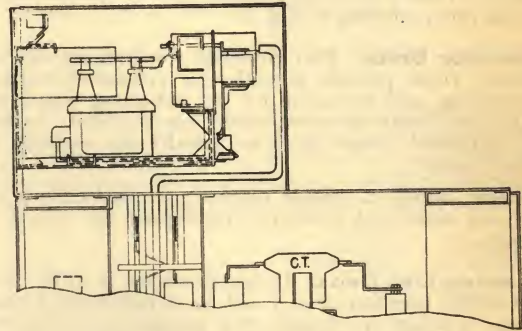
For General Power Service



**Auxiliary Compartment**  
(Height and Depth Same as  
Base Unit Adjacent)



**Bus-Entrance Compartment**



**Superstructure-Type Potential-Transformer Compartment.** (Width  
is Same as That of Unit Located Beneath Compartment.)

### Compartments

Either an auxiliary, or a superstructure-type, potential-transformer compartment, should always be included and priced for the mounting of any potential transformers which are selected for addition to the listed basic metal-clad equipments.

#### Auxiliary Compartment

Auxiliary compartments, structure high, for location at any position in the main, or subsidiary, metal-clad gear line-up, or for mounting independently, are available for many practical applications, such as (1) An incoming-line, or feeder-tie compartment for housing group-operated disconnecting switches, buses, connections, and pothead; (2) As a potential-transformer compartment for housing up to a maximum of two sets of 2, or 3, potential transformers with their primary cutouts, and connections (drawout construction); and (3) As an instrument-and-metering compartment for housing one set each of current and potential transformers, and accommodating integrating and recording meters. These compartments also can be readily applied for the housing of power-station operating accessories, such as tripping batteries, control power transformers, etc.

The compartment is always furnished either with hinged front and rear enclosures, or with a hinged front enclosure only (identical to the enclosure furnished for the basic metal-clad units selected for the line-up), and required insulated buses and connections.

#### Bus-Entrance Compartment

A bus-entrance compartment is required for all installed metal-clad units, where no provision has been included for an incoming line (such as a metal-clad unit or an auxiliary compartment), in order to provide a suitable means of joining the incoming power cables to the bus.

The compartment is always located at the end of the metal-clad line-up, and includes bus extension, potheads, and connections. The incoming power cables may be connected to enter the compartment either from above or below.

#### Potential-Transformer Compartment

(Superstructure Type)

All potential transformers require a separate enclosing compartment. The structure-high auxiliary compartment is the

preferred recommendation for enclosing the potential transformers. However, because crossovers primary of connections for such transformers are strictly forbidden in a metal-clad switchgear line-up, and all potential transformers must be located immediately adjacent to the circuit with which they are associated, installation requirements may dictate the use of the superstructure type of potential-transformer compartment. For such cases, the compartment is located immediately above the basic primary-gear unit of the circuit with which the transformers are associated. Drawout construction for the transformers and their primary fuses, with automatic grounding facility, is included. The compartment is sufficiently large to accommodate one set of 2 or 3 transformers, with their primary fuses, plus primary and secondary insulated connections.

Description	Master Equipment		Light-Duty Equipment	
	Each	Ship. Wt., Lb.	Each	Ship. Wt., Lb.
Auxiliary Compartment, with Front and Rear Enclosures, with Hinged Panels.....	\$715.00	1150	\$300.00	500
Potential-Transformer Compartment, Superstructure Type.....	240.00	150	85.00	125
Bus-Entrance Compartment, Including Pothead Provision for Terminating Main Power Cables.....	520.00	400	215.00	150

\*Front enclosure only.

#### Group-Operated Disconnecting Switches (For Mounting in Auxiliary Compartment) (For Master or Light-Duty Equipment)

Item	Continuous Rating, Amperes	3-Sp-St.		3-Sp-Dt.	
		Each	Ship. Wt., Lb.	Each	Ship. Wt., Lb.
122	600	\$360.00	250	\$715.00	500
123	1200	520.00	300	1040.00	600
124	2000	1040.00	400	2080.00	800
125	3900	1530.00	800	3055.00	1600

†Consists of 3—sp-st. switches, group-operated by a manually operated mechanism, and one mechanical interlock.

†Consists of 3—sp-dt. switches, group-operated by a manually operated mechanism, and two mechanical interlocks.



## G-E Metal-Clad Switchgear Equipment

## Necessary Additional Accessories

## Potential Transformers

While the price of each metal-clad unit listed includes the potential transformers essential to the proper operation of the standard listed equipment, the selection of certain of the Optional items may make additional potential transformers necessary. Those thus needed should be determined from the following rules, referring to Fig. 1.

**Generator Units.** Two potential transformers (A) are included. Those provide potential for voltmeter readings, synchronizing, and excitation for the indicating wattmeter, and also for a watthour meter, should one be added. Accordingly, additional transformers are usually not required for generator units.

However, should a voltage regulator be used (this is not listed), an additional potential transformer (B) would be required.

**Incoming-Line Units.** If synchronizing is to be done, one potential transformer (C) will be required. If 3-phase voltmeter readings are desired, or if wattmeters or watthour meters are added, or all three, plus synchronizing, a total of two potential transformers will be required at (C). Exception: Where the installation includes two bus potential transformers (D), the wattmeter or watthour meter may be excited from them, in which case only the one synchronizing transformer would be needed at (C).

**Power-Transformer Units.** If watthour meter is added to a base unit, two potential transformers are required at (E), unless station transformers (D) are provided.

**Bus Potential Transformers.** To minimize the number of potential transformers which would otherwise be required, it is practical to include in an installation one set of transformers (D) connected to the station bus and from which all the potential coils of meters, etc., are excited through a potential bus.

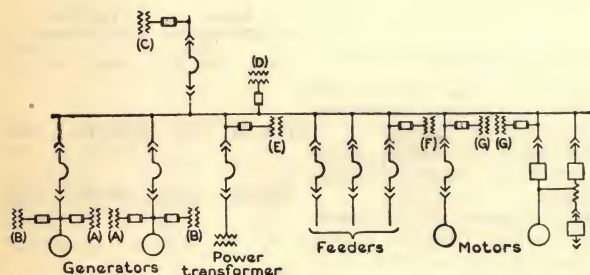


Figure 1

**Feeder Units.** Where meter is added to a feeder base unit, two potential transformers (F) are required, except where bus potential transformers (D) are provided.

**Motor Units.** The base units all include one potential transformer (G) for manually operated breakers, or one control power transformer at (G) for electrically operated breakers. If a watthour meter is to be added, an additional potential transformer is required at (G) for manually operated breaker units, or two potential transformers at (G) for electrically operated breaker units. The use of the control power transformer for meter excitation is *not recommended*. Where bus potential transformers (D) are provided, the potential transformers (G), with their compartments, may be omitted, an optional item is listed to cover this.

\*Potential Transformers for 60-Cycle Service  
(Including Current-limiting Primary Fuses)

Maximum Circuit Volts	Each	Ship. Wt., Lb.
2400	\$130.00	70
4800	195.00	125
13800	260.00	180

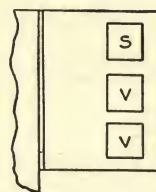
\*Not included: Enclosing compartment. Add, if required, per schedules listed.

## Instrument Brackets

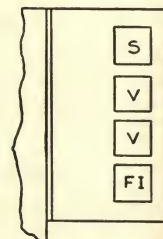
These instrument brackets are of the swinging type, with perforated rear enclosure. As a rule, they are located at the right end of the metal-clad line-up.

**No Potential Transformers Included.** In all cases where proper potential transformers have not been provided in either the listed base unit or by added "option," it is necessary to add the proper number of potential transformers, plus a compartment, for operating in conjunction with the instruments included on the brackets.

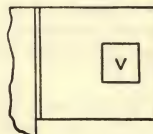
## For Installations Having Two or More Generators, or Incoming Lines, with Which Generators Must be Synchronized



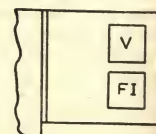
One synchroscope, 2  
voltmeters.  
Weight, 120 pounds.  
Each..... \$360.00



One synchroscope, 2  
voltmeters, 1 frequency  
meter. Weight, 170 pounds.  
Each..... \$585.00

For Use Where Synchronizing Is Not Required and Where  
No Voltmeter Is Present On Panel

One voltmeter.  
Weight, 60 pounds.  
Each..... \$170.00



One voltmeter, 1 fre-  
quency meter.  
Weight, 110 pounds.  
Each..... \$290.00

## Ground-and-Test Devices

A portable ground-and-test device can be furnished, to provide facilities for readily grounding either the bus side, or the outgoing-cable side, of a master metal-clad unit, or for the phasing out of operating circuits.

This device includes three through studs which are shaped similar to the bushings of the removable power circuit breakers furnished in the metal-clad switchgear units, so that they can be readily fitted into the stationary disconnecting devices of such a unit. The three studs are adjustable, as a unit, on the device, so that their position may be varied for insertion in either the bus side, or the cable side of the stationary devices of the metal-clad stationary structure.



## G-E Metal-Clad Switchgear Equipment

## Necessary Additional Accessories

## Ground-and-Test Devices

The lower ends of the studs are formed as terminals, to permit the ready attachment of grounding or testing-equipment cables (which are furnished by the purchaser).

The framework of the device is mounted on wheels, so that it is readily portable to a proper position in the stationary structure of the metal-clad unit, whence it can be raised, lowered, or withdrawn in the same manner as the removable element of that unit.

The use of this ground-and-test device is recommended for installations where operating requirements stipulate that circuits shall be entirely disconnected from all sources of potential, and the circuit dead-grounded when work of any kind is to be performed on the circuit. Also, it is recommended as an adjunct to cable-testing equipments, as a means of ready contact with the circuit cables and conductors, either for the regular standard high-voltage testing procedure, or for the proper phasing out of the circuit connections.

Maximum Service-Voltage Class	Each	Ship. Wt., Lb.
4160	\$520.00	250
13200(Y)	620.00	300

## Necessary Station Accessories

One set of necessary station accessories is recommended for each complete metal-clad installation, to provide proper facilities for (a) removing a removable element from the stationary structure, (b) inserting the spare removable element in the stationary structure while the original is being transported to another locality, and (c) for convenience in breaker test and inspection.

These accessories consist of two transfer trucks and a testing cabinet.

One of the trucks is used to transport the spare removable element to a unit while, at the same time, the other truck is used for removing the element from that unit. This facilitates and reduces the time required to perform the removal-replacement operation, thus reducing outage to a minimum.

Description	MASTER EQUIPMENT		LIGHT DUTY EQUIPMENT	
	Each	Wt., Lb.	Each	Wt., Lb.
1—Set of Metal-Clad Gear Accessories.....	\$430.00	700	\$215.00	575

## Optional Additions or Modifications

Description	Each	Ship Wt., Lb.
For Any Generator Equipment		
*Add 1—Complete Ground-Detector Equipment:		
For 2400-Volt Service-Voltage Class.....	\$1010.00	1050
For 4160 and 4800 Service-Voltage Classes.....	1170.00	1200
For Service-Voltage Classes 7200 to 13200(Y).....	1530.00	1475
For Power-Transformer Service:		
†Add 1—Differential-Relay Protective Equipment.....	620.00	100
§Current-Transformer Surcharge, Where Required.....	290.00	300
For Any Incoming-Line Equipment:		
†Add 1—Indicating Voltmeter with Suitable Scale, and a Voltmeter Transfer Switch.....	130.00	15
†Add 1—Indicating Wattmeter, or Varmeter, with Suitable Scale.....	165.00	25
†Add 1—Synchronizing Switch.....	50.00	5
For Motor Equipments:		
†Add 1—Integrating Watthour Meter.....	195.00	50
For Any Installation or Equipment:		
†Add 1—Set of Bus Differential Relays.....	545.00	100
Current-Transformer Surcharge for Each Circuit Affected.....	295.00	300
†Add 1—Graphic Watthour Demand Meter, 3-Phase, Single-Circuit.....	455.00	100
Surcharge for Each Circuit Affected.....	295.00	300
†Add 1—Graphic Voltmeter.....	310.00	50
Add 1—Graphic Ammeter.....	310.00	50
†Add 1—Reactive Kilovolt-Ampere-Hour Meter, and Separate Demand-Meter Combination.....	650.00	300
Surcharge for Each Circuit Affected.....	295.00	300
For Any Light-Duty Equipment:		
Add 1—Portable Electric Drill, with Adapter, to Operate Elevating Mechanism.....	215.00	30

\*Includes triplex voltmeter, three potential transformers, and compartment. Only one ground-detector equipment is required for a complete installation.

†Not included: Any current-transformer provision.

‡Not included: Potential transformers. Where not otherwise provided in the installation, proper potential transformers and compartment must be added, and priced in accordance with the schedules listed elsewhere.

||Includes provision for necessary current transformers.

§Includes current transformers for location on one side of the transformer bank, in case they are not already provided in a switching unit for that side of the bank. The transformers will be mounted, either in the switching unit selected for that side of the transformer bank, or by the purchaser, in the proper location.

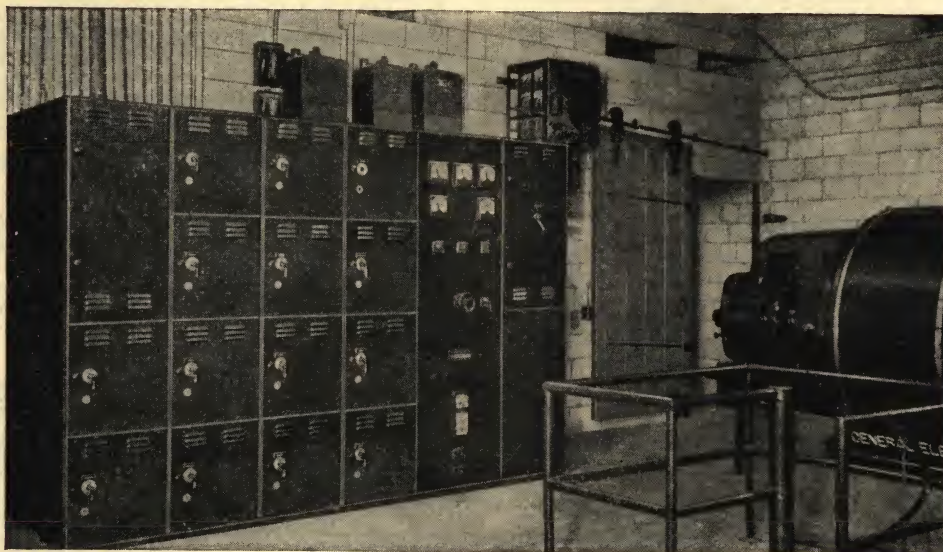


## G-E Standard Metal-Enclosed Low-Voltage A. C. Switchboards

## With Drawout Air Circuit Breakers

600 Volts Maximum—3-Phase, 3-Wire, 60 Cycles

Interrupting Ratings—15000 to 100000 Amperes



Installation View of a Metal-Enclosed, Low-Voltage, Drawout Air-Circuit-Breaker Switchboard, Including a Generator Unit and a Number of Feeder-Section Units (Electrically Operated Generator-Field Rheostat Mounted External to the Switchboard)

General Electric has available a complete line of metal-enclosed drawout air-circuit-breaker switchboards rated 250 volts [d.c.] 600 volts [a.c.] in current ratings up to 4000 amperes.

Each breaker is mounted on a carriage that is as easily drawn out as a file-cabinet drawer, and the breaker is easily removable from the carriage, for adjustment or repair. The breaker is equipped with self-coupling disconnecting devices, so that when the carriage is drawn forward the breaker is completely disconnected from all main connections. Mechanical interlocks prevent the withdrawal, or the inserting, of a breaker carriage, unless the breaker is open.

The dead-front drawout air-circuit-breaker switchboard provides the same type of high-quality safe service for the low-voltage plant as metal-clad switchgear provides for 2500 to 15000-volt plants. The following list includes some of the advantageous features of the dead-front drawout switchboard:

**Completely Metal-Enclosed Equipment;** assures safety to personnel by preventing accidental contact with live parts.

**Removable Breaker Units;** facilitate inspection and maintenance.

**Interchangeable Breaker Units;** provide maximum availability of power.

**Mechanical Interlocks;** prevent improper sequence of operation.

**Factory-Built, and Shipped Assembled;** assures the receipt of equipment that is ready to operate, with low and predictable installation costs.

These equipments incorporate the latest improved features to provide inexpensively for the simple, safe, and reliable control of 600-volt (or less) a.c. generators, power transformers, incoming and outgoing feeder lines, and synchronous and induction motors (full-voltage-started), which may be used for general power and lighting service in power plants, municipal and industrial installations, and such commercial structures as

office buildings, banks, hotels, theaters, department stores, hospitals, and educational and public buildings, where the total generating capacity connected to the station bus will not exceed the maximum limits listed in Table 1.

Table 1

Maximum Permissible System Generator Capacity Connected to Station Bus as Determined by Feeder-Breaker Interrupting Ratings

Type of Breaker	Interrupting Rating of Feeder Breaker, Amperes	MAXIMUM CONNECTED GENERATING CAPACITY, KVA.		
		240 Volts	480 Volts	600 Volts
AE-1-15	15000	325	600	750
AE-1-25	25000	550	1000	1250
AL-2-50	50000	1125	2000	2500
AL-2-75	75000	1700	3000	3750
AL-2-100	100000	2275	4000	5025

In the general design of this class of gear, the anticipated requirements, for the comprehensive field of their application, have been carefully and fully studied, and all the advantages and outstanding constructive features to provide properly for such application have been fully incorporated in these standard equipments.

The equipments throughout are of the highest quality manufactured, and may be relied upon to give efficient and satisfactory service for many years, with minimum maintenance attention and expense.

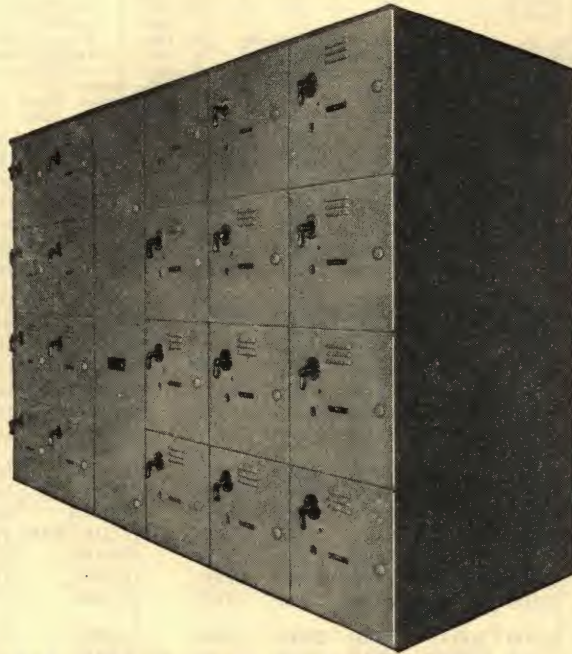
Because these units constitute standard switching equipments, any deviations from the standard listings of either the units, or the optional items, either by substitution or otherwise, may necessitate an increase in price.

**Frequency.** Although listed for 60 cycles, the panels and equipment can be furnished for operation at any other established commercial frequency.



## G-E Standard Metal-Enclosed Low-Voltage A.C. Switchboards

With Drawout Air Circuit Breakers



Metal-Enclosed Drawout Air-Circuit-Breaker, Feeder Switchboard;  
Bus Transition Unit Located at Approximate Center

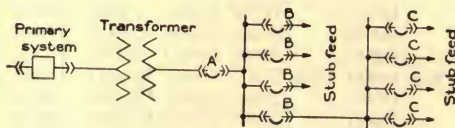


Figure 1

## Other Applications

Similar standard metal-enclosed switchboard equipments for the control of direct-current apparatus and circuits can be furnished. Prices and data will be submitted upon request.

## Cascading of Breakers

1. In general, air-circuit-breaker interrupting ratings should equal or exceed the fault currents obtainable at the locations where the breakers are to be installed. For relatively large installations, however, where a number of feeder circuits are fed from one or more power sources, it may be economically justifiable to install air circuit breakers in cascade, which means that only the breakers nearest to the source of power need to have interrupting ratings equal to, or in excess of, the obtainable fault current; while breakers farther from the source may have successively lower ratings.

2. When a single air circuit breaker is located between the power source and the load, its interrupting rating must be equal to, or greater than, the average total calculated rms current (including the d.c. component) at 0.5 cycle from the inception of the circuit.

3. Where there are two or three breakers located between the power source and the load, with no appreciable reactance between breakers and buses, cascaded or backed-up breakers may be applied beyond their published interrupting ratings, as follows:

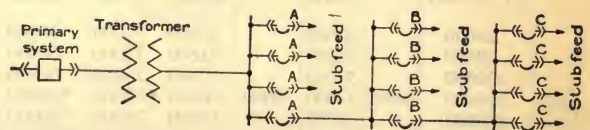


Figure 2

(a) The breaker which is connected directly to the power source must have the same interrupting rating as for a single-breaker installation, per paragraph 2, above.

(b) The second breaker in the cascade may be applied, up to 200 per cent of its published interrupting rating, if based on the currents calculated for the first breaker, per (a).

(c) The third breaker in the cascade may be applied up to 300 per cent of its interrupting rating, if based on currents calculated for the first breaker, per (a). Further cascading cannot be done.

4. The principle of cascading is based upon the fact that breakers of lower interrupting ratings are backed up by breakers of higher interrupting ratings. In order to obtain this backing up properly in cases of severe fault, it is essential that the main breaker trip instantaneously, and at approximately the same time as the smaller breaker.

5. In Table II, are listed fault currents for various power-transformer installations, together with the motor short-circuit-current contributions, and also the combinations of breakers which may be used in cascade for such installations.

The values of short-circuit current listed are based on certain assumed conditions, as stated in the notes under the tables, and, on the interrupting-rating requirements for the transformer-primary power circuit breaker. Also, values are listed for the case where the maximum short-circuit kilovolt-ampere available from the primary system is unlimited.



## G-E Standard Metal-Enclosed Low-Voltage A.C. Switchboards

\*Table II—Application Tables at 240 and 480 Volts

Trans- former Rating, 3-Ph. Kva. and Im- pedance Per Cent	Max. Short- circuit Kva. Available from Primary System	Normal Load Con- tin- uous Cur- rent Amp.	220-240 Volts								440-480 Volts							
			SHORT-CIRCUIT CURRENT, TOTAL RMS., AMPERES			INTERRUPTING RATING OF G-E AIR CIRCUIT BREAKER RECOMMENDED				Normal Load Con- tin- uous Cur- rent, Amp.	SHORT-CIRCUIT CURRENT, TOTAL RMS., AMPERES (AVERAGE 3-PHASE AMP.)			INTERRUPTING RATING OF G-E AIR CIRCUIT BREAKER RECOMMENDED				
			Trans- former Alone	100% Motor Load	Com- bined	Fig. 1 A'	Fig. 2 A	Fig. 3 B	Fig. 4 C		Trans- former Alone	100% Motor Load	Com- bined	Fig. 1 A'	Fig. 2 A	Fig. 3 B	Fig. 4 C	
300 5%	25000	722	14600	3600	18200	50000	25000	15000	15000	361	7300	1800	9100	25000	15000	15000	15000	
	50000		16100		19700	50000	25000	15000	15000		8100		9900	25000	15000	15000	15000	
	100000		17000		20600	50000	25000	15000	15000		8500		10300	25000	15000	15000	15000	
	150000		17400		21000	50000	25000	15000	15000		8700		10500	25000	15000	15000	15000	
	250000		17600		21200	50000	25000	15000	15000		8800		10600	25000	15000	15000	15000	
450 5%	500000	1083	17900	5400	21500	50000	25000	15000	15000	542	8900	2700	10700	25000	15000	15000	15000	
	Unlimited		18100		21700	50000	25000	15000	15000		9000		10800	25000	15000	15000	15000	
	25000		19900		25300	50000	50000	15000	15000		9900		12600	25000	15000	15000	15000	
	50000		22900		28300	50000	50000	15000	15000		11500		14200	25000	15000	15000	15000	
	100000		24800		30200	50000	50000	25000	15000		12400		15100	25000	25000	15000	15000	
500 5%	150000	1203	25400	6000	30800	50000	50000	25000	15000	601	12700	3000	15400	25000	25000	15000	15000	
	250000		26000		31400	50000	50000	25000	15000		13000		15700	25000	25000	15000	15000	
	500000		26500		31900	50000	50000	25000	15000		13300		16000	25000	25000	15000	15000	
	Unlimited		27000		32400	50000	50000	25000	15000		13500		16200	25000	25000	15000	15000	
	25000		21500		27500	50000	50000	15000	15000		10800		13800	50000	15000	15000	15000	
600 5%	50000	1443	25100	7200	31100	50000	50000	25000	15000	722	12500	3600	15500	50000	25000	15000	15000	
	100000		27300		33300	50000	50000	25000	15000		13700		16700	50000	25000	15000	15000	
	150000		28200		34200	50000	50000	25000	15000		14100		17100	50000	25000	15000	15000	
	250000		28900		34900	50000	50000	25000	15000		14500		17500	50000	25000	15000	15000	
	500000		29500		35500	50000	50000	25000	15000		14800		17800	50000	25000	15000	15000	
750 5 1/2%	Unlimited	30100	36100	50000	50000	25000	15000	15100	18100	50000	25000	15000	15000					
	25000	24500	31600	50000	50000	25000	15000	12200	15800	50000	25000	15000	15000					
	50000	29000	36200	50000	50000	25000	15000	14600	18200	50000	25000	15000	15000					
	100000	32100	39300	50000	50000	25000	15000	16100	19700	50000	25000	15000	15000					
	150000	33300	40500	50000	50000	25000	15000	16700	20300	50000	25000	15000	15000					
1000 5 1/2%	250000	1804	34400	9000	41600	50000	50000	25000	15000	902	17200	4500	20800	50000	25000	15000	15000	
	500000		35100		42300	50000	50000	25000	15000		17600		21200	50000	25000	15000	15000	
	Unlimited		36000		43200	50000	50000	25000	15000		18100		21700	50000	25000	15000	15000	
	25000		26600		35600	75000	50000	25000	15000		13300		17800	50000	25000	15000	15000	
	50000		32300		41300	75000	50000	25000	15000		16100		20600	50000	25000	15000	15000	
1500 5 1/2%	100000	2406	36100	12000	45100	75000	50000	25000	15000	1203	18000	6000	22500	50000	25000	15000	15000	
	150000		37600		46600	75000	50000	25000	15000		18800		23300	50000	25000	15000	15000	
	250000		39000		48000	75000	50000	25000	15000		19500		24000	50000	25000	15000	15000	
	500000		40000		49000	75000	50000	25000	15000		20000		24500	50000	25000	15000	15000	
	Unlimited		41100		50100	75000	50000	25000	15000		20500		25000	50000	25000	15000	15000	
1000 5 1/2%	25000	2406	31700	12000	43700	75000	50000	25000	15000	1203	15800	6000	21800	50000	25000	15000	15000	
	50000		40200		52200	75000	50000	25000	15000		20100		26100	50000	50000	15000	15000	
	100000		46300		58300	75000	50000	25000	15000		23200		29200	50000	50000	15000	15000	
	150000		48000		60800	75000	50000	25000	15000		24400		30400	50000	50000	25000	15000	
	250000		51000		63000	75000	50000	25000	15000		25500		31500	50000	50000	25000	15000	
1500 5 1/2%	500000	3609	52800	18000	64800	75000	50000	25000	15000	1804	26400	9000	32400	50000	50000	25000	15000	
	Unlimited		54700		66700	75000	50000	25000	15000		27400		33400	50000	50000	25000	15000	
	25000		39300		57300	100000	75000	50000	25000		19600		28600	75000	50000	15000	15000	
	50000		53200		71200	100000	75000	50000	25000		26600		35600	75000	50000	25000	15000	
	100000		64500		82500	100000	100000	50000	50000		32300		41300	75000	50000	25000	15000	
1500 5 1/2%	150000	3609	69500	18000	87500	100000	100000	50000	50000	1804	34800	9000	43800	75000	50000	25000	15000	
	250000		74000		92000	100000	100000	50000	50000		37000		46000	75000	50000	25000	15000	
	500000		77900		95900	100000	100000	50000	50000		38900		47900	75000	50000	25000	15000	
	Unlimited		82000		100000	100000	100000	50000	50000		41100		50100	75000	75000	50000	25000	

\*All selections are based on voltages, transformer impedances, and motor loads, as indicated. For conditions differing from those given the selections therein do not apply. Under different conditions, the short-circuit currents should be calculated, and selections made accordingly.

†The motor short-circuit contributions are computed on the following bases:

(a) That not more than 25 per cent of the motor load is synchronous. If more than 25 per cent is synchronous, for the selection of breakers B and C, in cascade, engineering recommendations should be obtained.

(b) That the combined impedance of motor and motor leads be such as to give five times motor normal current.

‡Breaker A' selections are in all cases governed by the necessary continuous-current ratings of the transformer,

and this is the reason that in some cases the interrupting ratings are higher than the ratings given for the corresponding A breaker. Interrupting ratings of A breakers are all based on the interrupting requirements only, as determined by the combined short-circuit total amperes.

§The current values in this column are those for the given kva. ratings of the transformers. Transformers frequently have permissible loadings above their ratings.

||Where the interrupting ratings given for B and C breakers are lower than the combined short-circuit total rms amperes, the selections are based on cascading. Where cascading is done, the back-up breakers should be equipped with tripping devices which will provide instantaneous tripping before the current through the backed-up breakers exceeds 80 per cent of their interrupting rating.

¶Use next-larger rating for voltages less than 240 or 480.



## G-E Standard Metal-Enclosed Low-Voltage A.C. Switchboards

## With Drawout Air Circuit Breakers

## Arrangements

The sizes of the basic feeder-section units are determined by the types, ratings, and method of operation of the air circuit breakers which they house; and the height of a section fixes the maximum number of sections permissible for each vertical assembly. Thus is obtained maximum flexibility in the layout of a proposed switchboard, which permits any preferred location of individual feeder sections in the complete switchboard, and the location, at will, of the entrance of incoming power lines to the switchboard (such as at either

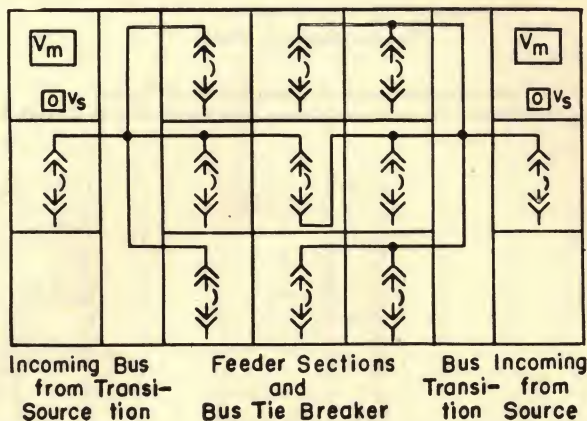


Figure 1  
Schematic Connections of a Typical Switchboard  
Assembly, Including a Bus Transition Compartment

end, or at both ends for two incoming lines, or at the center).

The approximate dimensions, number of sections permissible for a vertical assembly, specifications, and estimating prices, of each of the standard feeder-breaker sections, are listed.

To obtain the estimating price of a switchboard to be constructed entirely of the standard feeder-section units, it is necessary only to compute the total of the listed prices of each of the sections selected, plus the listed prices of any of the listed subsidiary items which may be required, or selected.

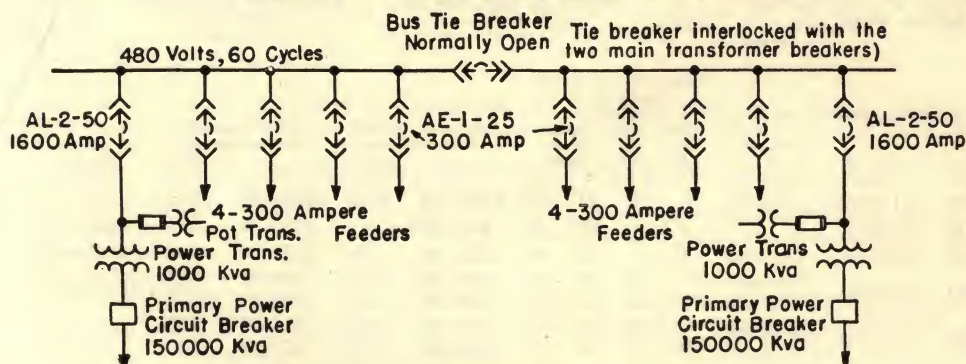


Figure 2  
Schematic One-Line Connection Diagram

## Bus Transition Units

Bus transition units, each of which consists of a metal-enclosed unit, with a front hinged panel, which encloses vertical bus (risers) and connections, are listed for application in switchboards comprised, in part, or in whole, of a number of standard feeder-section units, and where is involved a necessary transition of buses or connections from vertical to horizontal runs, or vice versa.

There are several applications where a bus transition unit is definitely recommended, such as when connection must be made between one large incoming power-line feeder-section unit in the switchboard to several rows of small feeder-section units, as illustrated schematically in Fig. 1.

The addition of one or more bus transition units for such a proposed switchboard *may not always be physically necessary*, but when computing estimating prices, they must be included in the price.

## Instructions for Ordering

Specify the voltage and frequency of the system. Specify the circuits to be controlled, giving the complete rating of each (including the continuous ampere and the circuit-

breaker interrupting rating required). Describe each subsidiary and optional item selected.

Give the desired order of the base units and auxiliary compartments from left to right, facing the switchboard.

When the air circuit breakers are to control circuits fed from power transformers, give the interrupting kilovolt-ampere rating of the primary power circuit breakers.

Give any additional pertinent information.

## Example for Ordering and Pricing

For the purpose of demonstrating the method to be followed to determine the total estimating price of a metal-enclosed drawout switchboard selected from this catalog, the following assumed case has been chosen, and the circuits clearly shown by means of the schematic one-line connection diagram, Fig. 2. It is recommended that this same procedure be followed when preparing such estimates, i.e., the preparation of a similar connection diagram, and pricing accordingly. In the following example, bus transition units are included where they may be considered as a probable requirement.

Description	Each	No. Required
Bus Transition Units, 1600 Amperes.....	\$310.00	2
Main Transformer Breaker Units.....	1495.00	2
Bus-Tie Breaker Unit, 1600 Amperes.....	1495.00	1
Feeder Breaker Units, 300 Amperes.....	650.00	8
Sections Less Breaker (\$650 less \$390).....	260.00	4
Voltmeters and Transfer Switches.....	115.00	2
Potential Transformers.....	60.00	4
Key Interlocks for Main and Bus-Tie Breakers.....	*40.00	3
Total Estimating Price.....	†11935.00	

\*Per set.

†Total estimating price is computed by multiplying the No. Required by price each.



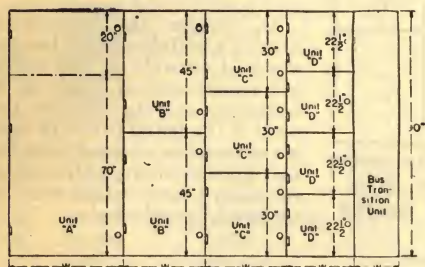
## G-E Standard Metal-Enclosed Low-Voltage A. C. Switchboards

With Drawout Air Circuit Breakers

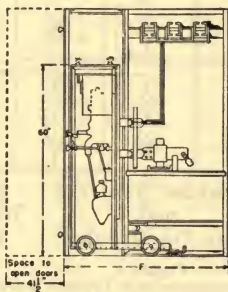
## Feeder-Section Units

600 Volts Maximum 3-Phase, 3-Wire, 60 Cycles

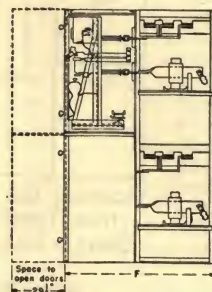
\*For Incoming-Line, Power-Transformer, Feeder, and Motor-Branch Circuit Application



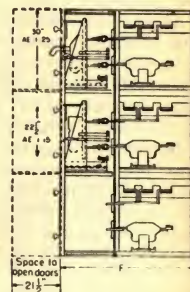
Outline of Front View of Standard Section Units



Outline of Side View of Unit "A"



Outline of Side View of Unit "B"



Outline of Side View of Unit "C" (Unit D Same as Above, Except Four Sections High)

AIR CIRCUIT BREAKERS				SWITCHGEAR STRUCTURE				Complete Unit with Breaker Element				Spare Removable Breaker Element				Bus Transition Unit		
RATINGS	Inter- rupting Amperes	Type of Breaker	Method of Operation	Type of Unit, Vertical Fig. Section	Number per Fig. Section	DIMEN- SION W	INCHES H	†Each	Ship. Wt., Lb.	†Each	Ship. Wt., Lb.	†Each	Ship. Wt., Lb.	Rating of Main Bus, Amperes	Each	Ship. Wt., Lb.		
4000	100000	AL-2-100	Electric	A	1	42	66	\$4925.00	6350	\$2940.00	1250	5001-6000	\$1725.00	3300				
3000	75000	AL-2-75		A	1	42	66	4030.00	5775	2290.00	1175	4001-5000	1430.00	2850				
2000	75000	AL-2-75	Electric	A	1	42	66	3250.00	4950	1950.00	1165	3001-4000	1120.00	1750				
1600	50000	AL-2-50	{Manual	C	3	30	54	1495.00	1075	975.00	325	2001-3000	815.00	1750				
			{Electric	B	2	30	54	1855.00	1325	1235.00	575							
1000-1200	50000	AL-2-50	{Manual	C	3	30	54	1185.00	1075	715.00	325	1201-2000	620.00	1200				
			{Electric	B	2	30	54	1560.00	1325	975.00	575							
800	50000	AL-2-50	{Manual	C	3	30	54	1075.00	1075	620.00	325	601-1200	520.00	925				
			{Electric	B	2	30	54	1450.00	1325	910.00	575							
200-600	50000	AL-2-50	{Manual	C	3	30	54	1010.00	1075	555.00	325	.....	.....	.....				
			{Electric	B	2	30	54	1380.00	1325	845.00	575							
50-600	25000	AE-1-25	{Manual	C	3	22	48	650.00	865	390.00	210	600	360.00	800				
			{Electric	C	3	22	48	845.00	865	520.00	210							
15-225	15000	AE-1-15	{Manual	D	4	22	47	360.00	670	170.00	120	225	215.00	600				
			{Electric	D	4	22	47	520.00	680	260.00	125							

\*Motor-feeder, and motor-branch circuit applications are limited to 600 amperes maximum continuous rating.

†Prices are approximate only.

‡Where the complete switchboard is comprised of a number of different unit types, the overall depth of the units is made identical, in order to obtain uniformity in construction and bus runs.

§Width of bus transition unit is as required for the installation minimum, 12 inches. Depth corresponds to that of adjacent feeder-section units.

General Specifications of Feeder-section Units—  
(Equipment included in Price)

For Optional Additions, See Table IV

- 1—Metal-enclosed unit, complete with stationary and removable elements, including primary disconnecting devices, mechanical interlocks, and
- 1—Louvered, hinged-front door.
- 1—Air circuit breaker, complete with overcurrent trips, interpole barriers, operating handles (or control switches for electrically operated breakers), and all necessary parts, on removable drawout carriage.
- 1—Bare 3-phase bus with supports.
- Necessary bare-copper interconnections.
- Cable terminal connectors.
- 1—Ground bus.

General Specifications of Bus-Transition Units  
(Equipment Included in Price)

- 1—Metal-enclosed unit, complete with hinged-front instrument panel, with latches, and
- 1—Bare 3-phase bus with supports.
- Necessary bare transition copper connections.
- Mounting and small wiring, including terminal boards, for secondary control equipment, where added. Mounting for current and potential transformers.



## G-E Standard Metal-Enclosed Low-Voltage A.C. Switchboards

With Drawout Air Circuit Breakers

600 Volts Maximum, 3-Phase, 3-Wire, 60 Cycles

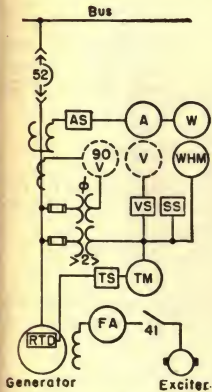
A. C. Generator and D. C. Exciter, Synchronous-Motor,  
And Induction-Motor Equipments

Figure 1  
Schematic Connection  
Diagram, Generator and  
Exciter Equipment

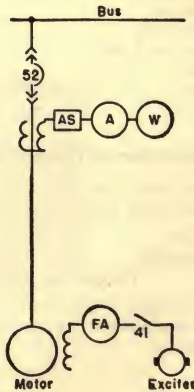


Figure 2  
Schematic Connection  
Diagram, Synchronous-Motor  
Equipment, Full-  
Voltage Start

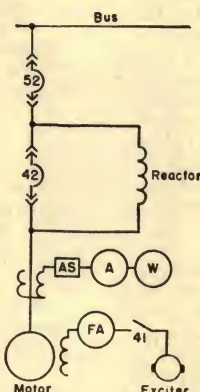


Figure 3  
Schematic Connection  
Diagram, Synchronous-Motor  
Equipment, Line-  
Reactor Start

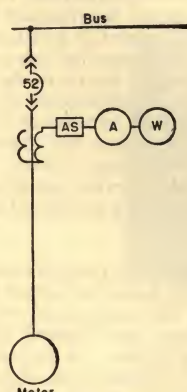


Figure 4  
Schematic Connection  
Diagram, Induction-Motor  
Equipment, Full-Voltage  
Start

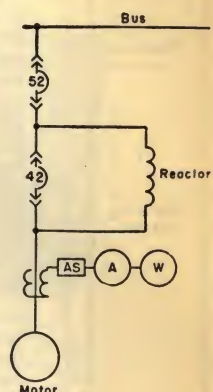


Figure 5  
Schematic Connection  
Diagram, Induction-Motor  
Equipment, Line-Reactor  
Start

Prices include the following:

For all equipments:

Metal-enclosed unit, complete with stationary and removable elements, including primary and secondary disconnecting devices, mechanical interlocks, louvered hinged door for each breaker compartment.

Hinged-front instrument panel for enclosed secondary control compartments.

Auxiliary compartment, with hinged-front instrument panel.

Air circuit breaker (or breakers), complete with overcurrent trips, interpole barriers, operating handles (or control switches for electrically operated breakers), and all necessary parts, on removable drawout carriage.

Instruments, instrument transformers, instrument switches.

Copper buses, bus supports, copper interconnections, necessary cable-terminal connectors, terminal blocks, ground bus, small wiring. In addition, For generator-exciter equipments:

Mounting and operating mechanism for field rheostats (rheostats not included).

Field breaker (discharge resistor not included).

Provision for voltage regulator (regulator not included).

Differential-relay equipment, for generators rated 2000 amperes and above.

For synchronous-motor equipments:

Field contactor and discharge resistor:

Operating mechanism for field rheostat (rheostat not included).

Synchronous-speed relay, field relay, undervoltage device, thermal relay (for equipments in excess of 600 amperes).

Incomplete-sequence relay (for motors rated 500 hp. and above).

Not Included: Automatic field-removal and resynchronizing, for pull-out protection. (Loaded start.) Where desired, increase price \$195.

For induction motor equipments:

Undervoltage device.

Transfer relay (where required, Fig. 5).

Thermal relays (for circuits above 600 amperes).

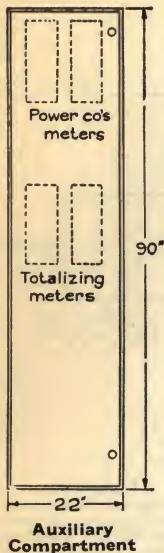
AIR-CIRCUIT BREAKERS				Generator and Exciter Fig. 1			Synchronous Motor						Induction Motor					
RATINGS		Inter- rupting, Am- peres	Type of Breaker	Method of Opera- tion	Full-voltage Unloaded Start Fig. 2			Line-reactor Unloaded Start Fig. 3			Full-voltage Start Fig. 4			Line-reactor Start Fig. 5				
Continuous Am- peres	*Width In.				Each	Approx. Ship. Wt., Lb.	*Width In.	Each	Approx. Ship. Wt., Lb.	*Width In.	Each	Approx. Ship. Wt., Lb.	*Width In.	Each	Approx. Ship. Wt., Lb.	*Width In.	Each	Approx. Ship. Wt., Lb.
3000	75000	AL-2-75	Electric	66	\$8105.	8680												
2000																		
1600	50000	AL-2-50	Manual	52	3855.	2800	52	\$3330.	2125			30	\$1625.	1300				
			Electric	52	4210.	3050	52	3680.	2375	66	\$6570.	4950	30	1980.	1550	66	\$5250.	5350
1200	50000	AL-2-50	Manual	52	3430.	2525	52	3005.	2100			30	1300.	1275				
			Electric	52	3785.	2775	52	3360.	2350	66	5825.	4725	30	1625.	1525	66	4940.	4850
800	50000	AL-2-50	Manual	52	3235.	2500	52	2840.	2075			30	1135.	1250				
			Electric	52	3595.	2750	52	3200.	2325	66	5295.	4500	30	1495.	1500	66	4525.	4625
200-600	50000	AL-2-50	Manual	52	2995.	2375	52	2640.	2050			30	1250.	1225				
			Electric	52	3355.	2625	52	3005.	2300	66	5065.	4450	30	1605.	1450	66	3950.	4650
250-600	25000	AE-1-25	Manual	44	2405.	2150	44	2300.	2430			22	905.	990				
			Electric	44	2595.	2150	44	2485.	2430	52	4030.	3500	22	1090.	990	52	2910.	3500
50-225	25000	AE-1-25	Manual	44	2180.	1950	44	2210.	1825			22	820.	990				
			Electric	44	2360.	1950	44	2390.	1825	52	3620.	3300	22	1000.	990	52	2365.	2900
15-225	15000	AE-1-15	Manual	44	1990.	1765	44	2010.	1650			22	625.	815				
			Electric	44	2140.	1765	44	2170.	1650	52	3175.	2750	22	780.	815	52	1915.	2550

\*Depth of unit is same as for feeder unit of corresponding-size breaker. Where the complete switchboard is comprised of a number of different unit types, the overall depth is made identical, in order to obtain uniformity in construction and bus runs. †Prices are approximate.



## G-E Standard Metal-Enclosed Low-Voltage A. C. Switchboards

### With Drawout Air Circuit Breakers



#### Auxiliary Compartments

For some installations, the application of some of the equipments listed in this section requires the addition of an auxiliary compartment for the purpose of providing proper facilities for the accommodation of additional devices, among which may be totalizing meters, power company's meters and instrument transformers, tripping battery and charger (when added), extra potential transformers, or any other pertinent additional devices.

The auxiliary compartments (listed in Table III) have the same depth dimensions as the equipment structures with which they are aligned in the switchboard structure. It is provided with a full-height hinged-front instrument panel with latches, and is usually located immediately adjacent to the equipment with which it is associated, although, for certain applications, it may be located at any desired position in the structure line-up.

Table III

#### \*Auxiliary Compartments

To Line Up with Unit Having Breaker of Interrupting Rating	††Estimating Price	Ship. Wt., Lb.
50000 Amperes or Less.....	\$615.00	900
75000 Amperes.....	810.00	1000
100000 Amperes.....	1120.00	1150

#### Application of Potential Transformers

The devices (listed in this section) which regularly require excitation from potential transformers, are as follows:

Voltmeter	Wattmeter
Synchroscope	Watt-hour Meter
	Frequency Indicator

It is not necessary to include a potential transformer for operation in conjunction with an undervoltage device for an air circuit breaker.

#### Instrument Brackets

Instrument brackets of the swinging type, with perforated rear enclosure, for location at either end of the switchboard, are available. For selection, description, and prices, refer to your Distributor.

Table IV—Optional Additions and Modifications\*\*

Description	Estimating Price, †Each	Ship. Wt., Lb.
1—Potential Transformer, With Primary Fuses.....	\$60.00	50
1—Current Transformer, for Unit Rated:		
800 Amperes or Less.....	60.00	40
801 to 1500 Amperes.....	60.00	50
1501 to 4000 Amperes.....	110.00	60
†1—Demand Meter, Indicating.....	80.00	50
†1—Demand Meter, Graphic (Strip-Chart).....	390.00	60
§1—Contact Device for Watthour Meter.....	15.00	—
1—Demand-Meter Register for Watthour Meter.....	50.00	—
††1—Watthour Meter, 2-Element, With Test Plug.....	145.00	40
††1—Indicating Voltmeter, With Suitable Scale.....	65.00	10
††1—Indicating Voltmeter, and Voltmeter Transfer Switch.....	115.00	15
††1—Indicating Ammeter, and Ammeter Transfer Switch.....	115.00	15
††1—Indicating Wattmeter, 2-Element, With Suitable Scale.....	160.00	20
††1—Synchronizing Switch.....	50.00	5
1—Current-Balance Relay (No. 46) and One Current Transformer.....	290.00	20
1—Differential-Relay Protective Equipment, Including All Necessary Modifications In the Basic Equipment		
For Equipment With Manually Operated Breaker.....	1365.00	450
For Equipment With Electrically Operated Breaker.....	1330.00	425
†1—Set of Three Ground-Detector Lamps, With Push-Button Switch.....	80.00	10
1—Key Interlock (To Prevent Closure of Breaker Unless Interlock Is Set).....	50.00	2
1—Undervoltage Device, Time, for Air Circuit Breaker Rated:		
50,000 Amperes or Less Interrupting Capacity.....	45.00	10
75000 or 100000 Amperes Interrupting Capacity.....	80.00	15
1—Shunt-Trip Device, for Manually Operated Breaker Rated:		
50000 Amperes or Less Interrupting Capacity.....	30.00	10
75000 or 100000 Amperes Interrupting Capacity.....	65.00	15
1—Clock (10-Inch Dial), With Bracket, for Mounting On Top of Unit.....	260.00	40
1—Alarm Bell, Up to 12-Inch Diameter.....	65.00	20

\*Included: Necessary bus copper where the station bus extends across the compartment, and provision only for mounting instrument transformers.

†For hinged rear panel, add \$1 4. per compartment.

††For firm net prices, refer to your Distributor.

§This item should be priced only when either of the demand meters listed herein are added for a circuit.

||These items operate in conjunction with the circuit watthour meter.

¶Only 1 set required for a complete switchboard, regardless of the number of generator equipment installed.

\*\*All instruments, meters, and switches are to be mounted on the hinged instrument panel of either a bus transition unit, or an auxiliary compartment, which must be added, if not already included. It is also feasible to mount instruments, meter, instrument switches, etc., on the front doors of blank feeder-section units, to obtain an arrangement of circuit metering devices in vertical-panel assemblies. For estimating prices for such an arrangement, it is satisfactory to price a proper listed feeder-section unit, less its removable element, for mounting each such instrument-group location in the switchboard.

†††Not Included: Any instrument transformers, which should be added, as required for the circuit and the switchboard, per the prices listed in this table.



## G-E Types AE-1-15 and AE-1-25 Enclosed Air Circuit Breakers

For Dead-front Switchboard Mounting

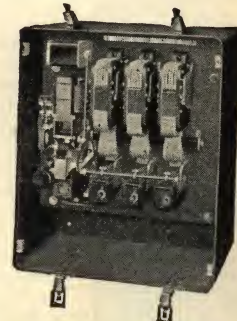
Manually or Electrically Operated



Type AE-1-15 Air Circuit Breaker, Manually Operated, Enclosed Type



Type AE-1-15 Air Circuit Breaker, Manually Operated, For Dead-front Switchboard Mounting



Type AE-1-25 Air Circuit Breaker, Electrically Operated, Enclosed Type (With Cover Removed to Show Breaker)

Types AE-1-15 and AE-1-25 air circuit breakers are particularly adapted to general industrial and switchgear service where numerous opening and closing operations are required. They provide economical and reliable protection for power and lighting feeder circuits.

These breakers are capable of operating thousands of times without requiring maintenance and their simple, compact, and sturdy construction makes them especially suitable for mounting in steel enclosures.

The Type AE-1-15 with 15000-ampere interrupting rating and the Type AE-1-25 with 25000-ampere interrupting rating are similar, except that the Type AE-1-25 is generally heavier and sturdier than the Type AE-15.

Calibration range: 100-200 per cent of rating.

Voltage ratings: 600 volts a.c., 250 volts d.c.

The multipole breakers consist of single-pole elements grouped compactly together and operated simultaneously by a sturdy insulated steel shaft. Manually operated breakers have a pistol-grip handle—turn to close, pull to trip. Electrical operation is by means of a solenoid mounted at the side of the breaker within the same space occupied by the manual mechanism.

The arc quencher, one on each pole, is a most important factor in the dependable operation of these breakers. It minimizes disturbances and quickly extinguishes the arc. Metal pins above the contacts split up and cool the arc. The arc energy is rapidly absorbed by parts having high thermal capacity and large radiating surfaces.

These breakers are equipped with dual magnetic over-current tripping devices which differentiate between overloads and short circuits by providing a time delay inversely proportional to the over-current for values up to approximately ten times normal current, and instantaneous tripping for higher or short-circuit currents.

Prices include: time-delay, dual-magnetic, over-current tripping device per pole; arc quenchers; and ebony-asbestos base. Breakers in steel enclosures include, in addition, position indicator to show open or closed position of breaker. Manually operated breakers have pistol-grip handle on the enclosing case cover. Electrically operated breakers in enclosures include push-button closing switch and push-button mechanical trip.

When ordering, specify type, number of poles, number of current trips, voltage rating, a.c. or d.c. circuit, current rating, and whether for dead-front mounting or enclosed for individual mounting.

## \*Type AE-1-15—15,000 Amperes Interrupting Rating

Continuous Ampere Rating of Breaker	In Steel Enclosure for Individual Mounting						For Dead-front Switchboard Mounting					
	Manually Operated			Electrically Operated			Manually Operated			Electrically Operated		
	Two- pole Each	Three- pole Each	Four- pole Each	Two- pole Each	Three- pole Each	Four- pole Each	Two- pole Each	Three- pole Each	Four- pole Each	Two- pole Each	Three- pole Each	Four- pole Each
*25-225	\$105.00	\$130.00	\$185.00	\$190.00	\$215.00	\$270.00	\$100.00	\$125.00	\$180.00	\$185.00	\$210.00	\$265.00
Shipping Wt..lb.	126	153	185	126	153	185	84	108	132	84	108	132

## §Type AE-1-25—25,000 Amperes Interrupting Rating

Continuous Ampere Rating of Breaker	Two- pole Each	Three- pole Each	Four- pole Each	Two- pole Each	Three- pole Each	Four- pole Each	Two- pole Each	Three- pole Each	Four- pole Each	Two- pole Each	Three- pole Each	Four- pole Each
§50-600	\$270.00	\$355.00	\$445.00	\$380.00	\$465.00	\$555.00	\$255.00	\$340.00	\$430.00	\$365.00	\$450.00	\$540.00
Shipping Wt..lb.	240	265	310	240	265	310	160	185	225	160	185	225

†Breaker may be lifted out of case to permit connections of cables to fixed terminal connectors in case. Two bolts are removed and breaker is swung down on pivots and lifted out to permit pulling and connection of cables.

‡Also can be mounted front of panel, for which arrangement the manually operated breaker is furnished with a fixed handle.

\*Ratings: 25, 35, 50, 70, 90, 100, 125, 150, 175, 200, 225 amperes.

§Ratings: 50, 70, 90, 100, 125, 150, 175, 200, 225, 250, 275, 300, 325, 350, 400, 500, 600 amperes.

## Description

## Accessories for Types AE-1-15 and AE-1-25

Description	Each
Auxiliary Switch, 2-Contact.....	\$10.00
Additional Contacts (To a Total of Six).....	5.00
Hand-Reset Bell-Alarm Device, Overcurrent (When Added, Size of Enclosure May Be Increased).....	35.00
Undervoltage Device, Instantaneous.....	30.00
Time.....	40.00
Shunt-Trip Device (Includes 2-Contact Auxiliary Switch).....	30.00
Reverse-Current Device (Direct Current Only).....	65.00
Cutoff Device (For Remote Maintained-Contact Control of Electrically Operated Breaker).....	45.00

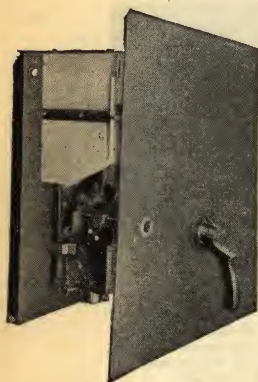


## G-E Type AL-2 Air Circuit Breakers

## Metal-Enclosed and Dead-Front Switchboard Mounting

For A.C. and D.C. Circuits

Manually and Electrically Operated



Type AL-2-50 Air Circuit Breaker, Manually Operated, for Dead-Front Switchboard Mounting

then extends through a slot in the cover and is completely insulated from all live parts. A positive indicator shows open or closed position of the breaker.

Type AL-2 air circuit breakers are recommended for use in all applications where heavy-duty breakers and high current ratings are required.

The unit frame construction of this breaker makes each pole a self-contained unit. These single-pole units are mechanically connected for simultaneous operation in multipole breakers. Individual toggle mechanisms put the contacts under strong pressure—yet the breaker is easily closed. Manual operation is not recommended for breakers larger than the AL-2-50, and when manually operated, this breaker is preferably mounted back of a dead-front panel, or within a metal enclosure. The handle

Electrical operation of the Type AL-2-50 is by means of a motor-operated cam mechanism, operating through an enclosed worm-gear reduction that provides positive action. Universal motors for a.c. or d.c. are employed.

The overcurrent tripping is direct-acting and, in no case, are current transformers or overcurrent relays required.

Price includes: time-delay, direct-acting overcurrent tripping device per pole; arc quenchers; and ebony-asbestos base. Electrically operated breaker price includes, in addition, shunt trip; closing control relay; and four-stage, rotary-type, auxiliary switch, all mounted on breaker permanent base and wired to a terminal block.

When ordering, specify type, number of poles, number of current trips, time or instantaneous, voltage rating (order barriers for multipole breakers above 250 volts a.c. or d.c.), a.c. or d.c. circuit, current rating, manually or electrically operated (if electrically operated, give voltage, a.c. or d.c., for control source), metal-enclosed or for dead-front mounting, and laminated stud slots for 2000 amperes and above:

Upper { Horizontal  
Vertical

Lower { Vertical  
Horizontal

## In Steel Enclosure for Individual Mounting

With Pull-Box Included

Continuous Ampere Rating of Breaker	Interrupting Rating in Amperes	Manually Operated						Electrically Operated					
		2-Pole		3-Pole		4-Pole		2-Pole		3-Pole		4-Pole	
		Each	Approx. Ship. Wt. Lb.	Each	Approx. Ship. Wt. Lb.	Each	Approx. Ship. Wt. Lb.	Each	Approx. Ship. Wt. Lb.	Each	Approx. Ship. Wt. Lb.	Each	Approx. Ship. Wt. Lb.
*200-600	50000	\$475.00	275	\$625.00	325	\$775.00	435	\$745.00	800	\$895.00	860	\$1050.00	1070
800		515.00	275	675.00	325	855.00	435	785.00	800	945.00	860	1125.00	1070
1000-1200		585.00	275	775.00	325	985.00	435	855.00	800	1045.00	860	1255.00	1070
1600		765.00	275	1025.00	325	1315.00	435	1035.00	800	1295.00	860	1585.00	1070
2000	75000	.....	...	.....	...	.....	...	\$1630.00	1800	\$2120.00	2000	.....	.....
3000	75000	.....	...	.....	...	.....	...	1870.00	1800	2470.00	2000	.....	.....
4000	100000	.....	...	.....	...	.....	...	2190.00	1800	2970.00	2000	.....	.....

## For Dead-Front Switchboard Mounting

(Can Also be Mounted on Front of Panel If so Specified When Ordered)

*200-600	50000	\$350.00	285	\$500.00	335	\$650.00	435	\$620.00	535	\$770.00	585	\$920.00	750
800		390.00	285	550.00	335	730.00	435	660.00	535	820.00	585	1000.00	750
1000-1200		460.00	285	650.00	335	860.00	435	730.00	535	920.00	585	1130.00	750
1600		640.00	285	900.00	335	1190.00	435	910.00	535	1170.00	585	1460.00	750
2000	75000	.....	...	.....	...	.....	...	\$1180.00	720	\$1670.00	1065	\$2210.00	1340
3000	75000	.....	...	.....	...	.....	...	1420.00	740	2020.00	1080	2670.00	1360
4000	100000	.....	...	.....	...	.....	...	1740.00	810	2520.00	1145	3340.00	1505
5000	100000	.....	...	.....	...	.....	...	\$2380.00	1460	\$3440.00	.....	\$4580.00	3425
6000	100000	.....	...	.....	...	.....	...	2830.00	1460	4090.00	2865	.....	.....

\*Ratings: 200, 225, 250, 275, 300, 350, 400, 500, 600 amperes.

Calibration range: all ratings, 100-200 per cent of rating.

Voltage ratings: one-pole breakers, 600 volts a.c. 250 volts d.c.

## Accessories

Description	Each	Description	Each
Auxiliary Switch, 2-Contact, For Manually Operated Breakers.....	\$10.00	Undervoltage Device, Time:	
Additional Contacts (To a Total of Six) For Both Manually and Electrically Operated Breakers..	5.00	For Type AL-2-50.....	\$45.00
Shunt-Trip Device (For Manually Operated Type AL-2-50).....	35.00	For Type AL-2-75.....	75.00
Undervoltage Device, Instantaneous:		For Type AL-2-100.....	75.00
For Type AL-2-50.....	35.00	Overcurrent Bell-Alarm Device (Hand-Reset), For Type AL-2-50.....	35.00
For Type AL-2-75.....	55.00	Reverse-Current Device, Direct Current Only:	
For Type AL-2-100.....	55.00	For Type AL-2-50.....	115.00
		For Type AL-2-75.....	155.00
		For Type AL-2-100.....	230.00



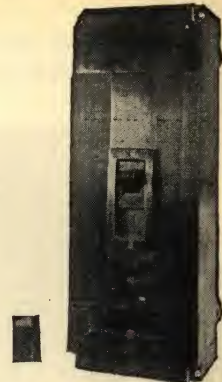
## G-E Type AH-1 and Trumbull Type AT Air Circuit Breakers



Single, 2, and 3-Pole Air Circuit Breakers, Type AT, 50-Ampere Frame Size



Type AH-1 Air Circuit Breaker, 3-Pole 225-Ampere Frame Size



Type AH-1 Air Circuit Breaker, 3-Pole 600-Ampere Frame Size

Type AT air circuit breakers are recommended for use in panelboards and other load centers as a modern substitute for fuses and fused switches, in service entrances instead of fused switches, in dead-front switchboards, and also for individual circuits and appliances. The operation is automatic on either overload or short circuit. Power is restored by a slight movement of the handle.

Available in single, 2, and 3-pole in the 50-ampere frame size; 2 and 3-pole in all other sizes.

Breakers of the 50-ampere frame size are equipped with thermal overcurrent trip, while the larger sizes also have the thermal trip for moderate overcurrents, plus an in-

stantaneous magnetic trip for short circuits.

In the Trumbull Type AT breakers, the arc interruption takes place in an improved arcing chamber which removes the destructive action of the arc from the contacts and entirely isolates it from the mechanism. Contacts are of the low-resistance type manufactured from special nonwelding material.

In the G-E Type AH-1 breakers, the contacts are of the multiple-finger type, designed for long life, low maintenance, and easy accessibility for inspection. The contact tips are of silver-tungsten alloy, with high arc-resisting and nonwelding characteristics.

### \*50-Ampere Frame Size, 5000 Amperes Interrupting Rating

Con- tinuous Ampere Rating of Breaker	Manufacturer and Type	250 Volts, A.C. 125-250 Volts, D.C.						600 Volts, A.C. 250 Volts, D.C.						†Inter- change- able Trip Units All Volt- ages	†Studs for Back Connection— Length of Stud Back of Breaker, Inches	
		Single-Pole		2-Pole		3-Pole		2-Pole		3-Pole		†Length of Stud Back of Breaker, Inches				
		Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.					
15-20-25	Trumbull AT	\$4.75	2	\$10.00	3	\$15.00	4	.....	..	.....	..	.....	..	3 <sup>7</sup> / <sub>16</sub>	\$1.00	
35-50		5.75	2	12.00	3	18.00	4	.....	..	.....	..	.....	..			

### \*100-Ampere Frame Size, 15,000 Amperes A. C., 10,000 Amperes D. C., Interrupting Rating

15-20-25	Trumbull ATB	.....	..	\$14.00	8	\$19.00	8	\$24.00	9	\$30.00	13	.....	15-50 4	\$1.00\$		
35-50		.....	..	16.00	8	22.00	8	26.00	9	33.00	13	.....				
70-90-100	Trumbull ATA	.....	..	25.00	8	33.00	8	35.00	9	43.00	13	.....	70-100 3 3/8	1.10		
50-70-90-100		.....	..	33.00	9	43.00	13	41.00	9	54.00	13	\$11.00 15.00				

### \*225-Ampere Frame Size, 15,000 Amperes A.C., 10,000 Amperes D.C. Interrupting Rating

170-225	G-E AH-1	.....	..	\$91.00		\$110.00		\$108.00		\$135.00		{ \$31.00 39.00 }	3 1/4	\$1.25
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### \*600-Ampere Frame Size, 25,000 Amperes A.C., 20,000 Amperes D.C., Interrupting Rating

1225-400	G-E AH-1	.....	..	\$233.00	50	\$296.00	60	\$250.00	50	\$320.00	60	{ \$63.00 98.00 99.00 136.00 }	{ 3 1/4 5 5	\$4.15 4.75
1500-600		.....	..	269.00	50	243.00	60	286.00	50	367.00	60			

\*Interrupting ratings given are N.E.M.A. ratings. The Underwriters' test ratings are as follows, a.c. or d.c.: 50-ampere frame size AT, 5000 amperes; 100-ampere frame size ATA and ATB, 250-volt a.c., 125/250-volt d.c., 5000 amperes; 100-ampere frame, size ATA and ATB, 600-volt a.c., 250-volt d.c., and all AH-1, 10,000 amperes.

†Circuit breakers as listed are front-connected. For back connection, two studs are required per pole: that is; two for one-pole breaker, 4 for two-pole, and 6 for three-pole. Studs are furnished with necessary nuts and washers.

‡Trip units of the 50-ampere frame size AT and of the 100-ampere frame size ATB breakers are not interchangeable. Each of the interchangeable trip units of the 100-ampere frame size ATA and of the 225 and 600-ampere frame size AH-1 includes a thermal unit and an instantaneous magnetic-trip element for each pole, combined into a single sealed breaker unit. The magnetic trip is adjustable to trip at high or low currents, independent of the thermal element. Prices given are for two-pole and three-pole breakers respectively.

§Long and short stud for each pole. Specify ampere rating for ATB studs.

||When assembling studs to a 600-volt a.c., or 250-volt d.c., breaker, a short and a long stud should be assembled on adjacent poles, in order to maintain suitable clearance between poles. Equal quantities of both lengths should be ordered.

¶Ampere ratings: 70, 90, 100, 125, 150, 175, 200, 225, 250, 275, 300, 350, 400, 500, 600.

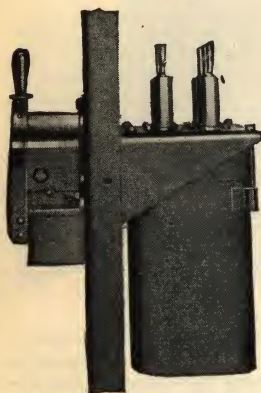


## G-E Types FK-142 and FK-143 Indoor Oil-Blast Power Circuit Breakers

## Manually and Electrically Operated

## 8-Cycle Interrupting Time

## Type FK-142

25000 KVA—5 KV—  
600 AmperesTriple-Pole, 600-Ampere,  
Manually Operated,  
Panel-mounted

Types FK-142 and FK-143 oil-blast breakers are recommended for use on a.c. circuits where sturdy, compact breakers with interrupting ratings up to 25000 and 50000 kilovolt-amperes are required. They are suitable for industrial service and in other installations where space is limited. They are of similar construction, the FK-143 being somewhat sturdier for heavier duty.

These breakers are available in double- and triple-pole, single-throw units with all poles in a single, rectangular, welded steel tank. They have oil-blast contacts, including silver-to-silver main contacts and heavy butt-type arcing contacts; Herkolite bushings; and internal mechanisms. These features assure these breakers' ability to give thoroughly reliable and dependable service with long life and very low maintenance.

Manually Operated Units Include  
(Single-Throw)

Breaker.

Type HC-5 trip-free manual mechanism, including necessary instantaneous or time-delay current trips and/or instantaneous potential trip with auxiliary switch (maximum of three trips of any type).

Current transformers and relays not included.

Standard clamp-type terminal connectors No deduction for omission. Necessary oil.

For remote-mounted breakers, mounting plate, one horizontal and two vertical hangers, with bell cranks and clevises are included.

## (Double-Throw)

Two single-throw breakers with mechanical interlock, and two operating levers with mechanical cross trip.

Electrically Operated Units Include  
(A.C. or D.C.)  
(Single-Throw)

Breaker and Type MS-5B trip-free solenoid mechanism mounted back-to-back on a steel plate, direct-coupled.

Closing relay. One potential trip coil.

Current-trip coils, relays, and current transformers not included.

Four-stage auxiliary switch. Terminal board.

Standard clamp-type terminal connectors. No deduction for omission. Necessary oil.

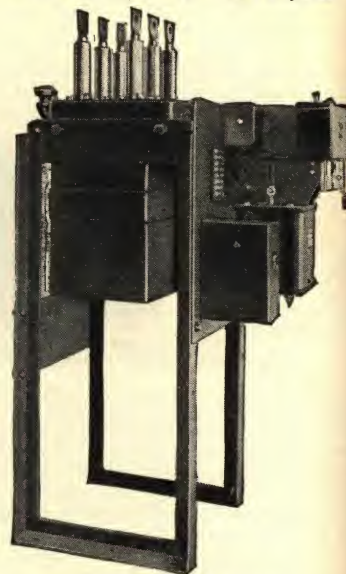
Copper-oxide rectifier (if a.c. operated).

Maintenance closing device (as required).

## (Double-Throw)

Two single-throw breakers, and two solenoid mechanisms electrically interlocked.

## Type FK-143

50000 KVA—{ 7.5 KV— 600 Amperes  
5 KV—1200 AmperesTriple-Pole, 600-Ampere,  
Electrically Operated, Frame-Mounted

RATED		*Single-Throw Breaker				INTERRUPTING RATING, RMS TOTAL AMP.— At Rated Voltage      Maximum Rating		APPROX. WT. LB. INCLUDING OIL Manual, Solenoid Panel- Operated, Mounted      D.C.	
		Direct Operation for Panel Mounting Each	Direct Operation or Steel-Frame Mounting Each	Remote Operation for Frame-work Mounting Each	Electrically Operated For Pipe-Framework or Cell Mounting Solenoid D.C. Each      Solenoid (Rectifier) 220V A.C. Each				
†Interrupting Kva. and Type	†Volts	†Amp. at 60 Cycles	Poles						
25000	5000	600	2	\$240.00	.....	\$280.00	\$380.00	\$460.00	3000      10000
FK-142	5000	600	3	240.00	.....	280.00	380.00	460.00	
	5000	600	4	350.00	.....	390.00	500.00	580.00	
	7500	600	2	515.00	\$530.00	555.00	660.00	755.00	
50000	5000	1200	2	860.00	875.00	900.00	1000.00	1095.00	6000      12500
FK-143	7500	600	3	515.00	530.00	555.00	660.00	755.00	
	5000	1200		860.00	875.00	900.00	1000.00	1095.00	

\*For double-throw breaker, price is twice that of the corresponding single-throw breaker.

†Interrupting rating of FK-142 breakers, based on CO-2 min-CO duty cycle, and of FK-143, based on CO-15 sec.-CO duty cycle.

‡Although the listed standard nameplate ratings are 5000 and 7500 volts, it is recommended that these breakers should not be applied on service voltages in excess of the 4160-volt class.

§25-cycle ratings, as compared with 60-cycle ratings, are 600-700 and 1200-1400 amperes.

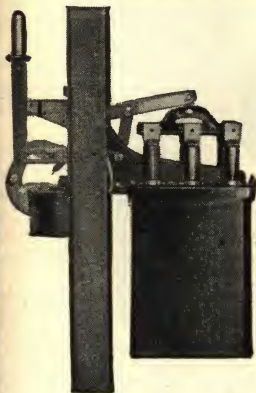
||Breaker and manual mechanism mounted back-to-back on a steel plate.

¶Framework may be angle, pipe, or self-supporting steel for FK-143; angle or pipe for FK-142.

## Accessories

Auxiliary Switch, First Stage (Manually Operated Breaker).....	each	\$13.00
Each Additional Stage (Either Manually Operated or Electrically Operated).....	each	5.00
Current Trip Coils (3).....	per set of three	75.00
Undervoltage Device, Instantaneous.....	each	40.00
Undervoltage Device, Time.....	each	80.00
Self-Supporting Steel Framework (Type FK-143 Only).....	each	30.00
Windlass-Type Tank Lifter (Type FK-143 Only).....	each	9.00
If electrically operated and no current coils ordered, add \$35.		



**G-E Type FK-33 Oil Circuit Breakers****Manually or Electrically Operated****400 Amperes, 2500 Volts—15000 Kilovoltamperes**

Type FK-33 oil circuit breaker is recommended for use on a. c. circuits in small and isolated plants, and for other duties when a breaker of moderate rating is desired.

It is of the single-tank type all poles are in one tank.

Material included: Type FK-33 breaker, Type HA-2 operating lever, necessary instantaneous or time-current trips, mounting details for breaker element, bell cranks with remote control, terminals and nuts, necessary oil.

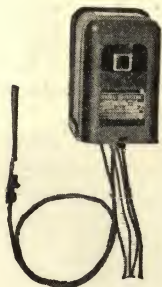
For solenoid-operated breaker, price also includes solenoid closing relay, a potential trip

coil (no current trip coils included), a terminal board, and a four-stage rotary auxiliary switch.

**\*Single-Throw**

Poles	Manually Operated For Panel Mounting		Solenoid Operated, For Mounting on Framework or With Breaker in Cell		Approx. Ship. Wt. Lb.
	Each	Approx. Ship. Wt. Lb. With Oil	Each	Approx. Ship. Wt. Lb. With Oil	
2	\$150.00	100	\$190.00	180	\$270.00
3	150.00	110	190.00	190	270.00
4	215.00	130	255.00	260	335.00
					\$350.00
					415.00
					352
					368
					418

\*For a double-throw breaker, the price is exactly twice that of a single-throw breaker.

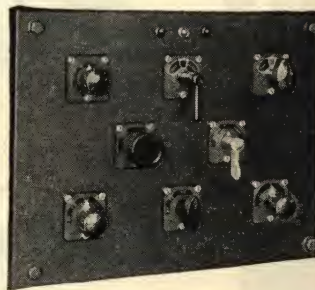
**G-E Type TB-2 Temperature Relays**

The Type TB-2 relay is recommended for protecting machine bearings against overheating. The contacts are silver-to-silver, and are operated on the quick-make and quick-break principle. Contacts will carry 5 amperes continuously or 20 amperes for 1 minute. They will interrupt 1 ampere at 125 volts, d.c. or 7 amperes at 220 volts, a.c.

Each relay has a syphon bulb containing a volatile liquid which vaporizes when heated to a predetermined temperature. This causes a bellows to expand and operate the contacts. Relay is adjusted to operate at approximately 105°C. After the syphon cools, the contacts will remain in the operated position and must be reset by hand.

Relay, exclusive of bulb, is 3¾ inches wide and 6 inches high.

No.	Each	Length of Syphon Tube Inches	Ship. Wt. Lb.
2132592G6	\$42.00	32	12
2132592G3		6	15
2132592G12		10	20

**G-E Miscellaneous Switchgear Devices****Type SB-1 Control and Instrument Transfer Switches****Panel Mounting Typical Type SB-1 Control Switches**

These multicontact switches are for the control of circuit breakers, electrically operated governors, rheostats, and other devices, for the transfer of current and potential coils of instruments, and for many other similar applications.

They are rotary type with cam-operated silver-to-silver contacts. The contacts will carry 20 amperes continuously and are insulated for 600 volts. They will interrupt 10 amperes at 125 volts d.c., non-inductive circuits.

Switches are compact, totally enclosed, dead-front, and require small panel space. Circuit-breaker control switches have a red-green mechanical target that shows last previous operation. Instrument transfer switches have fixed or removable handles according to application. The design is extremely flexible and can be applied to meet special requirements.

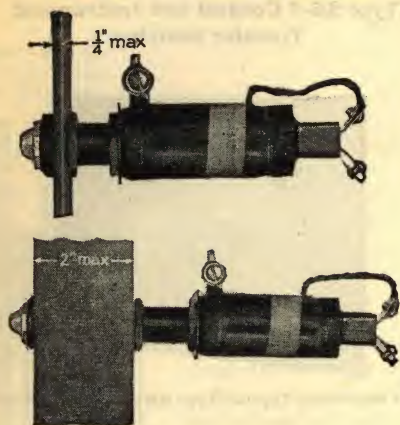
Service	Each	Poles and Throws	No. of Stages	Type of Handle	Escutch- ion Marking	Approx. Ship. Wt. Lb.
Circuit-Breaker Control	\$15.00	Single-Pole Double-Throw	2	Fixed, Pistol Grip	Red and Green Indicator	3
Circuit-Breaker Control	18.00	Single-Pole Double-Throw with Auxiliary Contact	4	Fixed, Pistol Grip	Red and Green Indicator	4
Governor-Motor Control	19.00	Double-Pole Double-Throw	4	Fixed, Radial	Raise-Lower	4
Rheostat Control	19.00	Double-Pole Double-Throw	4	Fixed, Round, Smooth	Raise-Lower	4
Voltmeter Transfer	15.00	Single-Pole Four-Throw	3	Fixed, Round, Knurled	Off, 1-2, 2-3, 3-1	4
Voltmeter Transfer	*13.50	Single-Pole Four-Throw	3	Removable	Off, 1-2, 2-3, 3-1	4
Ammeter Transfer	20.00	Three-Phase Transfer	6	Fixed, Round, Knurled	1, 2, 3	5
Wattmeter Rva. Meter Transfer	18.50	Four-Pole Double-Throw	4	Fixed, Round, Knurled	Watt, Off, Rva.	5
Synchroscope	*14.50	3-Position, 1-Pole Run, 2-Pole Start	2	Removable	R, I	3

\*Handle not included; order as required at \$2.00 each.



## G-E Miscellaneous Switchgear Devices

## Type ET-5 Indicating Lamps



The ET-5 indicating-lamp combination is simple and sturdy in construction.

They are used separately wherever a clearly visible indication is desired, or in combination with control switches. They have a high visibility with low wattage consumption and long life. They occupy little space, and may be mounted on 1 1/2-inch centers.

The device includes a G-E incandescent telephone lamp, T2 bulb, No. 902 slide base with raised prick punches, No. 59X243, 24 volts, 0.032-0.038 ampere. Screw-type compound color caps easily removed and replaced are used in the escutcheon over the lamp and give positive indication. Six colors, clear, red, green, white, blue, and yellow, are listed. Color of cap desired should be specified when ordering complete device. Spare caps for renewals should be ordered separately by designated No.

The resistor element slides over the receptacle body from the rear, and the complete device has provision for soldered connections.

Binding screws are included for use where soldered connections are not desired.

Includes lamp, resistor, and color cap.

Furnished with lamp No. 59X243, color cap, and resistor (when required). When ordering, specify color of color caps. Standard package, 25.

## Operated at One Brilliance

Maximum 1/4-In. Panel	Maximum 2-In. Panel	Per Carton of 4	Per Std. Pkg. of 24	Rated Circuit Voltage
6105700G1	6105700G19	\$11.20	\$60.00	24 D.C.
6105700G2	6105700G20	11.20	60.00	48 D.C.
6105700G9	6105700G27	11.20	60.00	115 A.C.
6105700G3	6105700G21	11.20	60.00	125 D.C.
6105700G10	6105700G28	11.20	60.00	220 A.C.
6105700G4	6105700G22	11.20	60.00	250 D.C.
6105700G11	6105700G29	\$3.80	74.40	440 A.C.
6105700G12	6105700G30	13.80	74.40	550 A.C.
6105700G5	6105700G23	13.80	74.40	660 D.C.

## Resistor with Tap for Dim-Bright Operation

6105700G6	6105700G24	\$12.40	.....	48
6105700G7	6105700G25	12.40	.....	125
6105700G8	6105700G26	12.40	.....	250

## Compound Terminal Boards

## With Cup Terminals

Used where a large amount of small wiring is necessary. Nominal rating, 30 amperes. Terminals take wire up to No. 12 or 19/22.

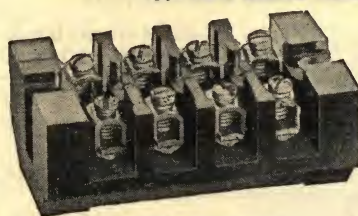
Compound terminal boards are particularly adapted to use with devices on switchboards that have flexible leads instead of studs, such as certain types of relays, trip coils, etc.

No.	Per Carton of 12	No. of Studs	DIMENSIONS, INCHES		Approx. Ship. Wt. Lb.
			Length	Width	
2860351G1	\$12.00	2	1 1/4	1 3/4	1/4
2860351G2	13.00	4	2 1/2	1 3/4	1/2
2860351G3	16.00	6	3 3/4	1 3/4	3/4

## G-E Miscellaneous Switchgear Devices

## Terminals

## Type EB-2 Molded Terminal Boards

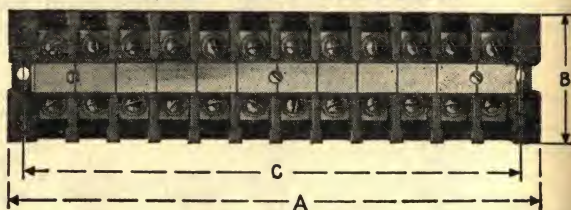


## No. 16EB2AB1, 4-Pole

Type EB-1, except that pressure connectors (instead of binding screws) are furnished for circuit-wire connections. These accommodate wires size No. 14 to 8 inclusive.

No.	Per Carton of 12	No. of Poles	Approx. Ship. Wt. Lb.
16EB2AB1	\$12.00	4	1
16EB2AB2	13.20	6	1 1/2
16EB2AB3	22.20	8	1 3/4
16EB2AB4	30.00	12	2

## Type EB-1 Molded Terminal Boards



## 12-Pole Size

Type EB-1 molded terminal boards are available in 4, 6, 8, and 12-pole sizes; combinations of these are used to suit conditions. A white marking strip is included, so that each circuit can be marked for identification. Each pole is provided with washerhead binding screws for wire connection.

No.	Per Carton of 12	No. of Poles	DIMENSIONS INCHES			Approx. Ship. Wt. Lb.
			A	B	C	
16EB1A1	\$10.20	4	3 1/4	2	2 7/8	3/4
16EB1A4	12.00	6	4 1/2	2	4 1/8	1
16EB1A2	18.00	8	5 3/4	2	5 5/8	1
16EB1A3	24.00	12	8 1/4	2	7 7/8	1 1/2

## Type PK-2 Test Blocks and Plugs



## Type PK-2 Test Block, 4-Pole, with Cover in Place

For testing instruments, meters, and relays. Essentially 4-pole and 6-pole jacks, provided with molded Textolite covers having internal plug contacts. Furnished with various combinations of auxiliary contacts which automatically short-circuit the current transformer when the cover is removed. A block and its cover are the equivalent of a double-throw test switch.

The 4-pole and 6-pole test plugs are provided with studs and links, and may be permanently connected to the testing equipment for any of the various test methods in use. Testing setup is obtained simply by removing the cover and substituting the properly connected test plug. Normal connections are restored by replacing the cover. Rated 250 volts, 10 amperes.

## With Covers, Current or Potential

	Each	4-Pole		6-Pole	
		Approx. Ship. Wt. Lb.	Approx. Ship. Wt. Lb.	Approx. Ship. Wt. Lb.	Approx. Ship. Wt. Lb.
For 1, 1 1/2 or 2-In. Panels.....	\$5.00	2	\$7.00	3	
For 1/2 to 1/2-In. Steel Panels.....	5.00	2	7.00	3	
Test Plug.....	*2.50	2	*3.50	3	

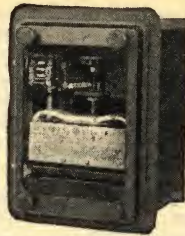
\*If ordered with test blocks.



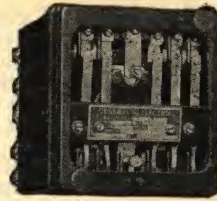
## G-E Relays and Auxiliary Relays



**Type IBC Time Induction Overcurrent Relay With Directional Control, Semiflush Drawout Construction, 6½ Inches Wide and 15½ Inches High**



**Type IAC Time Induction Overcurrent Relay, Semiflush Drawout Construction, 6½ Inches Wide and 9½ Inches High Over all**



**Type HFA Instantaneous Auxiliary Relay, 6-Circuit**



**Type HGA Instantaneous Auxiliary Relay**

Relay protection is applied to an electric system for minimizing interruptions of service and damage to apparatus which result from abnormal conditions in the system. The primary considerations are:

To maintain service over the greatest possible portion of the system, under all conditions. To disconnect only the circuit in which a fault has developed. To disconnect the faulty portion as quickly as possible. To prevent injurious heating caused by short circuits or heavy overcurrents.

## Types IAC and IAV

## Induction Time-Overcurrent and Voltage Relays

Type IAC induction time relays are for the over-current protection of single-phase and polyphase circuits where permanence of operating characteristics and high accuracy in timing are essential. The time of operation is inverse at low current values, and approaches a definite time at higher current values. These relays are for use in connection with current transformers, for mounting on switchboard panels.

The Type IAV overvoltage and undervoltage relays are

## \*Type IAV Overvoltage and Undervoltage Relays—60 Cycles

RATINGS		Undervoltage		Combined Undervoltage and Overvoltage		Approx. Ship. Wt. Lb.
Volts	Operating Range Volts	Contacts	Each	Contacts	Each	
115	55-140	One-Circuit Close, When Voltage Drops to Tap Rating		†Double-Throw	\$65.00	18
230	110-280					
460	220-560					

\*Type IAS Overcurrent Relays—60 Cycles  
With One-circuit Normally Open Contacts

RATINGS		Inverse		Very Inverse		Approx. Ship. Wt. Lb.
Minimum Pickup, Amperes	Current Operating Range, Amp.	Time Overcurrent Each	Time OC with Instantaneous Element Each	Time OC with Internal Tripping Relay Each	Time OC with Instantaneous Element Each	
4	4-16	\$45.00	\$61.00	\$61.00	\$45.00	18
1.5	1.5-6					
0.5	0.5-2.0					

\*25 and 50-cycle relays, at same price.

†The maximum continuous voltage rating of the IAV relay, at any tap, is 110 per cent of the relay voltage rating.

‡Double-throw contacts for electrically separate single-circuit connections. Left-hand contacts close when voltage

is equal to, or greater than, tap rating. This value is adjustable from 50 to 95 per cent of tap rating.

§Instantaneous element has operating range 10-40 amperes.

||Limited to circuits where short-circuit current (secondary) will not exceed 100 amperes.

Type	Each	Principal Features	Current Application	DIMENSIONS, INCHES			CONTACT RATINGS			Ship. Wt. Lb.
				Height	Width	Depth	Min-ute	Con-tin-u-ous	Break at 125 V D.C.	
HEA11A	\$55.00	Multicontact Hand-reset, Mounted on Back of Panel with Reset Handle on Front, 6 Circuit Contacts.....	D.C.	4⅜ <sub>16</sub>	2⅜ <sub>16</sub>	11⅞ <sub>16</sub>	20	20	1.5	6
HEA11B	65.00	Same as Type HEA11A, Except 10-Circuit	D.C.	4⅜ <sub>16</sub>	2⅜ <sub>16</sub>	12⅞ <sub>16</sub>	20	20	1.5	8
HEA11G	80.00	Same as Type HEA11A, Except 16-Circuit	D.C.	4⅜ <sub>16</sub>	2⅜ <sub>16</sub>	14⅞ <sub>16</sub>	20	20	1.5	11
HFA11A	22.00	Same as Type HFA12A, Except 6-Circuit	*A.C. or D.C.	6⅞ <sub>32</sub>	5⅞ <sub>32</sub>	5⅞ <sub>8</sub>	30	12	3	7
HGA11	9.00	Hinged-Armature Type, Single-Unit, 4 Circuit Contacts, Self-reset (2 Circuits, Double-Throw).....	*A.C. or D.C.	4½	2½	4⅞ <sub>16</sub>	30	12	3	3
ICR	95.00	Undervoltage and Phase-rotation Relay for Protecting Motors Against Undervoltage, Open-Phase, and Reverse-Phase Rotation. Single-Pole Instantaneous Units.....								

\*Specify whether for a.c. or d.c. service, and in all cases give voltage of circuits in which relays are to be used.

A.C. 6 5½ 7½ † † † 19  
†Contacts are provided with 4 or 18-ampere holding coils in series with contacts.



## G-E Type LP-101 Knife Switches

The solid stationary tongue-type contacts and double blades of Type LP-101 G-E knife switches offer the advantages of low temperature rise, ease of operation, and reduced periodic maintenance year after year. Switches are back-connected for mounting on 1 to 2-inch panels. All are provided with silver-to-silver line-pressure contacts that materially lengthen the useful life of the switch.

Switches 400 to 1200 amperes have round threaded studs, with two nuts per stud. Single-throw switches are furnished with one cable-terminal connector per pole; double-throw, with two.

Switches 1600 amperes and above have laminated studs. When ordering, give direction desired, whether horizontal or vertical; otherwise vertical slots will be furnished.

Type LP-101 knife switches are approved by, and meet all requirements of, the National Board of Fire Underwriters. They are made in single, double, triple, and 4-pole combinations for either single or double-throw operation without provision for fuses. Switches with provision for NEC Standard fuses are available in similar combinations for single-throw operation only in capacities up to and including 600 amperes.

Order by No., or give full description stating: poles, throw, ampere and voltage rating, with or without fuse connections, and any special requirements.

Write for information on special requirements, accessories, etc.

### 400 to 1200 Amperes Inclusive Without Fuse Clip—Round Studs

RATING		Single-Pole			Double-Pole			Triple-Pole			4-Pole			
Volts	Amperes	No.	Each	Wt. Lb.	No.	Each	Wt. Lb.	No.	Each	Wt. Lb.	No.	Each	Wt. Lb.	
D.C.	A.C.	D.C.	Throw											
250	500	400 600	Single	6129955G17	\$11.50	7	6129955G18	\$21.00	14	6129955G19	\$31.00	20	6129955G20	\$43.00
				6129955G33	17.00	12	6129955G34	31.00	23	6129955G35	46.00	32	6129955G36	63.00
				6129955G49	26.00	16	6129955G50	47.00	32	6129955G51	70.00	46	6129955G52	96.00
250	500	800 1200 400 600	Double	6129955G65	37.00	23	6129955G66	67.00	45	6129955G67	101.00	67	6129955G68	137.00
				6129955G21	17.00	9	6129955G22	31.00	18	6129955G23	46.00	27	6129955G24	62.00
				6129955G37	25.00	15	6129955G38	45.00	30	6129955G39	67.00	43	6129955G40	92.00
*600	*600	800 1200 400 600	Double	6129955G53	37.00	22	6129955G54	68.00	43	6129955G55	102.00	69	6129955G56	139.00
				6129955G69	53.00	37	6129955G70	96.00	73	6129955G71	146.00	109	6129955G72	199.00
				6129955G25	13.00	9	6129955G26	24.00	15	6129955G27	36.00	22	6129955G28	50.00
*600	*600	600 800 1200 400 600	Single	6129955G41	20.00	10	6129955G42	36.00	25	6129955G43	54.00	35	6129955G44	73.00
				6129955G57	30.00	13	6129955G58	54.00	35	6129955G59	81.00	48	6129955G60	110.00
				6129955G73	42.00	18	6129955G74	77.00	48	6129955G75	115.00	70	6129955G76	159.00
*600	*600	400 600 800 1200	Double	6129955G29	19.00	7	6129955G30	35.00	20	6129955G31	53.00	30	6129955G32	72.00
				6129955G45	29.00	12	6129955G46	48.00	34	6129955G47	78.00	46	6129955G48	96.00
				6129955G61	42.00	17	6129955G62	76.00	46	6129955G63	113.00	72	6129955G64	155.00
				6129955G77	62.00	26	6129955G78	110.00	78	6129955G79	165.00	112	6129955G80	225.00

### With Clips for NEC Fuses on Hinge End (Fuses Not Included)

250	250	400	\$18.00	7	6129956G11	\$34.00	18	6129956G12	\$50.00	29	6129956G13	\$69.00	40
		600	27.00	12	6129956G20	50.00	32	6129956G21	75.00	43	6129956G22	101.00	56
250	500	400	22.00	8	6129956G16	40.00	18	6129956G17	60.00	29	6129956G18	82.00	40
		600	33.00	14	6129956G25	60.00	32	6129956G26	89.00	43	6129956G27	121.00	56

### 1600 to 6000 Amperes, 250 Volts, D.C. (500 Volts, A.C.)—600 Volts, A.C. or D.C. Laminated Studs

250	500	1600	1600	6052371G1	\$75.00	31	6052371G2	\$136.00	63	6052371G3	\$205.00	95	6052371G4	\$279.00	127
		2500	2000	6052373G1	94.00	43	6052373G2	171.00	88	6052373G3	255.00	133	6052373G4	350.00	177
		4000	3000	6052375G1	130.00	62	6052375G2	237.00	124	6052375G3	354.00	187	6052375G4	484.00	249
		6000	4000	6052377G1	180.00	117	.....	.....	.....	.....	.....	.....	.....	.....	.....
		8000	5000	6159257G1	242.00	130	.....	.....	.....	.....	.....	.....	.....	.....	.....
		10000	6000	6052379G1	301.00	168	.....	.....	.....	.....	.....	.....	.....	.....	.....
250	500	1600	1600	6052371G5	108.00	42	6052371G6	198.00	85	6052371G7	297.00	129	6052371G8	405.00	173
		2500	2000	6052373G5	135.00	58	6052373G6	248.00	117	6052373G7	371.00	178	6052373G8	507.00	237
		4000	3000	6052375G5	189.00	83	6052375G6	343.00	167	6052375G7	514.00	251	6052375G8	702.00	334
		6000	4000	6052377G2	264.00	160	.....	.....	.....	.....	.....	.....	.....	.....	.....
		8000	5000	6159257G2	352.00	180	.....	.....	.....	.....	.....	.....	.....	.....	.....
		10000	6000	6052379G2	439.00	235	.....	.....	.....	.....	.....	.....	.....	.....	.....
		1600	1600	6052372G1	86.00	32	6052372G2	157.00	66	6052372G3	235.00	99	6052372G4	321.00	133
		2500	2000	6052374G1	108.00	45	6052374G2	196.00	91	6052374G3	294.00	138	6052374G4	402.00	184
		4000	3000	6052376G1	149.00	65	6052376G2	272.00	130	6052376G3	407.00	196	6052376G4	557.00	262
		6000	4000	6052378G1	208.00	122	.....	.....	.....	.....	.....	.....	.....	.....	.....
		8000	5000	6159258G1	279.00	150	.....	.....	.....	.....	.....	.....	.....	.....	.....
		10000	6000	6052380G1	347.00	170	.....	.....	.....	.....	.....	.....	.....	.....	.....
*600	*600	1600	1600	6052372G5	124.00	43	6052372G6	228.00	88	6052372G7	341.00	133	6052372G8	468.00	170
		2500	2000	6052374G5	155.00	60	6052374G6	286.00	121	6052374G7	427.00	183	6052374G8	583.00	245
		4000	3000	6052376G5	218.00	86	6052376G6	394.00	173	6052376G7	589.00	260	6052376G8	807.00	347
		6000	4000	6052378G2	304.00	165	.....	.....	.....	.....	.....	.....	.....	.....	.....
		8000	5000	6159258G2	407.00	200	.....	.....	.....	.....	.....	.....	.....	.....	.....
		10000	6000	6052380G2	506.00	237	.....	.....	.....	.....	.....	.....	.....	.....	.....

\*To be used for disconnecting purposes only.



## G-E Type LG-218 Indoor Disconnecting Switches



Fig. 1. Single-Pole, Single-Throw 7500-Volt, 3000 Amperes Disconnecting Switch Front-Connected on Class A-4 Porcelain Insulator Units

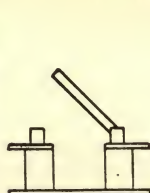


Figure 2

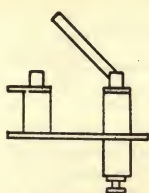


Figure 3

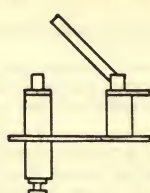


Figure 4

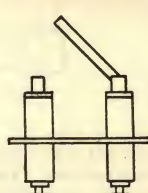


Figure 5



Figure 6

## Single-Throw Disconnecting Switches

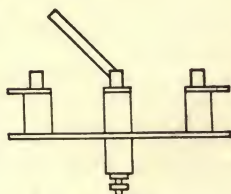


Figure 7

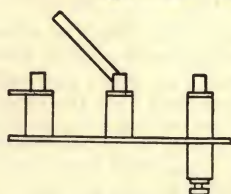


Figure 8

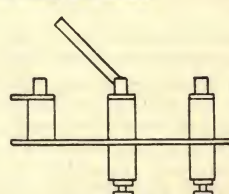


Figure 9

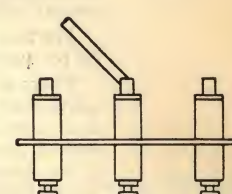


Figure 10

## Double-Throw Disconnecting Switches

The Type LG-218 switches are of laminated blade construction, with each blade composed of two pieces of hard-drawn, high-quality copper, contacting over stationary copper tongues. Switches have silver-to-silver line-pressure contacts at both the hinge tongue and the contact tongue. Contacts are self-adjusting, and pressure is maintained by phosphor-bronze spring washers.

Each switch is mounted on porcelain insulators with metal bases. Insulators are in accordance with N. E. M. A. Standards.

All switches include blade latches. Up to and including

1200 amperes, all switches have round studs; up to and including 600 amperes, pressed-tube cable-terminal connectors with contact nuts are included. For 1200-ampere switches, terminal connectors must be ordered as extras, if desired. Switches above 1200 amperes are provided with laminated bar connections; no cable-terminal connectors are included. The switches can be had with the laminations of any back-connected stud either vertical or horizontal, but unless otherwise specified, the switches will be furnished with contact-stud laminations horizontal; hinge-stud, vertical.

When ordering, specify the type, figure number, and the voltage and current rating.

## Type LG-218—On Insulators and Steel Bases

Volts	Amperes	Fig. 2		Fig. 3 and 4		Fig. 5		Fig. 6		Fig. 7 and 8		Fig. 9		Fig. 10		Switches with Manual Control Mechanisms for Single-Throw Group Operation—	
		Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Class 1-F, Direct 3-Pole Each	Class 2-F, Indirect 3-Pole Each
5000	200	\$19.00	25	\$26.00	30	\$32.00	34	\$28.00	42	\$35.00	50	\$42.00	53	\$49.00	56	.....	.....
	400	20.00	28	27.00	36	34.00	40	30.00	45	37.00	53	44.00	57	51.00	60	\$125.00	\$150.00
	600	26.00	33	35.00	42	44.00	50	39.00	52	48.00	62	57.00	66	66.00	72	143.00	168.00
	1200	45.00	45	61.00	56	77.00	66	68.00	69	83.00	83	99.00	87	115.00	95	200.00	225.00
7500	400	22.00	35	30.00	43	37.00	50	33.00	55	41.00	62	48.00	66	56.00	68	131.00	156.00
	600	28.00	40	38.00	51	48.00	60	42.00	63	52.00	74	62.00	81	71.00	88	149.00	174.00
	1200	47.00	52	64.00	66	80.00	75	71.00	80	87.00	95	103.00	104	120.00	114	206.00	231.00
	2000	112.00	96	151.00	110	190.00	125	168.00	125	207.00	150	246.00	165	286.00	180	.....	.....
	3000	145.00	135	196.00	160	247.00	185	218.00	185	268.00	215	319.00	240	370.00	250	.....	.....
15000	4000	207.00	220	279.00	235	352.00	250	311.00	300	383.00	325	455.00	340	528.00	350	.....	.....
	400	25.00	48	34.00	60	43.00	66	38.00	72	46.00	87	53.00	92	64.00	99	165.00	190.00
	600	32.00	54	43.00	66	54.00	75	48.00	78	57.00	98	70.00	106	82.00	112	186.00	211.00
	1200	52.00	67	70.00	82	88.00	93	78.00	96	96.00	120	114.00	131	133.00	144	246.00	271.00
	2000	120.00	100	162.00	115	204.00	135	180.00	145	222.00	160	264.00	175	306.00	190	.....	.....
23000	3000	155.00	140	209.00	175	264.00	205	233.00	210	287.00	250	341.00	275	395.00	290	.....	.....
	4000	220.00	225	297.00	250	374.00	270	330.00	330	407.00	350	484.00	375	561.00	390	.....	.....
	400	30.00	63	41.00	88	51.00	100	45.00	93	56.00	123	66.00	135	77.00	150	180.00	205.00
	600	37.00	69	50.00	96	63.00	110	56.00	100	68.00	135	81.00	150	94.00	166	201.00	226.00
	1200	59.00	82	80.00	112	100.00	127	89.00	120	109.00	156	130.00	177	150.00	200	267.00	292.00
	2000	130.00	120	176.00	155	221.00	185	195.00	170	241.00	225	286.00	240	332.00	270	.....	.....
	3000	169.00	165	228.00	215	287.00	260	254.00	240	313.00	300	372.00	340	431.00	370	.....	.....
	4000	240.00	250	324.00	300	408.00	350	360.00	365	444.00	420	528.00	450	612.00	475	.....	.....

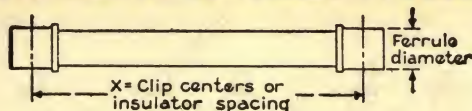
For ratings above 23000 volts, or 4000 amperes, and for grouping of three switches on one base, write for information.

Double-blade, double-throw transfer, or single-throw, tandem transfer switches in ratings listed for Type LG-218 switches are also available upon application.



## G-E Current-Limiting Power Fuse Units

### Type EJ-1, For Indoor Service—Type EJO-1, For Outdoor Service



Limits the short-circuit current to a value considerably below that usually encountered in short-circuit interruptions. The link melts on the rising current-wave, limiting further rise by the rapid increase of resistance, and causes complete interruption at the first current zero. The fuse unit acts as a current-limiting device in this manner on all currents of sufficient magnitude to melt the fuse link before the current reaches the peak of its initial normal short-circuit value.

The fuse unit consists of one or more fuse wires, wound on a heat-resisting core and surrounded by quartz granules enclosed in a glass tube with a metal ferrule at each end.

There is no discharge during interruption, no noise, and negligible gas pressure. The fuse units may be completely enclosed and mounted with the same electrical clearances used for noninterrupting devices of the same voltage rating, such as disconnecting switches, etc. This makes them particularly suitable for mounting in metal-enclosed switchgear, in any location where space economy is needed, or where expulsion fuses are not acceptable. Their high interrupting ratings are also strong recommendations for their use.

Two types available: Type EJ-1 for indoor service only, and Type EJO-1 for outdoor service at all voltages and for indoor use at voltages above 5000.

Type EJ-1 indoor unit is made in three tube sizes:

**Size A:**  $\frac{13}{16}$ -inch diameter ferrules, for use interchangeably with No. 197563 G-E 2300-volt potential-transformer cartridge fuses.

**Size B:**  $\frac{19}{16}$ -inch diameter ferrules, for use interchangeably with Type ES-1 G-E spring-operated potential-transformer fuse units.

**Size C:** 2-inch diameter ferrules, the standard line of current-limiting fuse units.

The Type EJO-1 outdoor units are available only in the Size C, 2-inch diameter ferrule units.

### Size A, Type EJ-1 Only— $\frac{13}{16}$ -Inch Diameter Ferrule

#### For Potential-Transformer and Cutout Mounting

Continuous Ampere Rating, 100 Per Cent	4 1/4"		4 1/4"		8 1/4"		8 1/4"		8 1/4"		11 1/2"		23000-Volt	
	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.
1E, 2E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3E to 10E	\$2.00	100000	\$2.50	60000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

### Size B, Type EJ-1 Only— $\frac{19}{16}$ -Inch Diameter Ferrule

#### For Potential-Transformer and EK-1B or EK-3B Mountings

Continuous Ampere Rating, 100 Per Cent	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.
0.5E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1E, 2E, 3E	.....	.....	.....	.....	\$5.00	60000	\$5.00	60000	\$6.00	80000	\$7.50	130000

### Size C, 2-Inch Diameter Ferrule

Type EJ-1 Indoor to 5000 Volts Inclusive for Types EK-1C and EK-3B Mountings  
Type EJO-1 Indoor Above 5000 Volt and All Outdoor for Types EKO-1C and EKO-3C Mountings

Continuous Ampere Rating, 100 Per Cent	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.	Each	Inter- rupt- ing Rating, Amps.
0.5E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$15.00	70000
1E, 2E, 3E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15.00	70000
5E, 7E	.....	.....	.....	.....	\$10.00	60000	\$10.00	60000	\$11.00	80000	\$13.00	80000	15.00	70000
10E	.....	.....	.....	.....	10.00	60000	10.00	60000	11.00	80000	13.00	80000	15.00	30000
15E, 20, 25E	.....	.....	.....	.....	16.00	60000	16.00	60000	.....	80000	.....	80000	.....	.....

### G-E Fuse Supports and Fuse Disconnecting Switches

For Types EJ-1 and EJO-1 G-E Fuse Units

Types EK-1 and EK-2, for Indoor Service (Type EK-1B for Size B and Type EK-1C for Size C Fuse Units)



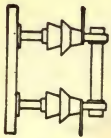
Volts	Type of Fuse Unit Used	Type of Insulator Used	Types EK-1B or EK-1C Fuse Supports		Types EK-3B or EK-3C Fuse Disconnecting Switches		Types EK-3B or EK-3C Fuse Disconnecting Switches		Types EK-3B or EK-3C Fuse Disconnecting Switches		Types EK-3B or EK-3C Fuse Disconnecting Switches		Types EK-3B or EK-3C Fuse Disconnecting Switches	
			Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.
2,500	EJ -1	5-Kv.	\$14.00	20	\$18.50	24	\$23.00	35	\$22.00	33	\$28.00	38	\$35.00	39
2,500	EJ -1	7.5-Kv.	15.00	25	20.00	32	25.00	35	23.00	39	30.00	45	37.00	47
5,000	EJ -1	5-Kv.	14.00	25	18.50	27	23.00	29	22.00	39	28.00	41	35.00	42
5,000	EJ -1	7.5-Kv.	15.00	32	20.00	38	25.00	41	23.00	45	30.00	53	37.00	53
7,500	EJO-1	7.5-Kv.	15.00	36	20.00	44	25.00	44	23.00	50	30.00	57	37.00	56
15,000	EJO-1	15-Kv.-A-3	16.50	45	22.50	51	29.00	54	26.50	59	33.00	63	41.00	66
23,000	EJO-1	23-Kv.-A-2	21.00	57	27.50	74	35.50	81	31.00	70	40.00	85	48.00	95



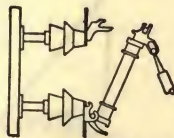
## G-E Current-Limiting Power Fuse Units

### Types EKO-1C and EKO-3C

For Outdoor Service



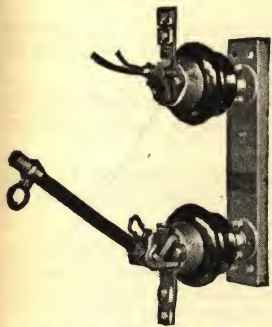
Type EKO-1C Fuse Support



Type EKO-3C Fuse Disconnecting Switch

Volts	Type of Fuse Unit Used	Type EKO-1C		Type EKO-3C	
		Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.
2500	EJO-1	\$16.00	50	\$27.00	60
5000	EJO-1	16.00	50	27.00	60
7500	EJO-1	16.00	50	27.00	60
15000	EJO-1	20.00	70	30.00	78
23000	EJO-1	26.00	85	36.00	93

### Types EF-1 and EF-2 Switches



Type EF-2 Fuse-Disconnecting Dropout Switch, 15000 Volts

**Type EF-1.** This is a combined fuse cutout and disconnecting switch to protect circuits against short-circuit currents. It consists of a galvanized steel-channel base, insulators, and a hinge-and-contact assembly for mounting a Type EG-1 fuse unit.

**Type EF-2.** This switch is similar to the Type EF-1 plus the dropout feature, i.e., when the fuse blows, the fuse opens to a dropout position as illustrated.

For fuse-disconnecting switch operation, use non-metallic switch hooks indoors, and superinsulated hooks outdoors.

In ordering, give phase-to-phase voltage and frequency.

Disconnecting Switch, Without Fuse			Combination of Types FR-2 Resistor and Fuse Disconnecting Switch, Without Fuse Units		
Volts	Type EF-1, Each	Type EF-2, Each	Approx. Ship. Wt. Lb.	Type EF-1, Each	Type EF-2, Each
7500	\$27.00	\$33.00	57	.....	.....
15000	30.00	36.00	90	.....	.....
23000	36.00	42.00	102	.....	.....
34500	44.00	50.00	141	.....	.....
46000	62.00	71.00	222	\$138.00	\$147.00
69000	92.00	100.00	330	200.00	210.00

### Type EG-1 Expulsion Fuse Units

The Type EG-1 fuse is of the spring-expulsion type, providing rapid operation high interrupting ability, and positive operating performance. Available in current ratings as included in the price list below; higher voltage ratings furnished on request.

Each fuse unit is stamped with its rating, followed by the letter E. This indicates that the fuse will carry its rated current continuously, and that it will meet all N.E.M.A. requirements for such fuses.

Volts	All Ratings, Each	Length, Inches	Approx. Ship. Wt. Lb.
7500	\$4.00	15 1/2	3
15000	5.00	18 3/8	4
23000	6.00	24 3/8	4
34500	7.00	30 3/8	4
46000	8.50	36 3/8	5
69000	13.00	45 3/8	5

Ampere Ratings: 0.5E, 1E, 2E, 3E, 5E, 7E, 10E, 15E, 20E, 25E, 30E, 40E, 50E, 65E, 80E, 100E, 125E.

## G-E Outdoor Air Switches

### Type TA Horn-Gap Switches



Type TA Horn-Gap Switch, Triple-Pole, Single-Throw, 34500 Volts, 400 Amperes, With Direct Manual Operating Mechanism

The Type TA switches are group-operated and of tilting-insulator construction. The application of these switches is most advantageous where maintenance of service and reliable switching equipment are of great importance. Features are:

Spring-pressure silver line contacts.

All-copper current-carrying parts.

Coiled buffer springs assist switch operations.

Corrosion-resisting pins prevent rusting and binding.

All steel and malleable-iron parts hot-dip-galvanized.

Standard cement cap-and-pin insulators.

Insulators interchangeable with those on other outdoor devices of same rating.

Manual or motor mechanism can be padlocked in either open or closed position.

Arc horns prevent burning of contacts during switch operation.

The TA switches are available in triple-pole groups, the poles being interconnected by a common shaft to provide simultaneous operation of all the poles from a single mechanism.

The switch parts consist of the blade, a short copper bar of ample cross section; the stationary contact, made up of two large semicylindrical copper blocks floating against heavy springs that force them against the blade for line-pressure contacts; and the tilting insulator which carries the blade. Flexible, woven wire copper braids provide full copper current carrying from all fixed to movable parts.

All prices are for 3-pole switches, including manual operating mechanism with a maximum of one offset bearing, and including interconnecting pipe or equivalent square shafting and bolted terminal connectors.

RATING		Each	Approx. Ship. Wt. Lb.	RATING		Each	Approx. Ship. Wt. Lb.
Volts	Amps.			Volts	Amps.		
7500	400	\$330.00	300	15000	400	\$375.00	700
15000	400	340.00	400	23000	600	420.00	800
23000	400	380.00	775	34500	600	495.00	1050
34500	400	450.00	1025	46000	600	650.00	1500
7500	400	365.00	570	.....	.....	.....	.....

### Type TB Switches

This is a group-operated tilting-insulator switch for low-revenue-producing installations. It is especially suitable for pole-top mounting on rural lines, distribution circuits with light loads, and small industrial applications. The insulators are of the 2-inch, bolt-circle, rural type. The switch parts are of high-quality, line-pressure contact, with non-corrodible hardware parts, and horn gaps.

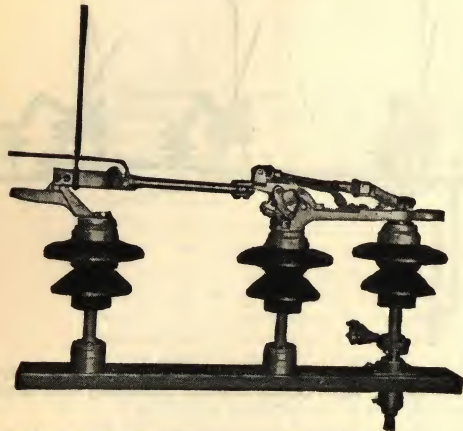
Volts.....	7500-SS	15000-SS
Amperes.....	200	200
Each.....	\$135.00	160.00

Prices include triple-pole switches with direct mechanism (with single outboard bearing and guide plates when required and vertical operating pipe).



G-E Outdoor Air Switches

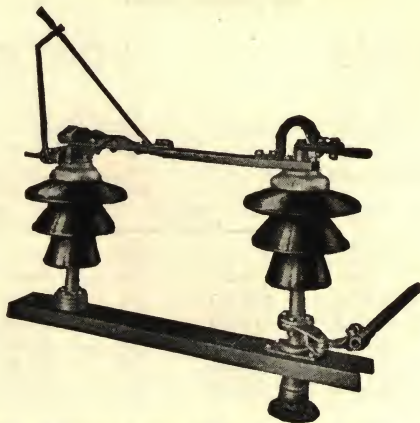
Type RD Switches



Type RD Single-Pole Element, 34500-Volt, 600 Amperes

G-E Outdoor Air Switches

Type RK Switches



Single-Pole Element of Type RK Switch, 46 KV, Switch Closed

A group-operated switch of the rotating-insulator construction. Available in two arrangements:

1. Horn-gap switch for horizontal, upright mounting on outdoor steel structures or pole tops, and used for opening transformer-bank primaries, or for line sectionalizing.

2. Disconnecting switch (less arc horns) for vertical mounting, and used for isolating power circuit breakers or lightning arresters.

Contacts of the full-floating, spring-pressure, silver-line-contact type. They consist of two large, semicylindrical, silver-surfaced, copper drop forgings, enclosed in a housing, and backed by double, helical, nonferrous springs. The ends of the housing are flared to guide the blade. Flexible copper braids of ample size join the contact blocks to the switch terminal. The blade makes line contact, and the pressure on it increases as the contacts spread.

The blades are made of one piece, hard-drawn copper tubing. The contact end is pressed flat and is silver-surfaced. It is clamped at the hinge to the upper link of a parallelogram linkage. Extra-flexible copper braids carry the current from the blade clamp to the hinge support.

The switch is opened and closed by a dual motion of the blade. In closing, the blade first completes a full vertical arc of travel to the horizontal position, and then moves forward into the stationary contacts. In opening, this operation is reversed.

Can be operated either manually or by a motor-operated mechanism.

Prices are for 3-pole switches, including manual mechanism, with one outboard bearing, vertical operating pipe, couplings, guide plate, ground braid as required, and bolted terminal connectors.

RATING		Each	Approx. Ship. Wt. Lb.
Volts	Amperes		
7500	400	\$330.00	280
	600	365.00	280
	1200	525.00	400
15000	400	340.00	410
	600	375.00	410
	1200	535.00	460
23000	400	380.00	430
	600	420.00	430
	1200	450.00	540
34500	400	495.00	540
	600	650.00	730
	1200	990.00	1150

Group-operated of the rotating-insulator, horizontal-break, two-insulator stacks-per-pole type, for mounting on steel frame structures or pole tops.

They are equipped with horn gaps, and are applicable for the opening of transformer-bank primaries, and for line sectionalizing.

Also they are applicable for isolating purposes, for such devices as power circuit breakers, and lightning arresters, when furnished without arc horns.

These switches incorporate the following principal construction features: Self-aligning spring-pressure silver line contacts; nonferrous construction above the insulator caps; hot-dipped galvanized steel and malleable-iron parts; corrosion-resisting pins and roller bearings (Timken).

Blades of switches rated 23 kilovolts and above are of the broken-back construction, to provide icebreaking action at the contacts.

Contact consists of two semicylindrical, silver-surfaced copper drop forgings, enclosed in a housing with double helical nonferrous springs. The flared ends of the housing guide the blade, which makes line contact, the pressure on the blade increasing as it spreads the contacts.

Prices include triple-pole switch, with bolted terminal connectors, and manual operating mechanism with vertical operating pipe couplings, guide plates, grounding braid, and outboard bearing, as required.

Rating, Volts	Rating, Amperes	Each	Approx. Ship. Wt. Lb.
7500	400	\$293.00	280
	600	313.00	280
	1200	433.00	400
15000	400	300.00	410
	600	320.00	410
	1200	440.00	460
23000	400	325.00	430
	600	345.00	430
	1200	440.00	540
34500	400	365.00	540
	600	400.00	540
	1200	520.00	730
46000	400	795.00	1150
	600		
	1200		

Motor Operating Mechanisms

Prices of group-operated air switches include manual mechanism with a maximum of one offset bearing, vertical operating pipe and, when included in the order, pipe couplings and guide plates. Prices of motor operating mechanism include the additional equipment to add to the manual mechanism for electrical operation. Prices of the motor operating mechanism also include one 4-stage, 4-pole auxiliary switch and necessary control relays, but no control switch; control switch must be ordered separately.

Prices on application.



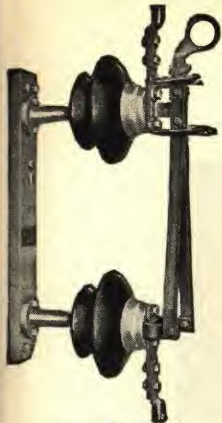
## G-E Outdoor Air Switches

## Type FA Hook-Operated Switches

Made in single-pole units, single, and double-throw.

Suitable for disconnecting purposes and should not be used to open load currents. Switch parts are mounted on G-E standard-type insulators.

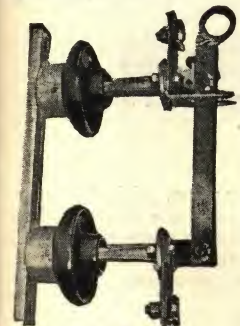
Blades consist of two hard-drawn copper sections mounted back-to-back to form a blade of great mechanical strength. On switches rated above 23000 volts, the blades are of truss-like formation. The blades slide over a tongue-like contact and silver-to-silver liner pressure is maintained by phosphor-bronze spring washers, for maximum conductivity.



Type FA-101

Volts	RATING Amperes	SINGLE-POLE SINGLE-THROW		SINGLE-POLE, DOUBLE-THROW	
		Each	Approx. Ship. Wt. Lb.	Each	Approx. Ship. Wt. Lb.
7500	400	\$35.00	55	\$52.50	80
15000		39.00	78	58.50	115
23000		45.00	88	67.50	132
34500		61.00	134	91.50	190
7500	600	40.00	60	60.00	90
15000		44.00	83	66.00	123
23000		51.00	94	76.50	141
34500		66.00	115	99.00	200
46000	1200	83.00	198	.....	...
69000		133.00	265	.....	...
7500		70.00	83	105.00	117
15000		75.00	105	112.00	150
23000		84.00	117	126.00	168

Note: 2000, 3000, and 4000-ampere switches are available upon application.



Type FD-103

## Type FD Hook-Operated Switches

These switches are made in single-pole, single-throw units. Made in ratings of 7500S and 15,000S volts and 200 amperes. Suitable for disconnecting purposes only, and not used to open load currents.

The switch parts are mounted on 2-inch bolt-circle porcelain insulators.

Switches are of the laminated blade, tongue-type silver-to-silver contact construction.

7500-SS	200	\$12.70	30	\$18.85	50
15,000-SS	200	14.40	35	22.35	60

All switches are provided with blade latches, blade guides, and operating eye.

## G-E Switch Hooks

Available with or without rain shield and grounding device. For use with outdoor air switches.

The lower portion of the rod is turned from carefully selected wood. The upper portion is a tubular section made of an insulating compound. Hook is an aluminum-alloy casting.

Length, Feet	WITHOUT RAIN HOOD AND CABLE		WITH RAIN HOOD AND CABLE	
	Each	Approx. Ship Wt. Lb.	Each	Approx. Ship. Wt. Lb.
4	\$7.00	10	.....	..
6	8.00	14	.....	..
8	9.00	18	\$14.00	18
10	10.00	25	15.00	25
12	12.00	30	17.00	30
14	15.00	35	20.00	35
16	18.00	40	23.00	40
18	23.00	45	28.00	45
20	27.00	50	32.00	50
22	32.00	55	37.00	55

## G-E CR9504 Thrustors

Provides Smooth Straight-Line Thrust From Electric Motor Drive



This is a self-contained hydraulic device which exerts a smooth, straight-line thrust (50 to 3200 pounds maximum thrust) in one direction throughout a definite distance (2 and 16-inch maximum stroke). The return stroke is effected by gravity or a spring.

The device can repeat this cycle of operation indefinitely at a rate of 10 to 30 times per minute depending on the size of unit. It is driven by a built-in fractional h.p. motor and therefore the power consumption is small.

CR9504 Thrustor performs services similar to those accomplished by air cylinders and large a.c. and d.c. magnets and solenoids.

Order by CR number and form giving voltage, frequency and phase.

## †CR9504-L—50 Pounds Maximum—2-Inch Stroke

Volts	Phase	Cycle	*Running Current Amperes	Each
110	3	60 & 50	1.2	\$111.00
220/440	3	60 & 50	.43/.23	111.00
550	3	60 & 50	.43	.....
110	1	50 & 60	1.8	91.00
220	1	50 & 60	.9	91.00

## †CR9504-V—100 Pounds Maximum—2-Inch Stroke

110	3	60 & 50	.74	\$189.00
220/440	3	60 & 50	.37/.18	189.00
550	3	60 & 50	.15	189.00
110	1	60	5.0	189.00
220	1	60	2.5	189.00

## †CR9504-N—200 Pounds Maximum—4-Inch Stroke

110	3	60 & 50	1.76	\$210.00
220/440	3	60 & 50	.88/.44	210.00
550	3	60 & 50	.35	210.00
110	1	60	3.0	210.00
220	1	60	1.5	210.00

## †CR9504-T—400 Pounds Maximum—4-Inch Stroke

110	3	60 & 50	1.88	\$238.00
220/440	3	60 & 50	.94/.47	238.00
550	3	60 & 50	.39	238.00
110	1	60	3.8	238.00
220	1	60	1.9	238.00

## †CR9504-M—600 Pounds Maximum—6-Inch Stroke

120	3	60 & 50	2.9	\$280.00
220/440	3	60 & 50	1.4/.7	280.00
550	3	60 & 50	.56	280.00
110	1	60	5.0	280.00
220	1	60	2.5	280.00

\*Inrush current for a.c. motors is approximately 5 times running current.

†Information on d.c. and 25-cycle forms on application.

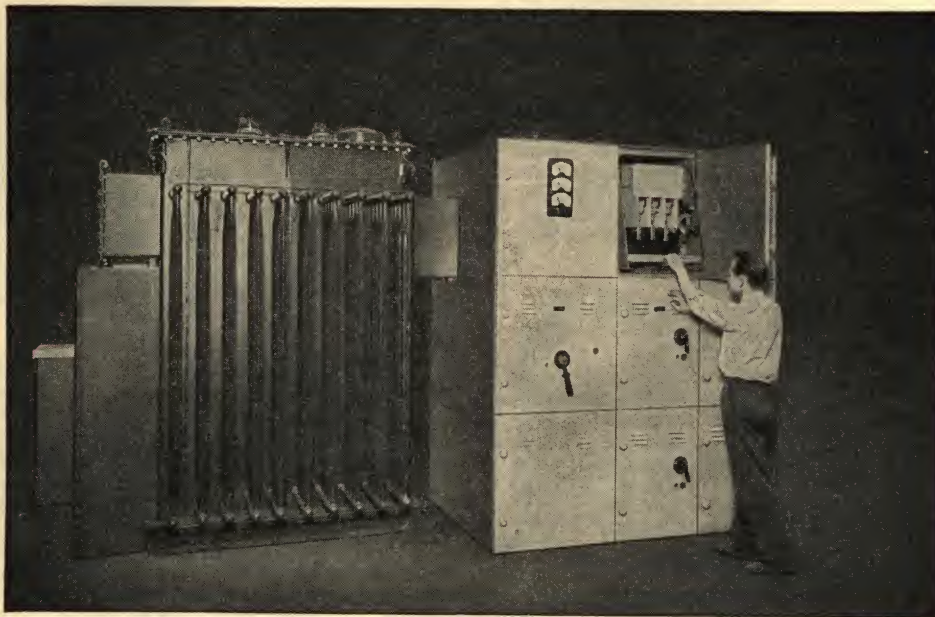
†Same as 220/440-volt, 3-phase thrustors, plus additional price of transformer.



## G-E Load-Center Unit Substations

For Distributing Low-voltage Power in Industrial Plants, Commercial

Buildings—For Power-station Auxiliaries



G-E Load-Center Unit Substation, With Pyranol Transformers and Metal-Enclosed Drawout Air Circuit Breakers, Installed Indoors at Load Centers

Load-center distribution has many big advantages. Elimination of long secondary cable runs, which cause voltage drop, results in better voltage conditions. Proper voltage at point of use means improved motor performance, bright and steady lights. G-E metal-enclosed load-center unit substations are completely factory-engineered and factory-assembled, and are shipped ready to install. They can be installed either indoors or outdoors. They can be put underground in vaults, on the roof, on balconies, or in production areas, usually in space that is otherwise unused.

### Delivery and Installation

G-E load-center unit substations can be selected and ordered quickly and easily from a line of standard units and standard arrangements that fill all requirements of a broad range of applications. Only one purchase transaction is necessary. These units are shipped in two or three complete sections—ready to be bolted together and connected to the power cables. Standardized units, completely assembled and wired at the factory, require no special knowledge by your men to install or to disconnect for removal to new locations.

All live parts are metal-enclosed. Circuit breakers of adequate interrupting capacity insure adequate circuit protection. Pyranol, which is noninflammable, is normally used for the cooling and insulating liquid of the transformer, providing safety for indoor installations.

### Flexibility in Selection of Equipment

General Electric load-center unit substations are adaptable to your particular need. A wide variety of high- and low-voltage switching equipment is available, including oil,

Pyranol, or dry-type transformers, and circuit breakers for either manual or electrical operation.

### Exterior Design

The old style of substation construction, with skeleton steel framework and exposed equipment, is a thing of the past. G-E unit substations are modern in appearance and are compact. They take much less space than the old type. Fences are no longer needed to protect personnel.

### Industrial Lighting

When your industrial load is not heavy, the same load-center unit substation which supplies motor power can be used. Dry-type lighting transformers (capacities 5-25 kilovolt amperes,) which step 480 volts down to 120 volts, can be mounted or hung almost any place in the plant to supply the lighting load.

### Ratings

These standard load-center unit substations serve loads 600 volts and below (208Y/120, 480 volts, etc.) from incoming lines up to 15 kilovolts.

One complete unit substation may consist of metal-clad incoming-line section with oil-blast or magneblast power circuit breakers, a Pyranol (or dry-type, or oil-filled) transformer section, and a low-voltage feeder section with drawout air circuit breakers.

Here is the modern way to help insure an adequate power supply at all times, more important than ever in the light of present conditions.

G-E engineers can help you select a low-cost load-center unit substation, compact, complete, to meet all your requirements. Other apparatus can be combined in one of these units if, for instance, you need the addition of a power rectifier. For further information, ask for latest bulletins.

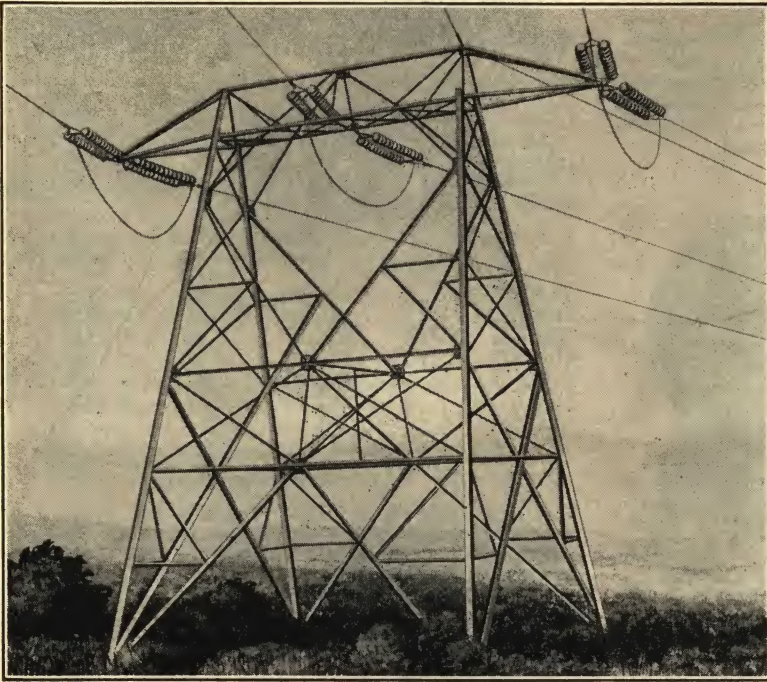


## STEEL TRANSMISSION TOWERS AND SUBSTATIONS

*Complete substations to meet your specification needs are available from Graybar.*

Transformers • Lightning Arresters • Safety Lighting  
Steel Structures • Protective Fence • Switchgear  
Dead Ending Material • Line Switches • Insulators

*The nearest Graybar house will be glad to consult with you and furnish complete data on substation equipment.*



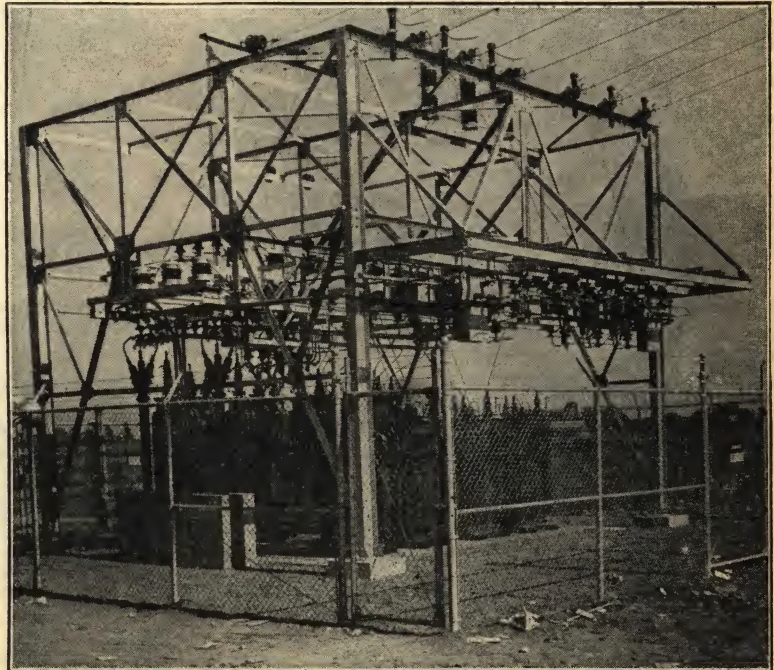
### Steel Transmission Towers

For river crossings, wide ravines, and other long span requirements.

*Complete data available upon request.*

•  
STEEL TRANSMISSION TOWER  
•

•  
RURAL SUBSTATION  
•





## G-E Watthour Meters

All General Electric a.c. watthour meters have substantially the same operating characteristics. The mechanical details differ with the application, type of mounting, and circuit.

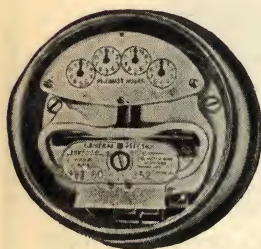
These meters have been called "wide-limit" meters because of their straight-line characteristics. When correctly adjusted, the 15-ampere meter, for instance, has a load-registration curve that practically falls on the 100 per cent line over the range from 0.5 to 60 amperes.

Long-life accuracy is assured by the use of alnico magnets, a low-friction bearing system, and a one-piece supporting frame for accurate and permanent positioning of all parts.

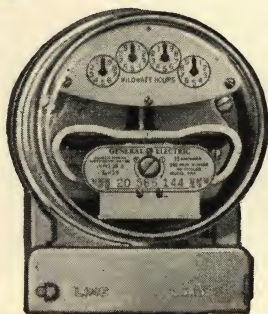
## \*For Alternating Current

Mounting	Type	Max. Amps.	Max. Volts	Circuits
Wall	I-30	50	240	1-Element, 2 or 3-Wire, 1-Phase
Switchboard	IS-8	..	240	1-Element, 2-Wire, 1-Phase
Wall	V-2	50	600	2-Element, 3-Wire
Wall	V-3	50	600	2-Element, 3-Wire, 3-Phase
Wall	V-4	50	120	3-Element, 4-Wire Y, 3-Phase
Wall	V-5	50	120	2-Element, 4-Wire Y, 3-Phase
Wall	V-6	50	240	2-Element, 4-Wire Δ, 3-Phase

**Types I-30-S and I-30-A—Single-Phase**  
60 Cycles



Type I-30-S



Type I-30-A

**Type I-30-S** is the standard meter for socket connection. Connections are made in the socket to receptacles for switch-blade terminals. Approximate dimensions, 7x7½ inches.

**Type I-30-A** is the standard bottom-connected unit. It is suitable for all conventional applications either with the all-service or enclosed mounting. Approximate dimensions, 5½x8½x7 inches.

Both the A and the S types can be used on circuits where the voltage may be 10 per cent above or below the rated voltage of the meter. When ordering meters for voltage outside these limits, the normal operating voltage should be specified.

120 Volts, 2-Wire				240 Volts, 2-Wire			
Amp.	Type I-30-S No.	Type I-30-A No.	Each	Amp.	Type I-30-S No.	Type I-30-A No.	Each
5	85X515	85X499	\$17.15	5	85X518	85X502	\$18.50
15	85X516	85X500	17.15	15	85X519	85X503	18.50
50	85X517	85X501	24.50	50	85X520	85X504	27.25

240 Volts, 3-Wire, 4-Terminal				240 Volts, 3-Wire, 6-Terminal			
Amp.	Type I-30-S No.	Type I-30-A No.	Each	Amp.	Type I-30-S No.	Type I-30-A No.	Each
5	85X521	85X505	\$18.50	5	.....	85X508	\$18.50
15	85X522	85X506	18.50	15	.....	85X509	18.50
50	85X523	85X507	27.25	50	.....	85X510	27.25

For Use with Instrument Transformers

Approximate shipping weight, 10 pounds.

Amp.	Circuit Rating	Type I-30-S No.	Type I-30-A No.	Each
2.5	2-Wire	97X107	85X511	\$21.00
2.5	2-Wire (3-Wire)	97X108	85X513	23.00
2.5	3-Wire	.....	85X514	23.00

Catalog numbers are for ball-type bearings. Jewel-pivot bearings can be supplied at no increase in price.

Mounting	Type	Max. Amps.	Max. Volts	Circuits
Wall	V-7	50	240	3-Element, 4-Wire Δ, 3-Phase
Wall	V-9	50	240	Tot. 3-Wire, 2 or 3-Phase and 2 or 3-Wire, 1-Phase
Wall	V-10	50	240	
Switchboard	DS-19	..	600	2-Element—3-Wire, 1, 2, or 3-Phase—4-Wire, 2-Phase
Switchboard	DS-20	..	120	3-Element, 4-Wire Y, 3-Phase

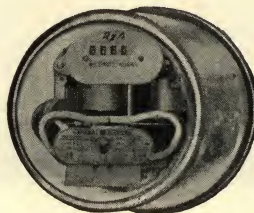
## Sockets for Type I-30-S Meters

All sockets listed have 1-inch conduit outlets. Approximate shipping weight, 2½ pounds.

Sockets with ¾-inch or 1¼-inch outlets are also available. Prices and information on request.

Mounting	No. of Outlets	Without Circuit-Closing Device		With Circuit-Closing Device	
		No.	Each	No.	Each
Vertical	2	65X907	\$1.95	65X913	\$2.37
Horizontal	2	65X910	2.08	65X916	2.44
Vertical	2	67X971	1.95	67X977	2.37
Horizontal	2	67X974	2.08	67X980	2.60
Vertical	3	65X919	2.50	65X925	2.92
Horizontal	3	65X922	2.63	65X928	3.15

**Types V-2-S and V-2-A—2-Element—3-Wire**  
60 Cycles



Type V-2-S

**Types V-2-S and V-2-A** are primarily for use on network systems of two lines and the neutral of a 4-wire Y, 3-phase circuit. The phase displacement of this circuit requires a 2-element watthour meter.

The meter is also available for other 3-wire polyphase circuits, and for 3-wire, single-phase circuits where the voltages are so

unbalanced that a 3-wire, single-element meter will not give the required accuracy.

The Type V-2-S is for socket connection and the Type V-2-A for bottom connection. Approximate dimensions for the S type, 7x8½ inches; for the A type, 7½x6¾x8½ inches.

†120 Volts				†240 Volts			
Amp.	Type V-2-S No.	Type V-2-A No.	Each	Amp.	Type V-2-S No.	Type V-2-A No.	Each
5	85X743	85X723	\$41.00	5	85X748	85X728	\$44.00
15	85X745	85X725	41.00	15	85X750	85X730	44.00
20	85X727	85X727	56.00	20	85X732	85X732	59.00

Catalog numbers are for ball-type bearings. Jewel-pivot bearings are available at no increase in cost.

## Sockets for Type V-2-S Meters

All sockets listed have 1-inch conduit outlets. Approximate shipping weight, 4 pounds.

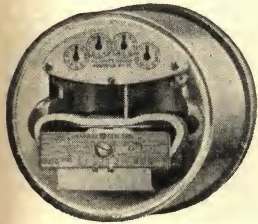
Sockets with ¾-inch and 1¼-inch outlets are also available. Prices and information on request.

Mounting	No. of Outlets	Without Circuit-Closing Device		With Circuit-Closing Device	
		No.	Each	No.	Each
Vertical	2	76X36	\$2.10	76X42	\$2.51
Horizontal	2	76X37	2.23	76X43	2.72
Vertical	3	76X40	2.63	76X46	3.03
Horizontal	3	76X41	2.75	76X47	3.25

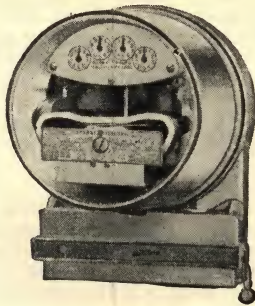
\*Information and prices for d.c. meters on request. †The potential coils are wound and rated for the line-to-neutral voltage, and these are the values listed. For example, order meters rated 120 volts for use on 120-240-volt, 3-wire circuits.



## G-E Watthour Meters

Types V-3-S and V-3-A—Polyphase—2 Element—3-Wire  
60 Cycles

Type V-3-S



Type V-3-A

**Type V-3-A** is for wall mounting, bottom-connected, and can be used by itself or in conjunction with the usual polyphase meter trims. The terminal arrangements and block dimensions are standard for polyphase meters. A maximum of 15 terminals can be provided, eight terminals for current connections and seven terminals for potential connections, contact-device connections, and test links. Approximate dimensions,  $9\frac{1}{2} \times 6\frac{3}{4} \times 6\frac{3}{8}$  inches. Approximate shipping weight, 12 pounds.

**Type V-3-S** is for socket mounting. Terminal blades up to a maximum of eight provide for connections to almost any standard circuit. This meter requires a socket entirely different from that of the single-element meter on the 2-element Type V-2-S meter. Sockets have up to eight terminals. Approximate dimensions, including socket,  $13\frac{3}{4} \times 7\frac{1}{2} \times 11$  inches. Approximate shipping weight, 10 pounds.

## 120 Volts

Type V-3-S			Type V-3-A			240 Volts			Type V-3-A		
Amp.	No.	Each	No.	Each		No.	Each		No.	Each	
5	97X121	\$44.00	85X883	\$48.00		97X124	\$47.00		85X888	\$51.00	
15	97X122	44.00	85X885	48.00		97X125	47.00		85X890	51.00	
50	97X123	57.00	85X887	61.00		97X126	60.00		85X892	64.00	

## For Use With Instrument Transformers

2.5	85X998	\$46.00	85X903	\$50.00	85X999	\$49.00	85X904	\$53.00
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## 480 Volts

5	97X127	\$56.00	85X893	\$60.00	97X130	\$56.00	85X898	\$60.00
15	97X128	56.00	85X895	60.00	97X131	56.00	85X900	60.00
50	97X129	69.00	85X897	73.00	97X132	69.00	85X902	73.00

## For Use With Instrument Transformers

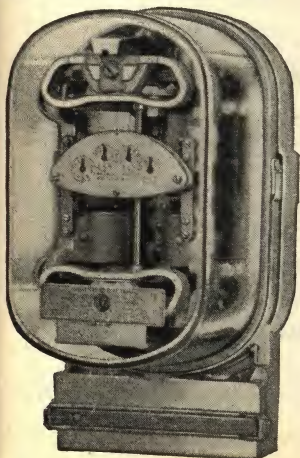
2.5	86X1	\$58.00	85X905	\$62.00	86X2	\$58.00	85X906	\$62.00
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Catalog numbers are for ball-type bearings. Jewel-pivot bearings are available at no increase in cost.

## Sockets for Type V-3-S Meters

Approximate shipping weight, 15 pounds.

Type Meter	Circuit-Closing Device	Conduit Outlet Inches	No.	Each
Self-Contained	No	1 $\frac{1}{4}$	94X994	\$9.18
	No	2	94X995	9.55
Transformer-Rated and Self-Contained	Yes	1 $\frac{1}{4}$	83X788	9.76
	Yes	2	83X789	10.14

Type V-5-S and V-5-A—Polyphase  
2-Element—4-Wire Y  
60 Cycles

This meter has two potential circuits and three current circuits and is intended for use on 4-wire Y, 3-phase circuits provided the voltage unbalance is less than 1 per cent and the power factor reasonably high.

In external appearance they are like the Types V-3-A and V-3-S meters.

Approximate shipping weight: Type V-5-A, 12 pounds; Type V-5-S, 10 pounds.

Type V-5-S				Type V-5-A			
Volts	Amp.	No.	Each	No.	Each		
120Y	5	86X4	\$58.00	85X928	\$62.00		
120Y	15	86X6	58.00	85X930	62.00		
120Y	50	86X8	66.00	85X932	70.00		

## For Use with Instrument Transformers

120Y	2.5	86X24	\$60.00	85X948	\$64.00
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Catalog numbers are for ball-type bearings. Jewel-pivot bearings are available at no increase in cost.

## Sockets for Type V-5-S Meters

Approximate shipping weight, 15 pounds.

Type Meter	Circuit-Closing Device	Conduit Outlet Inches	No.	Each
Self-Contained	No	1 $\frac{1}{4}$	83X784	\$9.18
	No	2	83X785	9.55
	Yes	1 $\frac{1}{4}$	94X996	9.76
	Yes	2	94X997	10.14
Transformer-Rated and Self-Contained	Yes	1 $\frac{1}{4}$	83X786	9.76
	Yes	2	83X787	10.14

Types V-6-S and V-6-A—Polyphase  
2-Element—4-Wire Δ  
60 Cycles

This meter has two 240-volt potential circuits and three current circuits and is intended for use on 4-wire Δ, 3-phase circuits provided the two 120-volt voltages of the lighting circuit are reasonably balanced. The external appearance of the meters is the same as Types V-3-A and V-3-S meters.

Approximate shipping weight: Type V-6-A, 12 pounds; Type V-6-S, 10 pounds.

Type V-6-S				Type V-6-A			
Volts	Amp.	No.	Each	No.	Each		
240	5	86X29	\$54.00	85X958	\$58.00		
240	15	86X31	54.00	85X960	58.00		
240	50	86X33	64.00	85X962	68.00		

## For Use with Instrument Transformers

240	2.5	.....	.....	97X134	\$60.00
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Catalog numbers are for ball-type bearings. Jewel-pivot bearings are available at no increase in cost.

## Sockets for Type V-6-S Meters

Type Meter	Circuit-Closing Device	Conduit Outlet Inches	No.	Each	Net f.o.b. West Lynn, Each
Self-Contained	No	1 $\frac{1}{4}$	83X784	\$9.18	
	No	2	83X785	9.55	
	Yes	1 $\frac{1}{4}$	94X996	9.76	
	Yes	2	94X997	10.14	

Types V-4-A, V-7-A, V-9-A, and V-10-A—Polyphase—3-Element  
60 Cycles

**Type V-4-A** meter is intended for 4-wire Y, 3-phase circuits. It has three potential and three current circuits. Approximate shipping weight, 22 pounds.

**Type V-7-A** meter is for 4-wire Δ, 3-phase circuits. It has one 240-volt (200-volt) element and two 120-volt elements. Approximate shipping weight, 22 pounds.

**Types V-9-A and V-10-A** meters are used for totalizing one 3-wire, 2 or 3-phase power circuit and one single-phase lighting circuit, either 2 or 3 wire. Information and prices upon request.

Type V-4-A				Type V-7-A			
Volts	Amp.	No.	Each	Volts	Amp.	No.	Each
120Y	5	86X421	\$80.00	240	5	86X426	\$90.00
120Y	15	86X422	80.00	240	15	86X427	90.00
120Y	50	86X423	96.00	240	50	86X428	107.00

## For Use with Instrument Transformers

120Y	2.5	86X425	\$85.00	240	2.5	86X429	\$95.00
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Catalog numbers are for ball-type bearings. Jewel-pivot bearings are available at no increase in cost.



G-E Switchboard Watthour Meters

For Use with Instrument Transformers



Type DS-20

This line of back-connected single-phase and polyphase meters combines the improved elements of the new front-connected meters with the narrow 5½-inch universal-type switchboard case.

These meters are listed only for use with instrument transformers, i.e., in 2.5-ampere ratings. However, they are also available in 5 or 10-ampere self-contained ratings. Self-contained sizes have liberal overload rating. These meters may, therefore, be used with good accuracy on loads up to 300% of normal load and with ample margin of safety on loads considerably in excess of this.

Test links are not provided for these meters. Separate test blocks are available for this purpose.

Type IS-8

Single-Element—2-Wire—Single Phase

For 3-wire service, the Type DS-19 meter is recommended; 3-wire, single-phase circuits can, however, be metered with the 2-wire meter, No. 21X925, when connected with double-primary, single-secondary, 3-wire type of current transformers.

Approximate dimensions, 6x5½x7 inches.

Approximate shipping weight, 20 pounds.

Volts.....	120	*120	*240
Amperes.....	2.5	2.5	2.5
No.....	97X333	97X334	97X335
Each.....	\$40.00	40.00	42.00

Type DS-19

2-Element—3-Wire, 1, 2, or 3-Phase and 4-Wire, 2-Phase

Approximate dimensions, 12x5½x7 inches.

Approximate shipping weight, 25 pounds.

Volts.....	115	*120	*240	*480	*600
Amperes.....	2.5	2.5	2.5	2.5	2.5
No.....	97X339	97X340	97X341	97X342	97X343
Each.....	\$72.00	72.00	79.00	89.00	89.00

Type DS-20

3-Element—4-Wire Y—3-Phase

Approximate dimensions, 16x5½x7 inches.

Approximate shipping weight, 35 pounds.

Volts.....	120	*120
Amperes.....	2.5	2.5
No.....	97X346	97X347
Each.....	\$108.00	108.00

\*No potential transformers.

Catalog numbers are for ball-type bearings. Jewel-pivot bearings are available at no increase in cost.

Catalog numbers and prices do not include instrument transformers. Specify ratios of transformers with which meter is to be used. It is standard practice (for meters of modern construction) to use 2.5-ampere meters with current transformers having 5-ampere secondary rating, since this results in the best overall accuracy and performance.

G-E Type IB-10 Portable Standards

This new G-E standard combines, for the first time, the capacity essential for the testing of both high- and low-current-rated meters with the light weight and small size of the best low-capacity standards.

Wide operating range and excellent testing flexibility have been obtained by the use of four current coils—1, 5, 12.5, and 50-ampere. All coils will carry 200-per cent current continuously. Thus, service meters of all ratings up to 100 amperes can be tested.

The Type IB-10 standard represents advancement in all details. It has a completely new electromagnet with low inherent errors and excellent load, voltage, and temperature characteristics. Excellent balance (accuracy) between current circuits is inherent in the design.

The IB-10 is the first standard to use the G-E anti-parallax arrangement of dial and pointers. This promotes speed and accuracy because the reading is always the same regardless of the angle from which the scale is viewed. The large sweep hand, coupled to the disc shaft, makes one revolution for each one of the disc. The antiparallax scale is divided into 100 clearly marked divisions in order that readings even closer than one one-hundredth of a revolution can easily be taken. Small dials within the large one make it possible to take readings up to 100 revolutions of the disc.

No.....	99X943
Each.....	\$240.00
Volts.....	120-240
Amperes.....	1, 5, 12.5, 50
Height.....inches	8⅞
Width.....inches	6⅞
Depth.....inches	6½
Approximate Net Weight.....pounds	11¾
Approximate Shipping Weight.....pounds	23

Multiplier Boxes

Multiplier boxes are used to increase the voltage range. They are calibrated and furnished with the standard.

For single rating, 480 volts, add \$60.

For double rating, 480 and 600 volts, add \$80.

G-E Type MC Autotransformers

These autotransformers can be used on circuits where the voltage may be 10 per cent above or below the rated voltage of the autotransformer. They are intended for use with poly-phase meters in var metering.

When ordering autotransformers for voltages outside these limits, the normal operating voltage should be specified.

Type MC-1

3-Wire, 3-Phase

No.	Each	VOLTAGE		Frequency Cycles
		Primary	Secondary	
12X258	\$21.00	120	120	50-60
12X261	22.00	240	240	50-60

4-Wire, 3-Phase

99X219	\$22.00	240	240	50-60
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Type MC-2

4-Wire Y, 3-Phase

12X264	\$25.00	120	120	50-60
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Other ratings and types are available. Information and prices upon request.



**G-E Jewels for Watthour Meters****Jewel-Pivot Bearings—Mounted in Screws****No. 39924—Sapphire**

For d.c. meters, Types C, C-5, C-6, C-7, C-9 and C-15 single-phase, house and switchboard meters, Types I, I-8, IS-2 and IS-3 and polyphase meters Types D-3, D-4, D-9, DS-2, DS-3, DS-4, DS-5 and DS-9.

No. 39924, In Lots of 10.....per box \$6.00

**No. 68X1—Sapphire**

Oil-tight jewel screw with removable jewel plug. For single-phase meters, Types I-14, I-15, I-16, I-18, I-20, I-30, IS-4, IS-5, IS-6, IS-7, IS-8, IS-9, IS-10 and IS-11; for polyphase meters, Types D-6, D-7, D-8, D-14, D-15, DS-6, DS-7, DS-11, DS-12, DS-19, DS-20, DS-21, DS-23, DS-34, DS-35, DS-38, DS-39, DS-40, DS-41, and V-2 to V-10 inclusive; and for test meters, Types IB-5, IB-6, IB-7, IB-8 and IB-9.

No. 68X1, In Lots of 10.....per box \$4.00

No. 68X2, Jewel Plug with Jewel for No. 68X1 Jewel Screw, in Lots of 10.....per box 3.00

**No. 295309 G-E Pivots**

For all types of meters.

Packed in boxes of 25.

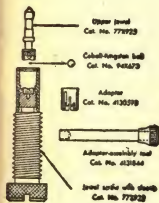
No. 295309.....per box \$3.80

**G-E Meter Jewel Oil**

No. 4126220, 1-Dram Bottle Cemented in Brass

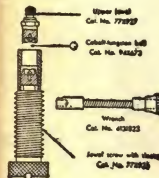
Container.....each \$6.60

No. 66X727, 1-Ounce Bottle.....each 1.80

**G-E Ball Bearings****Enclosed Type**

Enclosed type ball bearings are recommended for meters: Types I-16, I-20, I-30, IS-8, IS-9, and V-2 to V-10 inclusive; also these meters with the letter M or W added to the type designation.

No.	Description	
94X672	Jewel-Screw Assembly with Ball, lots of 10	\$8.60
77X922	Lower Jewel Screw with Sleeve...lots of 10	4.00
77X925	Upper Jewel.....lots of 10	4.00
94X673	Lot of 25 Balls in Vial.....lots of 10 vials	15.00
4130598	Adapter for Use with Meters Originally Furnished with Pivot Type Bearing	
	.....per 100	6.00
4131844	Adapter Assembly Tool.....each	.10

**Open Type**

Open type ball bearings are recommended for meters: Types I-14, I-15, IS-4, IS-5, I-18, D-6, D-7, D-14, D-15, DS-6, DS-7, DS-19, DS-20, DS-21, DS-23, DS-34, and DS-35; also these meters with the letter M or W added to the type designation.

No.	Description	
77X926	Lower Jewel Screw with Sleeve...lots of 10	\$4.00
77X927	Upper Jewel.....lots of 10	4.00
94X673	Lot of 25 Balls in Vial.....lots of 10 vials	15.00
413823	Wrench for Use on Upper Jewel.....each	.30

**G-E Watthour Demand Meters****60 Cycles****Types IM-30-S and IM-30-A****With Type M-20 Register**

These meters can be used on circuits where the voltage may be 10 per cent above or below the rated voltage of the meter.

When ordering meters for voltages outside these limits, the normal operating voltage should be specified.

Approximate shipping weight, 15 pounds.

**Type IM-30-S****120 Volts, 2-Wire**

Amperes	Full- Scale Kw.	15-Min. Interval No.	30-Min. Interval No.	Each
5	1.8	85X591	85X606	\$50.95
5	2.9	85X592	85X607	50.95
15	4.5	85X593	85X608	50.95
15	7.2	85X594	85X609	50.95
50	18.0	85X595	85X610	58.30

**240 Volts, 3-Wire, 4-Terminal**

				Each
5	3.6	85X601	85X616	\$52.30
5	5.7	85X602	85X617	52.30
15	9.0	85X603	85X618	52.30
15	14.0	85X604	85X619	52.30
50	3.6X10	85X605	85X620	61.05
50	36.0	97X401	97X403	61.05

**For Use with Instrument Transformers**

Circuit	Volts	Amperes	Full- Scale Kw.	15-Min. Interval No.	30-Min. Interval No.	Each
2-Wire	120	2.5	0.9	97X153	97X156	\$54.80
2-Wire	*120	2.5	0.9	97X154	97X157	54.80
2-Wire	*240	2.5	1.8	97X155	97X158	56.80

**Type IM-30-A****120 Volts, 2-Wire**

Amperes	Full- Scale Kw.	15-Min. Interval No.	30-Min. Interval No.	Each
5	1.8	85X527	85X547	\$50.95
5	2.9	85X528	85X548	50.95
15	4.5	85X529	85X549	50.95
15	7.2	85X530	85X550	50.95
50	18.0	85X531	85X551	58.30

**240 Volts, 3-Wire, 4-Terminal**

				Each
5	3.6	85X537	85X557	\$52.30
5	5.7	85X538	85X558	52.30
15	9.0	85X539	85X559	52.30
15	14.0	85X540	85X560	52.30
50	3.6X10	85X541	85X561	61.05
50	36.0	97X395	97X398	61.05

**For Use with Instrument Transformers**

Circuit	Volts	Amperes	Full- Scale Kw.	15-Min. Interval No.	30-Min. Interval No.	Each
2-Wire	120	2.5	0.9	85X579	85X583	\$54.80
2-Wire	*120	2.5	0.9	85X580	85X584	54.80
2-Wire	*240	2.5	1.8	85X581	85X585	56.80
3-Wire	*240	2.5	1.8	85X582	85X586	56.80

\*No potential transformers.

The 50-cycle rating is available at no increase in cost.

Catalog numbers are for ball-type bearings. Jewel-pivot bearings are available at no increase in cost.

Continued



## G-E Watthour Demand Meters

60 Cycles

Continued

## Types VM-2-S and VM-2-A

With Type M-20 Register

These meters are for use on standard 3-wire circuits. They are particularly intended for use on circuits consisting of two "line" wires and the "neutral" obtained from a 4-wire Y, 3-phase circuit. They are also suitable for use on a 3-wire, single-phase circuit where the voltage unbalance makes a 2-element meter desirable. The meters can also be used as 3-wire, 2 or 3-phase circuits.

The Type VM-2 meters are not furnished for use with instrument transformers. If such meters are desired, use Type VM-3.

These meters can be used on circuits where the voltage may be 10 per cent above or below the rated voltage of the meter. When ordering meters for voltages outside these limits, the normal operating voltage should be specified.

Approximate shipping weight, 16 pounds.

## Type VM-2-S

Volts	Amperes	Full-Scale Kw.	15-Min. Interval No.	30-Min. Interval No.	Each
120	5	3.6	85X793	85X803	\$74.80
120	15	10.5	85X795	85X805	74.80
120	50	3.6X10	85X797	85X807	89.80
120	50	36.0	97X446	97X449	90.80
240	5	7.2	85X798	85X808	77.80
240	15	2.1X10	85X800	85X810	77.80
240	15	21.0	97X447	97X450	77.80
240	50	7.2X10	85X802	85X812	92.80
240	50	72.0	97X448	97X451	93.80

## Type VM-2-A

120	5	3.6	85X763	85X773	\$74.80
120	15	10.5	85X765	85X775	74.80
120	50	3.6X10	85X767	85X777	89.80
120	50	36.0	97X440	97X443	90.80
240	5	7.2	85X768	85X778	77.80
240	15	2.1X10	85X770	85X780	77.80
240	15	21.0	97X441	97X444	77.80
240	50	7.2X10	85X772	85X782	92.80
240	50	72.0	97X442	97X445	93.80

## Types VM-3-S and VM-3-A

With Type M-20 Register

The Type VM-3 is for 3-wire, 2 or 3-phase, or 4-wire, 2-phase circuits. It can be used on circuits where the voltage may be 10 per cent above or below the rated voltage of the meter. When ordering meters for voltages outside these limits, the normal operating voltage should be specified.

Approximate shipping weight, 16 pounds.

## Type VM-3-S

Volts	Amperes	Full-Scale Kw.	15-Min. Interval No.	30-Min. Interval No.	Each
240	5	5.1	97X204	97X210	\$80.80
240	15	1.5X10	97X205	97X211	80.80
240	15	15.0	97X561	97X564	81.80
240	50	5.1X10	97X206	97X212	93.80
240	50	51.0	97X562	97X565	94.80

For Use with Instrument Transformers

*240	2.5	2.50	86X189	86X192	\$82.80
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## Type VM-3-A

240	5	5.1	86X54	86X64	\$84.80
240	15	1.5X10	86X56	86X66	84.80
240	15	15.0	86X543	97X546	85.80
240	50	5.1X10	86X58	86X68	97.80
240	50	51.0	97X544	97X547	98.80

For Use with Instrument Transformers

*240	2.5	2.50	86X111	86X114	\$86.80
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\*No potential transformers.

The 50-cycle rating is available at no increase in cost. Catalog numbers are for ball-type bearings. Jewel-pivot bearings are available at no increase in cost.

Continued

## G-E Watthour Demand Meters

60 Cycles

Concluded

## Type VM-4-A

With Type M-20 Register

These meters are intended for the circuit obtained from a bank of three power transformers connected in Y and with the neutral brought out.

These meters can be used on circuits where the voltage may be 10 per cent above or below the rated voltage of the meter. When ordering meters for voltages outside these limits, the normal operating voltage should be specified.

Approximate shipping weight, 30 pounds.

Volts	Amperes	Full-Scale Kw.	15-Min. Interval No.	30-Min. Interval No.	Each
120Y	5	4.5	86X449	86X452	\$113.80
120Y	15	13.5	86X450	86X453	113.80
120Y	50	4.5X10	86X451	86X454	129.80
120Y	50	45.0	97X602	97X603	130.80

For Use with Instrument Transformers

120Y	2.5	2.2	86X458	86X459	\$118.80
*120Y	2.5	2.2	86X461	86X462	118.80

## Types VM-6-S and VM-6-A

With Type M-20 Register

These meters are intended for the circuit obtained from a bank of two or three power transformers connected in  $\Delta$ , with the center tap of one transformer brought out, provided the 120-volt voltages of the lighting circuit (between the center tap and the outer wires) are balanced within limits that would permit the use of a 3-wire, single-phase watthour meter on the lighting circuit.

The meters have two 240-volt potential coils and three current circuits, with the 3-wire current coil located on the left-hand element.

The meters can be used on circuits where the voltage may be 10 per cent above or below the rated voltage of the meter. When ordering meters for voltages outside these limits, the normal operating voltage should be specified.

Approximate shipping weight, 18 pounds.

## Type VM-6-S

Volts	Amperes	Full-Scale Kw.	15-Min. Interval No.	30-Min. Interval No.	Each
240	5	5.1	86X196	86X201	\$87.80
240	15	1.5X10	86X198	86X203	87.80
240	15	15.0	97X568	97X570	88.80
240	50	5.1X10	86X200	86X205	97.80
240	50	51.0	97X569	97X571	98.80

## Type VM-6-A

240	5	5.1	86X118	86X124	\$91.80
240	15	1.5X10	86X120	86X126	91.80
240	15	15.0	97X556	97X558	92.80
240	50	5.1X10	86X122	86X128	101.80
240	50	51.0	97X557	97X559	102.80

For Use with Instrument Transformers

240	2.5	2.5	97X213	97X214	\$93.80
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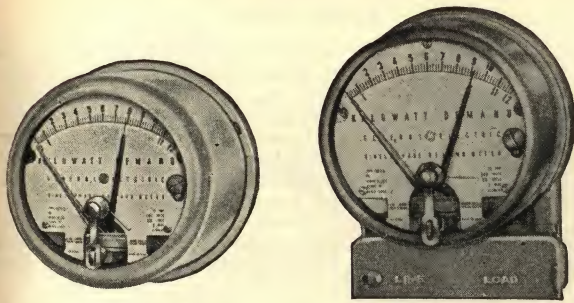
\*No potential transformers.

The 50-cycle rating is available at no increase in cost.

Catalog numbers are for ball-type bearings. Jewel-pivot bearings are available at no increase in cost.



## G-E Type HI-1 Thermal Watt-Demand Meters



Type HI-1-S

Type HI-1-A

The Type HI-1 is a separate meter for the indicated measurement of maximum demand. It is admirably suited to use on small loads because of the low maintenance and cost. Unless it is necessary to have recorded measurements, as in the graphic or printing types, it can be used for loads of any value.

Approximate shipping weight, 13 pounds.

### Types HI-1-S and HI-1-A

120 Volts, 2-Wire					
Amperes	Full-Scale Kw.	Type HI-1-S No.	Type HI-1-A No.	Each	
15	6.0	411X59	411X43	\$38.00	
50	12.0	411X60	411X44	41.15	
240 Volts, 2-Wire					
15	12.0	411X62	411X46	\$38.00	
50	24.0	411X63	411X47	41.15	
240 Volts, 3-Wire, 4-Terminal					
15	12.0	411X65	411X49	\$38.00	
50	24.0	411X66	411X50	41.15	
240 Volts, 3-Wire, 6-Terminal					
15	12.0	.....	411X52	\$38.00	
50	24.0	.....	411X53	41.15	

### For Use with Instrument Transformers

Circuit	METER RATING		Full-Scale Kw.	Type HI-1-S No.	Type KI-1-A No.	Each
	Volts	Amps.				
2-Wire	120	2.5	1	416X92	416X87	\$38.00
2-Wire	120	5	1	416X93	416X88	38.00
2-Wire	240	2.5	2	411X69	411X56	38.00
2-Wire	240	5	2	416X94	416X89	38.00
3-Wire	240	2.5	2	.....	411X58	38.00
3-Wire	240	5	2	.....	416X90	38.00

## G-E Portable Transformers

For use with meters, instruments, and similar devices. Used in laboratory and general testing work.



Type JP-1

### Current Transformers

2500 Volts—25-125 Cycles

Current transformers include a wide range of primary currents. For example, the Type P-3 is a multi-range transformer having either three or six primary ratings. Changes in ratio are made by changing the link connections on the top of the case. The JP-2 is of the through type and has much higher ratings. Type JP-1 is especially suited for industrial work. The accuracy of these transformers is sufficiently

high to obviate the need for correction during most commercial tests. However, certificates of phase-angle and ratio characteristics can be furnished.

### Type P-3

No.	Each	Primary Cap., Amp.	Ratio	
248742	\$118.00	5/10/20	1/2/4	:1
248743	118.00	15/30/60	3/6/12	:1
248744	118.00	25/50/100	5/10/20	:1
248745	118.00	50/100/200	10/20/40	:1
248746	140.00	7.5/10/15/20/30/40	1.5/2/3/4/6/8	:1
295534	140.00	10/15/20/30/40/60	2/3/4/6/8/12	:1
248747	140.00	15/20/30/40/60/80	3/4/6/8/12/16	:1
248748	140.00	20/25/40/50/80/100	4/5/8/10/16/20	:1
259628	140.00	30/37.5/60/75/120/150	6/7.5/12/15/24/30	:1
248749	140.00	30/40/60/80/120/160	6/8/12/16/24/32	:1
295535	140.00	37.5/50/75/100/150/200	7.5/10/15/20/30/40	:1
248750	140.00	40/50/80/100/160/200	8/10/16/20/32/40	:1

### Type JP-1

88X593	\$67.00	10/20/50/100/600/800	2/4/10/20/120/160	:1
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### Type JP-2

89X867	\$130.00	1200	240	:1
89X868	175.00	1200/1500/2000/2500	240/300/400/500	:1

### Potential Transformers

Under ordinary conditions of load and power-factor, the accuracy of these types will not vary more than 1 per cent from rated ratio.

When used with a test certificate, the ratio can be corrected to within one tenth of 1 per cent, and the phase angle can be corrected to within three minutes.

Type E-6 is rated 25 volt-amperes, and is compensated for 12.5 volt-amperes.

Type JE-9 is rated 200 volt-amperes, and is compensated for 50 volt-amperes.



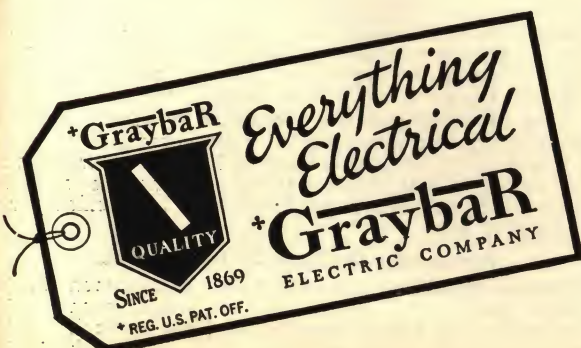
Type E-6

### Type E-6

No.	Each	Volt-Amp.	Cycles	VOLTAGE		Ratio
				Primary	Secondary	
48X482	\$90.00	25	25	240/480	120	2/4:1
48X483	85.00	25	25	480	120	4:1
48X484	90.00	25	25	600	120	5:1
48X485	95.00	25	25	2400	120	20:1
48X486	65.00	25	50/60	240/480	120	2/4:1
48X487	60.00	25	50/60	480	120	4:1
48X488	65.00	25	50/60	600	120	5:1
48X489	70.00	25	50/60	2400	120	20:1

### Type JE-9

71X225	\$50.00	200	60	240	120	2:1
71X227	50.00	200	60	480	120	4:1
71X228	50.00	200	60	600	120	5:1
71X229	50.00	200	60	2400	120	20:1

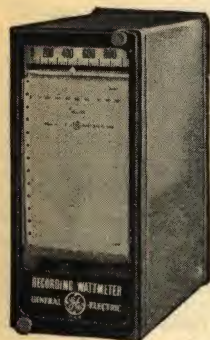
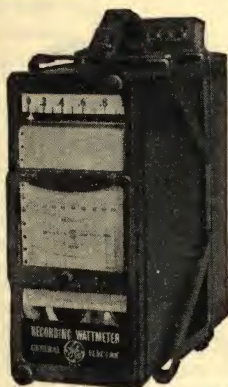




## G-E Strip-Chart Recording Instruments

## Type CD—Switchboard and Portable Types

60 Cycles—For A.C. and D.C.

Switchboard  
Back-Connected

Portable

Type CD recording instruments are available for switchboards, surface or semiflush mounting, or in portable form. There is a complete line for a.c. or d.c. circuits, including ammeters, voltmeters, wattmeters, frequency meters, and power-factor meters. Standard chart speeds are 3 inches per hour for switchboard instruments. Portable instruments have a gear shift that permits chart speeds of either 3 inches per hour or 3 inches per minute. The driving mechanism may be either an eight-day, spring-operated clock, or a telechron motor, as specified.

Type CD recording instruments are available with provision for inkless recording at a slight increase in price.

This listing covers only the portable instruments with telechron motor drive. Switchboard instruments have somewhat lower prices; dimensions: instrument, 12x5½x10 inches and chart, 4⅜ inches wide by 60 feet long. Instruments with spring-driven, hand or motor-wound timing mechanisms have somewhat higher prices.

## Type CD-13—For A.C.

Potential resistances self-contained.

Instrument is calibrated for 25 to 60 cycles, a.c.

Voltmeters will read correctly on d.c. circuits but ammeters will read approximately 3 per cent high if used on d.c. circuits.

Approximate shipping weight, 60 pounds.

## Voltmeters

Double-Voltage Rated.	Volts	0-150 or 0-300	0-300 or 0-750
Each.....		\$273.00	283.00

## Ammeters

Amperes	Each	Amperes	Each	Amperes	Each
1	\$233.00	10	\$238.00	2.5/5	\$248.00
2	233.00	15	238.00	5/10	248.00
5	233.00	20	238.00	10/20	248.00

## Type CD-11—For D.C.

Potential resistances self-contained.

Millivoltmeters are used as ammeters with any standard switchboard or portable shunt of 50-millivolt drop. Form 18 shunts are recommended. One set of shunt leads, 5 feet long, is furnished with each millivoltmeter.

Approximate shipping weight, 65 pounds.

## Voltmeters

Double-Voltage Rated.	Volts	0-150 or 0-300	0-300 or 0-750
Each.....		\$310.00	315.00

## Millivoltmeter Used as Ammeter

Millivolts	Each	50
Each.....		\$290.00

Extra length shunt leads: 10-foot, \$12. extra per set; 15-foot, \$18. per set; and 20-foot, \$22. per set.

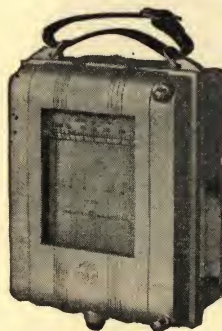
## Form 18 Shunts

Amperes	Each	Amperes	Each	Amperes	Each
60	\$7.00	150	\$7.00	400	\$10.00
75	7.00	200	7.00	500	11.75
80	7.00	250	7.00	600	11.75
100	7.00	300	8.25	800	15.00

## G-E Strip-Chart Recording Instruments

## Type CF—Inkless Portable

For A.C. and D.C.



Type CF inkless recording instruments are designed to provide recording voltmeters, ammeters, milliammeters, microammeters, wattmeters, and tachometers for applications where reliability and maximum convenience to the user are important.

Recommended for either indoor or outdoor service, the instrument is portable but may be wall or pole mounted.

The inkless recording feature (with no ink to dry up, freeze, or spill) and a chart speed of 1 inch per hour make these instruments

capable of continuous operation for 30 days without attention. Hence, they are ideal for installations where frequent servicing is impractical.

Size, 9¼x8½x6 inches. Chart speed, 4 inches wide by 65 feet long. Chart size, 3 inches per hour standard; 1-inch and 2-inch per hour available; 1-inch per day can be supplied at \$7.00 additional.

## Type CF-1, A.C. Voltmeters

60 Cycles—Accuracy—1½ Per Cent within Normal Range

Volts.....	0-140/280
Each.....	\$110.00

Telechron motor circuits internally connected to element terminals. Instruments can be supplied with separate motor terminals, \$5.00 extra.

## A.C. Ammeters

25-125 Cycles—Accuracy—2 Per Cent of Full Scale

Amperes.....	0-5/10
Each.....	\$110.00

Ammeter has 115-230 or 230-460-volt telechron motor circuit. Connections to separate terminals on terminal block. Motor ratings changed by link arrangement on terminal block.

## Type CF-2 for D.C.

Previously offered only for a.c. applications, the G-E Type CF line has been extended to include d.c. instruments in the usual ratings of voltmeters, ammeters, milliammeters, and microammeters. This means that it is now economical to apply recording instruments to many applications where previously the expense of suitable equipment could not be justified.

All d.c. instruments listed are accurate to within 2 per cent of full-scale value.

## Type CF-2, D.C. Voltmeters

Resistance—Approximately 233 Ohms per Volt

Volts	Each	Volts	Each	Volts	Each
0-3	\$160.00	0-150	\$165.00	0-750	\$180.00
0-15	160.00	0-300	170.00	0-150/300	175.00
0-50	160.00	0-600	175.00		

## Type CF-2, D.C. Ammeters

Amperes	Each	Approximate Resistance Ohms	Amperes	Each	Approximate Resistance Ohms
0-1	\$160.00	0.05	0-7.5	\$160.00	0.007
0-1.5	160.00	.03	0-15	160.00	.003
0-3	160.00	.017	0-30	160.00	.0017

Type CF-2 instruments are insulated for and designed for use in circuits not exceeding 750 volts to ground.

Listed instruments have 60-cycle, 115-230-volt motor circuit brought out to separate terminals. The 25 or 50-cycle motors or 230-460-volt motor circuit may be specified at no addition to price.

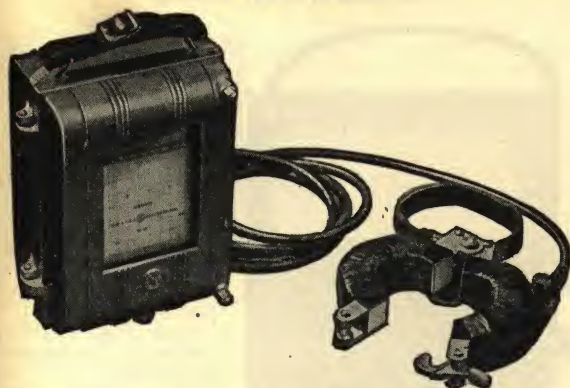
## Accessories for Type CF Instruments

Ribbon on Spool.....	each	\$1.00
Empty Spool.....	each	.30
Rate-Gear Unit, 1, 2, or 3 Inches per Hour.....	each	3.00
Rate-Gear Unit, 1 Inch per Day.....	each	10.00
Record Rolls.....	each	1.10
Lamps.....	each	.15



**G-E Current-Measuring Sets**

For Measuring Amperes Only with Recording  
Ammeter—For A.C.



This current-measuring set is very convenient for measuring the current in the leads to motors and transformers and in feeder circuits, because it permits the measurement to be made without interrupting service.

Set includes a Type CF-1 recording ammeter, test leads, and a Type G-4 split-core current transformer.

When in use, the transformer is clamped around the cable or lead in which the current is to be measured.

Length of leads, 10 feet.

Approximate weight, 22 pounds.

Full-Scale Amperes	Each	Frequency Cycles	Full-Scale Amperes	Each	Frequency Cycles
50/200	\$186.00	60	250/1000	\$200.00	60
100/200	186.00	60	500/1000	200.00	60
125/500	193.00	60	100/200	186.00	50
250/500	193.00	60	250/500	191.00	50
150/600	193.00	60	300/600	191.00	50
300/600	193.00	60	500/1000	200.00	50

Add \$4.00 for 50-foot leads.

**G-E Type AK-1 Hook-On Volt-Ammeters**

For A.C.



This hook-on volt-ammeter is a versatile portable instrument for measuring a.c. and voltage quickly and accurately. It is safe, simple, and easy to use for making measurements on the job. A.c. can be read instantaneously on both insulated and non-insulated conductors by simply hooking the instrument around the line; no necessity for separate transformers or additional equipment of any kind.

The instrument also measures a.c. voltages. Two voltage ranges (0-150/600 volts) are available without the use of auxiliary equipment. It is only necessary to connect leads to the two convenient terminals on the instrument, then click the selector switch to the desired voltage position on the scale. Voltage leads, 6 feet long, are included with each instrument. Approximate dimensions, 13 $\frac{1}{4}$ x3 $\frac{3}{4}$ x2 $\frac{1}{2}$  inches. Approximate weight: net, 3 $\frac{1}{2}$  pounds; shipping, 7 $\frac{1}{2}$  pounds.

No.	Each	Amperes	Volts
99X33	\$69.75	0-15/60/150/600	0-150/600
No. 99X38 Leather Case.....	each		\$10.00
No. 99X67 Hot-Line Extension Pole, 4 Ft. Long.....	each		8.50
No. 99X68 Hot-Line Extension Pole, 6 Ft. Long.....	each		10.00

**Weston Portable Instruments**

Model 430 D.C. Instruments

For General Plant Testing



Accurate within  $\frac{1}{2}$  of 1 per cent. Permanent magnet moving coil type. Unshielded from external magnetic fields.

Voltmeters are made with single and triple ranges at a standard sensitivity of 1000 ohms per volt, with 5000 ohms per volt also available at an increase in price.

Ammeters and milliammeters regularly made with single and triple ranges, self-contained up to 50 ampere inclusive. Double ranges available on special order. Microammeters are made only in single range form.

Voltmeters with triple ranges only; sensitivity, 1000 ohms per volt. Available with self-contained ranges of 300 volts and 50 amperes. Prices on application.

Dimensions, 5 $\frac{1}{8}$ x6 $\frac{1}{2}$ x3 $\frac{1}{2}$  inches; scale length, 4 inches.

Approximate weight, 3 $\frac{1}{2}$  pounds.

**Voltmeters****Triple Range**

Ranges	Each	Scale Div.	Ranges	Each	Scale Div.
75/30/7.5	\$50.00	150	300/150/3	\$52.00	150
150/15/3	50.50	150	750/300/150	56.50	150

Above ranges also available with a sensitivity of 5000 ohms per volt at an increase in price. Suitable for electronic work.

**Ammeters****Single Range**

	Each	Scale Div.		Each	Scale Div.
1	\$42.00	100	15	\$42.00	150
5	42.00	100	30	42.00	150

**Triple Range**

	Each	Scale Div.		Each	Scale Div.
5/0.5/0.05	\$52.00	100	30/15/3	\$52.00	150
10/1/0.1	52.00	100	50/5/0.5	52.00	100
15/3/1.5	52.00	150	50/25/10	52.00	100
25/10/2.5	52.00	100	.....	.....	.....

**Milliammeters****Single Range**

Ranges	Each	Approx. Resist. Ohms	Scale Div.	Ranges	Each	Approx. Resist. Ohms	Scale Div.
1	\$39.00	92	100	150	\$39.00	..	150
15	39.00	1.4	150	.....	.....	.....	.....

**Triple Range**

	Each	Approx. Resist. Ohms	Scale Div.		Each	Approx. Resist. Ohms	Scale Div.
3/0.3/0.03	\$65.00	....	150	1500/150/15	\$52.00	..	150
150/15/1.5	49.00	....	150	3000/300/30	52.00	..	150

Milliammeters with ranges above 30 milliamperes are shunted and have a drop of 50 millivolts  $\pm$  5 per cent.

**Microammeters****Single Range**

	Each	Approx. Resist. Ohms	Scale Div.		Each	Approx. Resist. Ohms	Scale Div.
30	\$55.00	3300	150	200	\$45.00	560	100
100	50.00	1650	100	.....	.....	.....	.....

Leather case for single range voltmeter, single or triple range ammeter, milliammeter or microammeter, \$9.00; case for triple range voltmeter, \$9.00.



## Weston Portable Instruments

Model 432 D.C. and Single Phase A.C. Wattmeters  
For General Plant Testing

This wattmeter is of the electro-dynamometer type, accurate within  $\frac{1}{2}$  of 1 per cent. Shielded from external magnetic fields.

Made with double voltage and single and double current ranges, self-contained up to 300 volts and 50 amperes. Potential ranges up to 750 volts are available by using external multipliers, higher ranges require the use of potential transformers. Current ranges can be extended beyond 50 amperes by using a 5-ampere instrument in conjunction with the Model 461 current transformer.

These instruments are accurate on all commercial frequencies up to 133 cycles per second. The phase angle is negligible on such frequencies. They may be used on d.c. and checked in comparison with d.c. standards. The temperature error is less than 1 per cent for 25°C. change in temperature.

As the working error is negligible, they may be left in circuit continuously without appreciable effect on the accuracy.

Power consumption: Potential side, at 115 volts, 1.2 watts; at 115 volts, 25 or 60 cycles, 1.2 volt-amperes. Current side, at 5 amperes, .67 watt; at 5 amperes, 25 cycles, .73 volt-ampere and at 5 amperes, 60 cycles, .98 volt-ampere.

Dimensions:  $6\frac{1}{2} \times 5\frac{1}{4} \times 3\frac{1}{2}$  inches; scale length,  $4\frac{1}{16}$  inches. Weight,  $3\frac{3}{4}$  pounds.

Volts		Each	AMPERES		WATTS		APPROX. RES. OHMS		Scale Div.
Normal	Max.		Normal	Max.	Low Range	High Range	Low Range	High Range	
75/150	100/200	\$67.50	1	1.5	75	150	5500	11000	75
150/300	200/400	69.00	1	1.5	150	300	11000	22000	75
75/150	100/200	67.50	2	3	150	300	5500	11000	75
150/300	200/400	69.00	2	3	300	600	11000	22000	60
75/150	100/200	67.50	5	7.5	375	750	5500	11000	75
150/300	200/400	69.00	5	7.5	*.75	*1.5	11000	22000	75
75/150	100/200	72.50	10	15	*.75	*1.5	5500	11000	75
150/300	200/400	74.00	10	15	*1.5	*3	11000	22000	75
75/150	100/200	72.50	20	30	*1.5	*3	5500	11000	75
150/300	200/400	74.00	20	30	*3	*6	11000	22000	60
75/150	100/200	72.50	50	75	*3.75	*7.5	5500	11000	75
150/300	200/400	74.00	50	75	*7.5	*15	11000	22000	75

\*Kilowatts.

Double current ranges with range changing switch available at an extra charge. Prices upon application.

Leather Case.....each \$9.00

## Y-Boxes for Model 432 Wattmeters

For Use on Balanced 3-Phase 3-Wire Circuits

Normal Voltage of Instrument	Each	Y-Box Multiplying Constant	Normal Line Voltage With Y-Box	Maximum Voltage With Y-Box	Box	
					Type	No.
75	\$20.00	3	150	170	5	1
150	20.00	3	300	340	5	2
150	20.00	4	400	450	5	2
150	20.00	5	500	550	5	3
150	20.00	6	600	650	5	3

## Weston Portable Instruments

Model 433 A.C. Instruments  
For General Plant Testing

Electromagnetic or moving iron type instruments contained in bakelite cases with leather carrying handles. Shielded from external magnetic fields. Accurate within  $\frac{1}{4}$  of 1 per cent.

Instruments can be left in circuit continuously without overheating, therefore, no contact key is used.

Size  $5\frac{1}{16} \times 6\frac{1}{2} \times 3\frac{1}{2}$  inches; scale length,  $4\frac{1}{16}$  inches.

Weight,  $2\frac{1}{2}$  pounds.

## Voltmeters

Self-contained for ranges shown. Higher ranges obtained by using multipliers or Model 311 or 457 potential transformer in conjunction with a 150-volt instrument; for use on frequencies up to 133 cycles per second.

Single Range				Double Range			
Range Volts	Each	Resist. Ohms	Scale Div.	Range Volts	Each	Resist. Ohms	Scale Div.
10	\$36.00	80	100	125	\$36.25	4400	125
15	36.00	168	150	150	36.50	5300	150
30	36.00	425	150	250	37.50	18200	125
50	36.00	1140	100	300	38.00	22000	150
75	36.00	2680	150	.....	.....	.....	.....
10/5	\$41.00	40/20	100	*150/15	\$41.50	5300/530	150
20/10	41.00	160/80	100	150/75	41.50	5300/2680	150
30/15	41.00	336/168	150	300/150	43.00	22000/11000	150
60/30	41.00	850/425	150	.....	.....	.....	.....

\*Low range of this combination has an accuracy of 3 per cent.

## Triple Range

Has metal extension on case to accommodate additional resistance necessary for high ranges.

Range Volts	Each	Resistance Ohms	Scale Div.
450/300/150	\$54.50	33000/22000/11000	150
600/300/150	56.00	44000/22000/11000	150
750/300/150	57.50	55000/22000/11000	150

## Ammeters

For use on frequencies up to 500 cycles per second, except triple range ammeters which have self-contained transformer limiting use to a.c. with frequencies up to 133 cycles.

Single Range				Double Range			
Range Amp. Each	Resist. Ohms	Inductance Henrys	Scale Div.	Range Amp. Each	Resist. Ohms	Inductance Henrys	Scale Div.
1	\$35.00	.48	.00035	100	10	\$35.00	.007
1.5	35.00	.20	.000155	150	15	39.00	.0038
2	35.00	.119	.000085	100	25	39.00	.00155
3	35.00	.053	.000030	150	30	39.00	.00063
5	35.00	.0197	.0000135	100	50	39.00	.00038
10/5	\$45.00	.0083/.028	100	20/10	\$49.00	.004/.0108	100

## Triple Range

Operate through self-contained multi-range transformers, therefore they cannot be used on d.c.

3/1.5/.75	\$75.00	.....	150	20/5/2	\$79.00	.....	100
5/2.5/1	75.00	.....	100	30/7.5/3	79.00	.....	150
10/5/1	75.00	.....	100	50/20/5	79.00	.....	100
10/5/2.5	75.00	.....	100	50/20/10	79.00	.....	100
15/7.5/1.5	79.00	.....	150	.....	.....	.....	.....

Milliammeters  
Single Range

Range Milli-amp.	Each	Resist. Ohms	Scale Div.	Range Milli-amp.	Each	Resist. Ohms	Scale Div.
30	\$35.00	460	150	300	\$35.00	3.85	150
75	35.00	78	150	500	35.00	2	100
100	35.00	49	100	750	35.00	.75	150
150	35.00	13	150	Leather Cases each \$9.00			
200	35.00	8.75	100	†Also available in double range combinations.			
250	35.00	6	125				



## Weston Portable Instruments

Model 155 A.C. Instruments  
For General Plant Testing

Movable iron type. Scale length,  $5\frac{1}{4}$  inches. Accuracy within  $\frac{1}{2}$  of 1 per cent. Black walnut case without cover, leather carrying handle.

Power consumption: Voltmeters at 115 volts, 6.5 watts; at 115 volts, 25 or 60 cycles, 6.5 volt-amperes. Ammeters at 5 amperes, 1.1 watts; at 5 amperes, 25 cycles, 1.1 volt-amperes; at 5 amperes, 60 cycles, 1.4 volt-amperes.

## \*Voltmeters

Self-contained up to and including 750 volts. Higher ranges may be obtained by using Models 311 or 457 portable potential transformers in conjunction with 150-volt instrument. Dimen.: to 300 v.  $7\frac{1}{2} \times 8 \times 3\frac{1}{4}$  in., above 300 v.  $7\frac{1}{4} \times 8\frac{1}{4} \times 4$  in. Wt.: to 300 v., 4 lb.; above 300 v., 5 lb.

## Single Range

Range	Each	Resist. Ohms	Scale Div.	Range	Each	Resist. Ohms	Scale Div.
30	\$51.00	150	150	250	\$52.50	4150	125
50	51.00	415	100	300	53.00	5000	150
125	51.25	2075	125	500	55.00	8333	100
150	51.50	2500	150	600	56.00	10,000	120

## Double Range

Ranges	Each	Approx. Resist. Ohms	Scale Div.
150/75	\$56.50	1250/625	150
300/150	58.00	5000/2500	150
600/150	61.00	10000/2500	150
600/300	61.00	10000/5000	150
750/150	62.50	12500/2500	150

## Triple Range

Ranges	Each	Approx. Resist. Ohms	Scale Div.
600/300/150	\$71.00	10000/5000/2500	150
750/300/150	72.50	12500/5000/2500	150

\*Meters to be used on 500 cycles, add \$10. to prices.

## Ammeters

Self-contained up to and including 500 amperes. Higher ranges available by using Models 327 or 461 current transformers in conjunction with 5-ampere instrument. Dimen.: to 300 amp.,  $7\frac{1}{2} \times 8 \times 3\frac{1}{4}$  in., above 300 amp.,  $7\frac{1}{4} \times 8\frac{3}{4} \times 4$  in. Wt.: to 300 amp., 4 lb.; above 300 amp., 5 lb.

## Single Range

Range	Each	Approx. Resist. Ohms	Inductance Henries	Scale Div.
1	\$50.00	1.15	.00244	100
2	50.00	.287	.00057	100
3	50.00	.128	.00027	150
5	50.00	.0435	.000091	100
10	50.00	.0127	.000023	100
15	50.00	.0066	.000011	150
25	50.00	.0032	.0000033	125
50	55.00	.00117	.....	100
75	55.00	.00085	.....	150
100	55.00	.00047	.....	100
150	57.50	.00034	.....	150
200	60.00	.00034	.....	100
300	65.00	.000172	.....	150
500	75.00	.000054	.....	100

## Double Range

Range	Each	Approx. Resist. Ohms	Inductance Henries	Scale Div.
1/.5	\$65.00	1.15/4.6	.....	100
2/1	65.00	.34/1.36	.....	100
5/2.5	65.00	.052/0.218	.....	100
10/5	65.00	.012/0.045	.....	100

## Milliammeters

Range	Each	Approx. Resist. Ohms	Inductance Henries	Scale Div.	Range	Each	Approx. Resist. Ohms	Inductance Henries	Scale Div.
50	\$50.00	433	.61	100	250	\$50.00	12	.022	125
75	50.00	123	.28	150	500	50.00	2.25	.006	100
150	50.00	33	.067	150	750	50.00	1.10	.002	150

Double range milliammeters, \$65.

Leather cases: For voltmeters up to and including 300 volts, ammeters up to and including 300 amperes, and single range milliammeters, \$16.00; for voltmeters above 300 volts, \$18.00; for ammeters above 300 amperes, and double range milliammeters, \$18.50.

Weston Portable Instruments  
Model 461 Multi-Range Current Transformers  
For General Plant Testing

This transformer is for primary current ranges from 10 to 800 amperes inclusive. Four self-contained primary ranges of 10, 20, 50 and 100 amperes are brought out to binding posts. With one turn of the primary through the core opening a primary range of 800 amperes results; with two turns, 400 amperes; and with four turns, 200 amperes, etc. The secondary current rating at normal primary current is 5 amperes.

The normal secondary capacity for Type 1 is 5 volt-amperes, and its

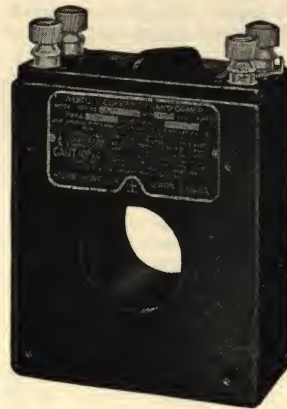
ratio accuracy is sufficiently high for use with Models 155 and 433 Ammeters, or Model 329 and 432 Wattmeters, without correction curves. Type 2 has a normal secondary capacity of 15 volt-amperes, and in addition to its greater secondary capacity, offers superior accuracy. Line potentials up to 2500 volts are permissible for both types. Type 1 is supplied in a black bakelite case and Type 2 in a tan or natural color canvas filler bakelite case.

Size,  $6\frac{1}{2} \times 7\frac{1}{2} \times 2\frac{3}{4}$  inches.

When ordering transformer correction curves, always state the model, type and serial number of the instruments to be used. Also give the frequency at which the curves are to be made. If more than one curve is required with different combinations of instruments, list those combinations. Also state the length and size of leads to be used.

Type	1	2
Model 461	each \$65.00	87.50
Weight	pounds $7\frac{1}{4}$	$8\frac{1}{2}$

## Weston Portable Instruments

Model 539 Miniature Current Transformers  
For General Plant Testing

This transformer is intended for use with Models 433 and 528 Ammeters. Accurate within 1 per cent from 25 to 150 cycles. For work requiring medium accuracy, it may be used with Model 155. It is not suitable for use with wattmeters for accurate work.

Four self-contained primary ranges of 2, 5, 10 and 20 amperes are selected through a switch; maximum of 200 amperes inserted primary. Secondary current rating at normal primary current is 1 ampere.

Ranges of 200, 100 and 50 amperes are available when the conductor is passed through the transformer one, two or four times respectively.

Capacity, 2 volt-amperes. Frequency, 25 to 150 cycles. Insulation test, 4000 volts for one minute.

Contained in a sturdy red and black bakelite case. A switch is provided for changing the self-contained primary ranges. In addition, a short-circuiting switch is provided for the secondary winding to prevent damage to the transformer if the secondary circuit should be opened while current is on the primary.

Size,  $5\frac{1}{4} \times 4\frac{1}{2} \times 1\frac{1}{8}$  inches.

Approximate weight,  $2\frac{5}{8}$  pounds.

Model 539 .....each \$41.00



## Weston Portable Instruments

Model 489 D.C. Instruments  
For General Plant Testing

For all-around checking purposes.

Accurate within 2 per cent. Permanent magnet moving coil type. Double range meters have binding posts; triple range meters have pin jacks.

Instruments are enclosed in black bakelite cases. Silver etched dials are  $2\frac{3}{4}$  inches long with black markings.

Size,  $3\frac{3}{4} \times 3\frac{3}{4} \times 1\frac{1}{2}$  inches.

Approximate weight, 11 ounces.

## Voltmeters

## Double Range

Range Volts	Each	Scale Div.
150/7.5	\$15.00	75
200/8	15.50	40
200/8	16.50	40
250/50	17.00	50

## Ohms

per  
Volt

125

125

1000

1000

## Ammeters

## Single Range

Range Amp.	Each	Scale Div.
1	\$13.00	50
10	13.00	50
30	13.00	60

## Triple Range

150/7.5/3	\$17.50	75	1000
300/7.5/3	19.00	75/50	1000
750/2.50/10	23.50	75/50	1000

## Double Range

10/1	\$14.50	50
15/3	14.50	75/60
30/3	14.50	60

## Milliammeters

## Double Range

Range Milli-amp.	Each	Resist. Ohms	Scale Div.	Range Milli-amp.	Each	Resist. Ohms	Scale Div.
150/15	\$13.50	0.7/4.1	75	150/30	\$13.50	0.7/2.6	60

## Weston Portable Instruments

Model 528 A.C. Instruments  
For General Plant Testing

For all-around checking purposes.

Accurate within 2 per cent. Movable iron type. Unshielded from external magnetic fields. Single and double range meters have binding posts; triple range meters have pin jacks.

Instruments are enclosed in black bakelite cases. Size,  $3\frac{3}{4} \times 3\frac{3}{4} \times 2\frac{1}{2}$  inches; scale length,  $2\frac{1}{2}$  inches.

Can be made for use on frequencies up to 1000 or 2500 cycles service.

Approximate weight, 11 ounces.

## Voltmeters

## Double Range

Range Volts	Each	Approximate Resist. Ohms	Scale Div.
150/15	\$14.50	7350/735	39
300/150	16.00	31600/15800	30
600/150	19.00	100000/25000	30
600/300	19.00	100000/50000	30

## Triple Range

150/15/3	\$16.50	8700/150/30	30/30
150/8/4	16.50	10000/80/40	30/40
300/8/4	21.00	43000/80/40	30/40

## Ammeters

## Single Range

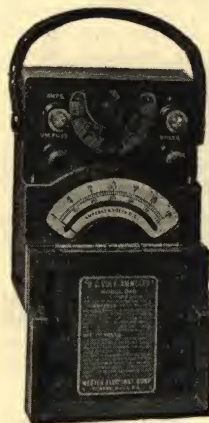
Range Amp.	Each	Resist. Ohms	Scale Div.	Range Amp.	Each	Resist. Ohms	Scale Div.
1	\$12.00	.204	50	15/3	\$16.00	....	30
3	12.00	.0249	30	15/5	19.00	....	30/50
5	12.00	.0108	50	30/3	16.00	....	30
10	12.00	.0067	50	30/5	19.00	....	30/50
15	12.00	.003	30	....	....	....	....
30	12.00	.0016	30	....	....	....	....
50	12.00	.0014	50	....	....	....	....

## Milliammeters

Range Milli-amp.	Each	Resist. Ohms	Scale Div.	Range Milli-amp.	Each	Resist. Ohms	Scale Div.
15	\$12.00	2000	30	100	\$12.00	23	50
50	12.00	175	50	500	12.00	1.1	50

Leather Case for Model 489 or 528..... \$2.50

## Weston Portable Instruments

Model 540 Fused 6-Range Volt-Ammeters  
For General Plant Testing—For D.C. Only

Accurate within one per cent. Permanent magnet moving coil type. Contained in bakelite case with hinged cover and leather carrying strap.

All ranges fused for protection from overloads. Voltage ranges protected by single fuse located in a cap. Each of current ranges protected by individual fuse mounted in special compartment covered by hinged back. Ranges are brought out through selector switch to three binding posts, a common +, a current and a potential post. By this arrangement instrument can be so connected to circuit that both current and voltage readings can be taken by turning switch without changing connections. Line is closed

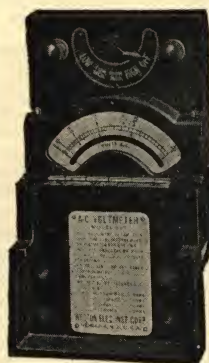
at all times when connected to ammeter binding post.

Dimensions,  $3\frac{5}{8} \times 4\frac{7}{8} \times 2\frac{1}{2}$  inches; scale length,  $2\frac{1}{4}$  inches.

Approximate weight, 2 pounds.

RANGES			Scale Div.
Volts	Each	Amperes	
30/3	\$56.00	15/1.5/0.15/0.03	60
30/3/1.5	56.00	30/3/0.03	60
60/30/6	56.00	6/0.6/0.03	60
150/15/1.5	56.00	15/1.5/0.15	75
150/15/3	56.00	15/1.5/0.15	60
150/15/3	56.00	15/1.5/0.3	60
150/15/3	56.00	30/3/0.3	60
150/15/3	56.00	30/15/3	60
150/30/3	56.00	30/3/0.3	60
150/30/3	56.00	30/0.6/0.06	60

## Weston Portable Instruments

Model 330 A.C. Voltmeters  
For General Plant Testing

In this type of voltmeter, low ranges combined with an unusually high sensitivity are possible. For use wherever current drain caused by instrument must be limited to a low value. Although the high sensitivities of the copper oxide type of voltmeter are not possible with this meter, nevertheless its accuracy is unaffected by wave form and variations in frequencies over relatively wide limits.

Accurate within one percent at 60 cycles, two percent at 25 to 100 cycles. Iron core dynamometer type. Contained in a mottled red and black bakelite case with hinged cover and leather carrying handle.

A range-changing switch is incorporated for selection of ranges. To eliminate parallax errors and facilitate accurate readings, a knife-edged pointer and mirror scale are used.

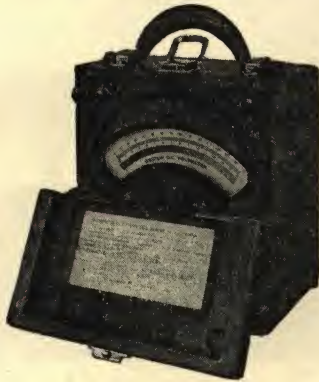
Dimensions,  $3\frac{1}{2} \times 4\frac{7}{8} \times 1\frac{1}{8}$  inches; scale length,  $2\frac{1}{4}$  inches. Approximate weight,  $1\frac{3}{4}$  pounds.

Ranges	Each	Sensitivity Ohms per Volt	Scale Div.
125/25/12.5	\$50.25	20	50
*125/25/5/1	55.25	20	50
150/30/15/1.5	55.50	20	75
150/50/10/1	55.50	20	50

\*Conforms with A.R.A. specifications.



## Weston Portable Instruments

Model 45 D.C. Instruments  
For General Plant Testing

For general testing work for rugged service.  
Accurate within  $\frac{1}{2}$  of 1 per cent. Permanent magnet moving coil type. Shielded from external magnetic fields.  
Instruments are enclosed in polished hardwood cases provided with hinged covers and carrying handles.  
Size, 8x8x4 $\frac{3}{4}$  inches; scale length, 5 $\frac{1}{16}$  inches.  
Approximate weight, 9.9 pounds.

## Voltmeters

Resistance, 100 ohms per volt, self-contained to 750 volts inclusive; ranges from 750 to 25000 volts may be had by using external multipliers. Voltmeters having a higher sensitivity than 100 ohms per volt available on order.

## Single Range

Range Volts	Each	Scale Div.	Range Volts	Each	Scale Div.
*.2-0-2.8	\$58.00	150	150	\$58.50	150
3	58.00	150	300	60.00	150
15	58.00	150	750	64.50	150

## Double Range

Range Volts	Each	Scale Div.	Range Volts	Each	Scale Div.
15/3	\$63.00	150	300/150	\$65.00	150
150/3	63.50	150	600/300	68.00	150
150/15	63.50	150	750/150	69.50	150
150/75	63.50	150	.....	.....	.....

## Triple Range

Range Volts	Each	Scale Div.	Range Volts	Each	Scale Div.
150/15/3	\$68.50	150	750/300/150	\$74.50	150
300/150/3	70.00	150	.....	.....	.....

## Ammeters

Self-contained up to and including 25 amperes; above 25 amperes, with external shunts. Ranges 1.5 to 25 amperes may be had with external shunts, at base price plus price of shunt selected. Specify when desired for use with Weston Rotary Shunt, as an instrument with a special movement having a resistance of 10 ohms and a sensitivity of 5 milliamperes must be supplied for this purpose. This special instrument is supplied without extra charge.

Range Amp.	Each	Scale Div.	Range Amp.	Each	Scale Div.
†Base	\$60.00	...	25	\$65.00	125
1.5	65.00	150	50	67.00	100
3	65.00	150	100	67.00	100
5	65.00	100	150	67.50	150
10	65.00	100	300	67.50	150
15	65.00	150	500	74.50	100

## Milliammeters

Range Milli-amp.	Each	Scale Div.	Resist. Ohms	Range Milli-amp.	Each	Scale Div.	Resist. Ohms
1.5	\$57.00	150	.360	150	\$57.00	150	.35
15	57.00	150	3.3	300	57.00	150	.17
100	57.00	100	.50	750	57.00	150	.07

\*Scale adapted for use in connection with cadmium test on storage batteries.

†To determine the price of any other range ammeter not listed, add base price to price of shunt desired.

## Weston Portable Instruments

Model 280 D.C. Instruments  
For General Plant Testing

Accurate within one per cent.  
Permanent magnet moving coil type.

Voltmeters and volt-ammeters have resistances of approximately 100 ohms per volt.

Dimensions, 4.4x4.6x1.5 inches; scale length, 2 $\frac{11}{16}$  inches. Approximate weight, 1.1 pounds.

## Voltmeters

Range	Each	Scale Div.	Range	Each	Scale Div.
1.5	\$23.00	75	25/10/2.5	\$28.00	50
3	23.00	60	30/3/1.5	28.00	60
5	23.00	50	30/15/3	28.00	60
7.5	23.00	75	50/5/2.5	28.00	50
10	23.00	50	50/25/5	28.00	50
15	23.00	75	100/25/2.5	28.00	50
30	23.00	60	100/50/5	28.00	50
50	23.00	50	150/15/1.5	28.50	75
60	23.00	60	150/15/3	28.50	60
75	23.00	75	150/30/3	28.50	60
100	23.00	50	150/60/3	28.50	60
150	23.00	75	150/75/3	28.50	75
400/40	43.50	40	.....	.....	.....

## Millivoltmeters

Range	Each	Scale Div.	Range	Each	Scale Div.
*50	\$24.00	50	250	\$23.00	50
*100	24.00	50	500	23.00	50
150	23.00	75	750	23.00	75

\*Furnished with 5-foot leads.

## Ammeters

Range	Each	Scale Div.	Range	Each	Scale Div.
1	\$22.00	50	10/1/0.5	\$27.00	50
1.5	22.00	75	10/5/0.5	27.00	50
3	22.00	60	10/2.5/1	27.00	50
5	22.00	50	15/3/0.15	27.00	60
10	22.00	50	15/3/1.5	27.00	60
15	22.00	75	25/2.5/0.5	27.00	50
30	22.00	60	25/5/2.5	27.00	50
†50	31.00	50	25/10/2.5	27.00	50
†100	31.00	50	25/10/5	27.00	50
†150	31.00	75	30/3/1.5	27.00	60
5/2.5/0.25	27.00	50	30/15/3	27.00	60
10/1/0.1	27.00	50	.....	.....	.....

†Provided with external shunt having a drop of 50 millivolts.

## Milliammeters

Milliammeters with ranges above 30 milliamperes are shunted and have a drop of approximately 100 millivolts.

Range	Each	Approx. Resist.	Scale Div.	Range	Each	Approx. Resist.	Scale Div.
1.5	\$22.00	27	75	300	\$22.00	.33	60
5	22.00	10.6	50	500	22.00	.2	50
10	22.00	5.4	50	750	22.00	.13	75
25	22.00	1.2	50	30/15/3	27.00	...	60
50	22.00	2.0	50	50/10/1	27.00	...	50
75	22.00	1.33	75	125/25/5	27.00	...	50
100	22.00	1.00	50	150/15/1.5	27.00	...	75
150	22.00	0.66	75	600/120/30	27.00	...	60
250	22.00	0.4	50	.....	.....	.....	.....

## Volt-Ammeters

Volts	Each	Amperes	Scale Div.	Volts	Each	Amperes	Scale Div.
30/3/1.5	\$36.00	30/3/1.5	60	150/15/1.5	\$36.50	30/15/1.5	60
30/15/3	36.00	15/3/0.15	60	150/15/1.5	36.50	30/15/1.5	60
30/3/1.5	36.00	30/3/0.3	60	150/15/3	36.50	15/1.5/0.15	60
50/5/2.5	36.00	10/1/0.1	50	150/15/3	36.50	30/3/1.5	60
50/25/2.5	36.00	25/2.5/0.5	50	150/15/3	36.50	30/15/3	60
†60/30/6	36.00	6/0.6/0.03	60	150/30/3	36.50	30/15/1.5	60
150/15/1.5	36.50	15/1.5/0.15	75	150/30/3	36.50	30/0.6/0.06	60
150/15/1.5	36.50	30/3/1.5	60	150/60/3	36.50	30/6/0.06	60

†For railway and automatic train control testing.

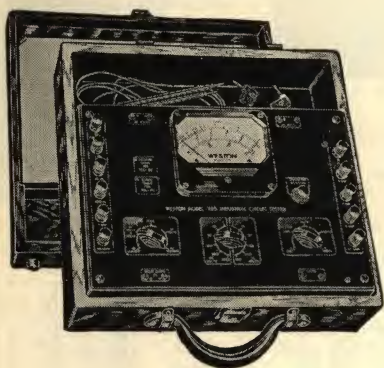
Leather Case for Standard Model 280 Instruments. ea. \$3.00



## Weston Portable Multi-Purpose Instruments

### Model 785 Industrial Circuit Testers

For Circuit Analysis and Maintenance Testing



Has 27 practical, sensitive ranges applicable to all types of testing.

Especially suited to testing on signal, telegraph, telephone and communication circuits, and power distribution networks, as well as all types of industrial testing.

The meter is a standard 4½-inch Weston instrument with a d.c. sensitivity of 50 microamperes. Has sensitivities of 20,000 ohms per volt on d.c., and 1000 ohms per volt on a.c. ranges. This high sensitivity permits the use of this model on sensitive relay and vacuum tube circuits without disturbing the circuit conditions. Rapid selection of ranges accomplished by marked selector switches.

Can be used for a.c. measurements up to 500 volts and 10 amperes without external transformers. Current transformers can be used with the 1 or 5-ampere range for higher a.c. measurements. The d.c. ranges can be extended through the use of external shunts. Ohmmeter ranges operate from a self-contained battery, and incorporate an adjustment feature for compensating for variations in battery voltage.

Accuracy on all d.c. ranges guaranteed to be within 2 per cent up to 500 volts. Accuracy on 1000 volt range, 3 per cent. Accuracy on all a.c. ranges, guaranteed to be within 3 per cent on 60 cycles. Slightly less accuracy on 25 and 133 cycles. Accuracy on ohmmeter ranges guaranteed to be within 2 per cent of linear arc length.

Dimensions, 13x12½x5½ inches.

Weight with batteries and oak case, 13½ pounds.

Model 785, With Oak Carrying Case.....each \$105.00  
Model 785, In Steel Case for Bench Use.....each 85.00

VOLTS		RANGES		Ohms
D.C.	A.C.	D.C. AMPERES	A.C.	
1	5	50 Micro-Amp.		
10	15	1 Ma.		3,000
50	30	10 Ma.	.5 Amp.	30,000
200	150	100 Ma.	1. Amp.	300,000
500	300	1 Amp.	5. Amp.	3 Megohms
1000	750	10 Amp.	10. Amp.	30 Megohms

## Weston Portable Multi-Purpose Instruments

### Model 639 A.C. Industrial Analyzers

For Circuit Analysis and Maintenance Testing

Type 2



The model 639 Industrial Analyzer is widely used by plant maintenance men, utility service engineers, electrical contractors and those engaged in general industrial testing or installation work. It is designed to analyze industrial loads by measuring current, voltage and power in single and polyphase circuits as well as power factor in 3-phase circuits.

An analysis of plant load conditions with Model 639 quickly detects over or underloaded motors, indicating that relocating transformers or interchanging motors will effect considerable savings. Four Model 610 instruments (a voltmeter, wattmeter, power factor meter, and an ammeter) are included in its strong oak carrying case. The ammeter is equipped with an adjustable pointer stop which allows the maximum value of starting currents to be quickly determined. Accuracy: voltmeter and ammeter, 1 per cent; power factor meter, 1 per cent; wattmeter, 2 per cent. Scale lengths, 3.5 inches.

Only a few simple connections are necessary to place this instrument in circuit; the maze of interconnecting wires necessary when individual meters are used is eliminated. Basic connection diagrams and operating instructions are contained in one card in the cover of the instrument. A pocket manual, containing additional connection diagrams and detailed information relative to the use of this analyzer, is also furnished.

Model 639 has self-contained potential ranges of 150/300/600 volts, current ranges of 5/25/125 amperes and corresponding wattmeter ranges. External current and potential transformers may be used for extending these ranges. Power factor indications are for 3-phase 3-wire only; .30 lag through unity to .80 lead.

On 220 volt 3-phase circuits the 5-ampere range will take care of loads to 1 hp. on the 2 kw. scale; on the 25-ampere range up to 7½ hp. on the 10 kw. scale; on the 125-ampere range up to 40 hp. on the 50 kw. scale. At 440 or 550 volts, the hp. and kw. ranges are doubled. A full technical description including connection diagrams is available upon request.

Size, 18⅞x10⅞x6⅞.

Approximate weight, 32 pounds.

Model 639..... each \$420.00



## Weston Portable Multi-Purpose Instruments Model 633 A.C. Clamp-Ammeters For Circuit Analysis and Maintenance Testing



Permits the measurement of alternating current without breaking the circuit for the insertion of the conventional ammeter or current transformer. Rapid a.c. measurements can be easily made on insulated or non-insulated conductors.

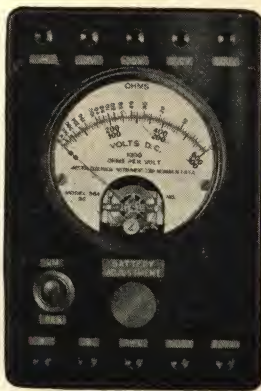
The design of the Model 633 permits its use as a completely self-contained instrument for direct measurement at the point of application. In addition, through the use of the extension cable feature, readings can be obtained at a point remote from the current carrying conductor.

The clamping jaws of this instrument will accommodate any electrical conductor with a maximum cross-section of 2 inches. Their heavy insulation makes it possible to use the instrument on insulated or non-insulated conductors.

Accurate within 3 per cent when used on frequencies between 50 and 70 cycles. Voltage breakdown test, 3700 volts a.c. Scale length, 2.36 inches.

Size, 1 $\frac{3}{8}$ x 4 $\frac{3}{8}$ x 3 $\frac{1}{2}$ inches. Weight, 3 $\frac{3}{4}$ pounds.	
Model 633, Type A-1, for 0-10/25/50/100/250/500 Amperes.....	each \$75.00
Model 633, Type A-2, for 0-10/25/100/250/500/1000 Amperes.....	each 80.00
Model 633, Type A-3, for 0-50/100/250/500/1000/2000 Amperes.....	each 85.00
50-Foot Extension Cable, Plug and Receptacle.....	each 48.00
Leather Carrying Case for Clamp-Ammeter.....	each 11.00
Leather Carrying Case for Cable, Plug and Receptacle.....	each 15.00

## Weston Portable Multi-Purpose Instruments Model 564 Volt-Ohmmeters For Circuit Analysis and Maintenance Testing Type 3C



The equipment consists of a Model 301 with four 1000 ohms per volt voltage ranges of 600/300/30/3 and resistance ranges of either 0-100000 and 0-1000 ohms or 0-1000000, 0-100000 and 0-1000 ohms. A self-contained 4 $\frac{1}{2}$ -volt C battery is provided for potential. A pair of 50-inch test leads is shipped with each volt-ohmmeter.

Any change in potential of the self-contained battery can be readily compensated for by short circuiting the pin-jacks X-X and adjusting the pointer to the zero ohm position by turning the voltage adjuster located at the top of the name-plate.

All voltage ranges are brought out to pin-jacks. A toggle switch connects the meter in circuit as a voltmeter or ohmmeter.

Pocket size; shipping weight, 6 pounds.	
Model 564, Type 3C.....	each \$36.00
Carrying Case.....	each 6.00

## Weston Portable Multi-Purpose Instruments Model 703 Direct-Reading Sight Meters For Maintenance Testing



Lighting engineers choose this sight meter as the accepted means of measuring illumination in terms of seeing. Serves as an invaluable aid in the promotion of better sight through the use of better light. It is an ideal tool in the selling of lighting equipment, such as lamps and reflectors, in that it can be used for actual demonstration to show the amount of light available at the location.

The use of a multiplier disc over the cell will extend the range to ten times its normal full scale value.

Model 703, Type 3, for 0-75 Foot-Candles.....	each \$18.00
Model 703, Type 6, for 0-75 Foot-Candles; with Viscor Filter.....	each 26.00
Multiplier Disc.....	each .75
Leather Carrying Case.....	each 1.75

## Weston Portable Multi-Purpose Instruments Model 614 Foot-Candle Meters



A direct reading foot-candle meter calibrated directly in terms of tungsten filament standard lamps. Responds quickly to even slight variations of light.

With this meter any user of light can analyze lighting conditions and determine the correct illumination for each particular and individual purpose.

Does not require the use of batteries, voltage or lamps; has indefinite life with permanent calibration.

The operating equipment consists of an indicating instrument, a three-way toggle switch and a Photronic photo-electric cell all mounted on a bakelite panel. The instrument reads directly in foot-candles and has three ranges, 0-60, 0-120 and 0-600 which are controlled by the three-way toggle switch. The Photronic photo-electric cell or light target is hinged so that it can be lifted from the horizontal to the vertical position.

This meter is always ready for instant use. To measure illumination on a horizontal plane it is only necessary to open cover, hold instrument in a horizontal position with the cell or light target lying in its socket and then take the readings. The toggle switch simplifies switching to any of the three meter ranges so as to give a good scale deflection for any value of light intensity within maximum range of instrument. Available with Viscor Filter (range 0-100/250/500).

Assembled in a moulded black bakelite carrying case equipped with hinged cover and strap handle. Length of case, 7 $\frac{1}{2}$  inches; height, 3 $\frac{1}{2}$  inches; width, 2 $\frac{1}{4}$  inches.

Weight, 1.8 pounds.

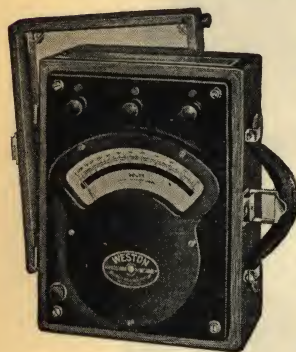
Model 614, with Viscor Filter.....	each \$50.00
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## Weston Portable Precision Instruments

For Standardization and High Accuracy Measurements

## Model 341 A.C. and D.C. Voltmeters



Electrodynamometer type. Shielded from external magnetic fields. All ranges listed are self-contained.

Regularly supplied as single, double, and triple range voltmeters for use on direct current, or alternating current at frequencies from 15 to 133 cycles.

Power consumption: 150-volt range at 115 volts, 3.9 watts; at 25 or 60 cycles, 3.9 volt-amperes.

Accurate within  $\frac{1}{4}$  of 1 per cent. Scale length, 5.25 in.

Size,  $8 \times 10\frac{1}{4} \times 5\frac{3}{4}$  inches.

Approximate weight, 11 pound.

## Double Range

Range Volts	Each	Scale Div.	Approx. Resist. Ohms	Range Volts	Each	Scale Div.	Approx. Resist. Ohms
5/1	\$140.00	100	10/2	120/60	\$140.00	120	2700/1350
6/3	140.00	150	21/10.5	150/75	141.00	150	3300/1650
15/1.5	140.00	150	30/3	300/150	144.00	150	6700/3350
15/7.5	140.00	150	100/50	600/150	150.00	150	20000/5000
30/15	140.00	150	300/150	600/300	150.00	150	20000/10000

## Triple Range

Range Volts	Each	Scale Div.	Approx. Resist. Ohms
75/150/300	\$154.00	150	1675/3350/6700
150/300/600	160.00	150	5000/10000/20000
150/300/750	163.00	150	5000/10000/25000

Leather Case for Model 341.....each \$22.00

For higher ranges, Models 311 or 457 Potential Transformers or external resistors can be used. Instruments for use on frequencies up to 500 cycles are available on special order at \$15.00 extra. In this case, the current drain will be somewhat greater than in standard instruments.

## Model 370 A.C. and D.C. Instruments



Electrodynamometer type. Shielded from external magnetic fields.

Model 370 instruments will maintain their guaranteed accuracy when used on direct current, or alternating current within the following frequencies: ammeters, 15 to 133 cycles; single range milliammeters, 15 to 1000 cycles; double range milliammeters, 15 to 133 cycles.

Power consumption: 5-ampere range at 5 amperes; at 60 cycles, 4.5 watts,

4.7 volt-amperes; at 25 cycles, 4.5 watts, 4.5 volt-amperes.

Accurate within  $\frac{1}{4}$  of 1 per cent. Scale length, 5.25 inches. Size,  $8 \times 10\frac{1}{4} \times 5\frac{3}{4}$  inches.

Approximate weight, 10 pounds.

## Ammeters

Range Amp.	Each	Scale Div.	Range Amp.	Each	Scale Div.
1/5	\$150.00	100	10/5	\$145.00	100
2/1	150.00	100	20/10	155.00	100
5/2.5	145.00	100	.....	.....	.....

Ammeters for 1000-cycle service are available on special order at \$16.50 extra.

## Milliammeters

Range Milli-amp.	Each	Scale Div.	Approx. Resist. Ohms	Range Milli-amp.	Each	Scale Div.	Approx. Resist. Ohms
15	\$145.00	150	1130	150/75	\$150.00	150	45/110
30	145.00	150	325	300/150	150.00	150	14/14
.....	.....	.....	.....	500/250	150.00	100	4.5/4.5

Leather Case for Model 370.....each \$22.00

For certified tests and precise laboratory measurements exceeding the self-contained ranges listed, Models 327, 328, or 461 Type 2 Current Transformers are recommended in conjunction with a 5/2.5 or 10/5 ampere instrument. For less exacting requirements, the Model 461 Type 1 Current Transformer will prove satisfactory.

## Model 329 Polyphase Wattmeters



Electrodynamometer type. Shielded from external magnetic fields. All ranges listed are self-contained.

Model 329 Polyphase Wattmeter actually consists of two electrically independent single-phase wattmeters having their movable coils mounted on a common shaft, with each coil surrounded by its own system of field coils. They may be used independently

with scale errors of less than  $\frac{1}{2}$  per cent, which is of great

importance for measurements on unbalanced polyphase circuits, or on balanced three-phase circuits at low power factors. They are for use on frequencies from 15 to 133 cycles.

Model 329 is made with double current and triple voltage ranges. Current ranges are changed by means of links, and voltage ranges have independent binding posts. Power measurements on direct current, single-phase a.c. two or three-wire circuits, two-phase three or four-wire circuits, and on three-phase circuits may be made directly.

Power consumption per element: potential circuit at 115 volts, 3 watts; at 25 or 60 cycles, 3 volt-amperes. Current circuit at 5 amperes, 0.81 watt. At 25 cycles, 0.83 volt-ampere and at 60 cycles, 0.95 volt-ampere.

Accurate within  $\frac{1}{2}$  of 1 per cent. Scale length, 5.25 in.

Size,  $9\frac{1}{2} \times 10\frac{1}{2} \times 8\frac{1}{8}$  inches.

Approximate weight, 18 pounds.

Volts	AMPERES				WATT RANGES				Watt Range Calibrated	Scale Div.	Each
	NORMAL Series	Multiple	MAXIMUM Series	Multiple	Filled Coils in Series	Field Coils in Multiple					
Normal 50/100/200.....	2.5	5	5	10	250/500/1000	500/1000/2000			500	100	\$310.00
Maximum 75/150/300.....	5	10	10	20	.5/1/2 kw.	1/2/4 kw.			1 kw.	100	310.00
	10	20	20	40	1/2/4 kw.	2/4/8 kw.			1 kw.	100	350.00
Normal 100/200/500.....	2.5	5	5	10	.5/1/2.5 kw.	1/2/5 kw.			500	100	335.00
Maximum 150/300/600.....	5	10	10	20	1/2/5 kw.	2/4/10 kw.			1 kw.	100	335.00
	10	20	20	40	2/4/10 kw.	4/8/20 kw.			2 kw.	100	375.00

Leather case for Model 329, \$33.00 each.

For higher ranges, current and potential transformers or multipliers are recommended.



## Weston Portable Precision Instruments

## Model 310 D.C. and Single Phase A.C. Wattmeters

## For Standardization and High Accuracy Measurements



Electrodynamometer type. Shielded from external magnetic fields.

Power consumption, Forms 1 and 3: potential circuit at 115 volts, 2.9 watts; at 25 or 60 cycles, 2.9 volt-amperes. Current circuit at 5 amperes, 0.81 watt; at 25 cycles, 0.83 volt-ampere and at 60 cycles, 0.95 volt-ampere.

Power consumption, Form 2: potential circuit at 115 volts, 4.4 watts. At 25 or 60 cycles, 4.4 volt-amperes. Current circuit at 5 amperes, 3.6 watts; at 25 cycles, 3.7 volt-amperes, and at 60 cycles, 4 volt-amperes.

FORM 1. For use on direct current, and alternating current at frequencies from 15 to 133 cycles. Exactly compensated for temperature changes. Full scale deflection obtained with normal potential and current values.

FORM 2. For low power factor use on frequencies from 15 to 133 cycles. Full scale deflection obtained with 20 per cent power factor.

FORM 3. This instrument will maintain its guaranteed accuracy when used on direct current or alternating current within the following frequencies: ranges between 50 and 100 volts—15 to 600 cycles; above 100 volts, 15 to 1200 cycles. Full scale deflection obtained with normal potential and current values at unity power factor.

Forms 1 and 3 Wattmeters have field coils designed to stand approximately double normal current continuously, and the potential circuits about  $1\frac{1}{2}$  times their normal voltage. They have double current ranges equipped with range-changing links and triple voltage ranges having independent binding posts. Form 2 Wattmeters have two potential ranges. All wattmeters have a locking contact key and a reversing switch for measuring three-phase power by the two wattmeter method.

Accurate within  $\frac{1}{4}$  of 1 per cent. Scale length, 5.25 in.

Approximate weight, 12 pounds.

## Forms 1 or 3

Volts	AMPERES				WATT RANGES		Watt Range Calibrated	Scale Div.	Each
	NORMAL		MAXIMUM		Field Coils in Series	Field Coils in Multiple			
Maximum 75/150/300	Series	Multiple	Series	Multiple					
	.5	1	1	2	25/50/100	50/100/200	50	100	\$170.00
	1	2	2	4	50/100/200	100/200/400	100	100	170.00
	1.25	2.5	2.5	5	62.5/125/250	125/250/500	125	125	170.00
	2.5	5	5	10	125/250/500	250/500/1000	125	125	165.00
	5	10	10	20	250/500/1000	500/1000/2000	500	100	165.00
	10	20	20	40	.5/1/2 Kw.	1/2/4 Kw.	1 Kw.	100	205.00
	20	40	40	80	1/2/4 Kw.	2/4/8 Kw.	2 Kw.	100	205.00
Maximum 150/300/600	.5	1	1	2	50/100/250	100/200/500	50	100	195.00
	1	2	2	4	100/200/500	200/400/1000	100	100	195.00
	1.25	2.5	2.5	5	125/250/625	250/500/1250	125	125	195.00
	2.5	5	5	10	250/500/1250	500/1000/2500	250	125	190.00
	5	10	10	20	.5/1/2.5 Kw.	1/2/5 Kw.	500	100	190.00
	10	20	20	40	1/2/5 Kw.	2/4/10 Kw.	1 Kw.	100	230.00
	20	40	40	80	2/4/10 Kw.	4/8/20 Kw.	2 Kw.	100	230.00
	30	60	60	120	3/6/15 Kw.	6/12/30 Kw.	3 Kw.	150	230.00
	50	100	75	150	5/10/25 Kw.	10/20/50 Kw.	5 Kw.	100	230.00

## Form 2—For Low Power Factor Use

Max. Volts	MAXIMUM AMPERES		WATT RANGES		Watt Range Calibrated	Scale Div.	Each
	Fields in Series	Fields in Multiple	Fields in Series	Fields in Multiple			
75/150	*.5	1	7.5/15	15/30	15	150	\$182.00
	1	2	15/30	30/60	15	150	182.00
	2.5	5	37.5/75	75/150	75	150	182.00
	5	10	75/150	150/300	150	150	182.00

\*This range is not compensated and is useful for special conditions only. The power required to operate this instrument will often be as much, and in some cases more, than the power to be measured. Therefore, all possible information should be given in correspondence previous to placing order.

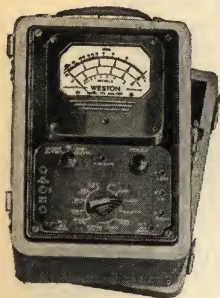
Leather Case for Model 310.....each \$22.00



## Model 779 Weston Super-Sensitive Analyzer

## Type 1

1000 or 20,000 Ohms Per Volt



Used for measurement of tube circuits, potentials and current, power level in decibels, plate voltage and current on amateur transmitters, diode currents in AVC circuits and AFC current, leakage of condensers, and resistance of all types of circuits.

Has heavy molded Bakelite panel, rugged solid oak case, removable cover, convenient carrying handle, and 26 ranges, and precision resistors throughout.

Voltage range; 5, d.c. at a sensitivity of either 1000 or 20,000 ohms per volt. Alternating current temperature compensated.

Alternating current accuracy within 3 per cent.

Direct current accuracy within 2 per cent up to 1000 volts; 3 per cent on 1000 volt range.

Dimensions: width 6 $\frac{3}{8}$  inches; height, 9 $\frac{1}{8}$  inches; depth 4 $\frac{7}{8}$  inches.

Approximate weight, 6 pounds.

VOLTS		Ranges		
A.C.	D.C.	Direct Current Only	Decibels	Ohms
2.5	2.5	.1 Milliampere	-14 to +2	0-3000
10	10	1 Milliampere	-2 to +14	0-30,000
50	50	10 Milliampere	+12 to +28	0-30,000
250	250	50 Milliampere	+26 to +42	00-3 Meg.
1000	1000	250 Milliampere		
		1 Ampere		
		10 Amperes	+38 to +54	.....

Model 779.....each \$85.00

## No. 41-011 Ideal Portable Insulation Resistance Testers



For checking a.c. or d.c. electrical equipment. Provides a quick, reliable method of checking insulation resistance in all types of electrical circuits and equipment.

Range, 0 to 100 Megohms.

Entirely self-contained.

Power is provided by a small, internal hand generator, which is operated by slowly turning a crank.

Correct testing voltage is indicated by two small button

lights that glow at 500 d.c. range, 0 to 100 Megohms.

Furnished with 1 pair of 10 foot leads and carrying case.

No. 41-011.....each \$164.71

## Weston Switchboard Instruments

For Power Distribution Panels  
7-Inch Round Pattern

Regularly supplied surface type; back connected; pressed steel cases; dull black finish.

Accurate within 1 per cent. Scale, 5.1 inches (130 mm.).

Diameter at base, 7 $\frac{3}{4}$  inches.

Flush type available at \$3.50 extra.

## Model 252, D.C. Voltmeters

Permanent magnet moving coil type. Sensitivity, approximately 100 ohms per volt. Self-contained up to 300 volts. Voltmeters can be provided with a second but lower range at \$7.50 extra.

Resistance thermometers for use with external exploring coils can be supplied in Model 252.

Range	Each	Scale Div.	Range	Each	Scale Div.
150	\$40.00	30	300	\$44.00	30

## Model 252, D.C. Ammeters

Permanent magnet moving coil type. All ranges are provided with external 50 millivolt shunts and 8-foot leads.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
10	\$45.50	50	75	\$45.50	30	300	\$46.00	30
15	45.50	30	100	45.50	50	400	47.50	40
25	45.50	50	150	45.50	30	500	49.00	50
50	45.50	50	200	45.50	40	1000	60.00	50

## Model 260, A.C. Voltmeters

Movable iron type. Power consumption, 150-volt range at 115 volts, 6.8 watts. At 25 or 60 cycles, 6.8 volt-amperes.

For use on frequencies from 25 to 133 cycles. For 500 cycle service, add \$8.00 to prices below. Self-contained up to 300 volts.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
150	\$37.50	30	300	\$39.00	30	600	\$49.00	60

## Model 260, A.C. Ammeters

Movable iron type. Power consumption, 5-ampere range at 5 amperes, 1.1 watts. At 25 cycles, 1.1 volt-amperes and at 60 cycles, 1.4 volt-amperes.

For use on frequencies from 25 to 500 cycles. Furnished with ranges from 1 to 10 amperes and scaled to correspond at \$35.00. May also be furnished in any of these ranges, but scaled for use with current transformers, at the same price. When so ordered, specify scale desired and transformer ratio.

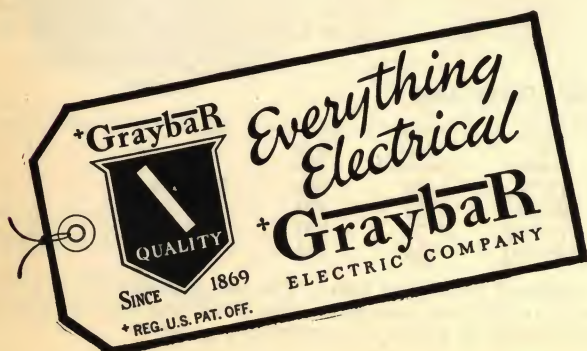
Thermo ammeters are available in Model 400; prices on application.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
5	\$35.00	50	5	\$35.00	200	5	\$35.00	600
5	35.00	75	5	35.00	300	5	35.00	800
5	35.00	100	5	35.00	400			
5	35.00	150	5	35.00	500			

## Wattmeters, Power Factor Meters, Frequency Meters, and Synchroscopes

These instruments, representing a complete line for the conventional switchboard, are available in designs matching the voltmeters and ammeters listed above.

Prices and complete bulletins furnished on application.





## Weston Switchboard Instruments

For Power Distribution Panels  
6-Inch Rectangular Pattern

Regularly supplied surface type; back connected; pressed steel case; dull black finish.

Accurate within 1 per cent. Scale 5.12 inches (130 mm.). Size at base, 5 $\frac{3}{4}$  x 6 inches.

Flush or semi-flush type available at \$3.50 extra.

## Model 502, D.C. Voltmeters

Permanent magnet moving coil type. Sensitivity, approximately 100 ohms per volt. All ranges listed are self-contained. Can be provided with a second but lower range at \$5.50 extra.

Resistance thermometers for use with external exploring coils can be supplied in Model 502.

Range.....	15	150	300
Each.....	\$40.00	41.00	44.00
Scale Division.....	30	30	30

## Model 502, D.C. Ammeters

Permanent magnet moving coil type. All ranges are provided with external 50 mv. shunts and 8-foot leads.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
10	\$45.50	50	200	\$45.50	40	1200	\$63.50	60
15	45.50	30	300	46.00	30	1500	69.50	30
25	45.50	50	400	47.50	40	2000	73.50	40
50	45.50	50	500	49.00	50	2500	82.50	50
75	45.50	30	600	50.75	30	3000	90.00	30
100	45.50	50	750	53.00	30	.....	.....	..
150	45.50	30	1000	60.00	50	.....	.....	..

## Model 496, A.C. Voltmeters

Movable iron type. Power consumption, 150-volt range at 115 volts, 6.8 watts. At 25 or 60 cycles, 6.8 volt-amperes.

For use on frequencies from 25 to 125 cycles. Available for use on higher frequencies. External resistors are required for ranges. Between 301 and 750 volts, a Type 3 No. 2 box is used. Above 750 volts, a potential transformer is recommended.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
150	\$37.50	30	300	\$39.00	30	600	\$49.00	60
250	38.50	25	500	46.00	50	...	.....	..

## Model 496, A.C. Ammeters

Movable iron type. Power consumption, 5-ampere range at 5 amperes, 1.1 watts. At 25 cycles, 1.1 volt-amperes, and at 60 cycles, 1.4 volt-amperes.

For use on frequencies from 25 to 500 cycles. Furnished with ranges from 1 to 10 amperes, and scaled to correspond at \$35.00. May also be furnished in any of these ranges, but scaled for use with current transformers, at the same price. When so ordered, specify scale desired and transformer ratio.

Range		Each	Scale	Div.	Range		Each	Scale	Div.	Range		Each	Scale	Div.
5	\$35.00		5	50	5	\$35.00		200	40	5	\$35.00		750	75
5	35.00		50	50	5	35.00		300	30	5	35.00		1000	50
5	35.00		75	75	5	35.00		400	40	5	35.00		1500	30
5	35.00	100	50	5	35.00		500	50	.	.....		.....	.....	..
5	35.00	150	30	5	35.00		600	60	.	.....		.....	.....	..

## Wattmeters, Power Factor Meters, Frequency Meters, and Synchroscopes

These instruments, representing a complete line for the conventional switchboard, are available in designs matching the voltmeters and ammeters listed above.

Prices and complete bulletins furnished on application.

## Weston Switchboard Instruments

Models 267, 269, 271, and 273 Ammeters,  
Milliammeters and Voltmeters

Fan-Shaped—For Power Distribution Panels—D.C.



Permanent magnet moving coil type; magnetically shielded.

In surface type pressed steel cases with back connections, dull black finish, at prices shown. Model 269, with bakelite case at a surcharge of \$5.25 above regular price. When a bakelite case is used, instrument is not shielded.

## Dimensions and Weights

Model.....	267	269	271	273
Width.....	4 $\frac{3}{32}$	5 $\frac{5}{8}$	7 $\frac{7}{8}$	9 $\frac{5}{16}$
Height.....	3 $\frac{3}{8}$	4 $\frac{7}{16}$	6 $\frac{1}{4}$	7 $\frac{1}{2}$
Projection from Panel.....	1 $\frac{1}{32}$	1 $\frac{1}{32}$	1 $\frac{1}{4}$	2 $\frac{1}{16}$
Length of Scale.....	2 $\frac{1}{2}$	4	6	7 $\frac{1}{32}$
Approximate Weight.....	1	1 $\frac{1}{2}$	4	5

## Ammeters

Amperes	Model 267-269-271	Model 273	Model 267 Each	Model 269 Each	Model 271 Each	Model 273 Each
1	50	100	\$36.75	\$44.25	\$58.50	\$66.75
1.5	75	75	36.75	44.25	58.50	66.75
2	40	100	36.75	44.25	58.50	66.75
3	60	60	36.75	44.25	58.50	66.75
5	50	50	36.75	44.25	58.50	66.75
10	50	100	36.75	44.25	58.50	66.75
15	75	75	36.75	44.25	58.50	66.75
20	40	100	36.75	.....	58.50	66.75
25	50	50	36.75	44.25	58.50	66.75
30	60	60	26.75	44.25	58.50	66.75
50	50	50	36.75	44.25	58.50	66.75
75	75	75	36.75	44.25	58.50	66.75
100	50	100	36.75	44.25	58.50	66.75
150	75	75	36.75	44.25	58.50	66.75
200	40	100	36.75	44.25	58.50	66.75
300	60	60	37.50	45.00	59.25	67.50
400	40	40	39.75	47.25	61.50	69.75
500	50	50	42.00	49.50	63.75	72.00
750	75	75	48.00	55.50	69.75	78.00
1000	50	100	57.50	66.00	80.25	88.50
1500	75	75	72.75	80.25	94.50	102.75
2000	40	100	78.75	86.25	100.50	108.75
3000	60	60	103.00	112.50	126.75	135.00

Models 267 and 269 have self-contained shunts up to and including 30 and 50 amperes respectively—above these ranges with external 100 millivolt shunts. Models 271 and 273 with external 50 millivolt shunts. Prices include shunts.

## Milliammeters

Milli-amperes	Model 267-269-271	Model 273	Model 267 Each	Model 269 Each	Model 271 Each	Model 273 Each
1	50	100	\$28.00	\$36.00	\$50.25	\$58.50
5	50	50	28.00	36.00	50.25	58.50
10	50	100	28.00	36.00	50.25	58.50
25	50	50	28.00	36.00	50.25	58.50
50	50	50	28.00	36.00	50.25	58.50
100	50	100	28.00	36.00	50.25	58.50
150	75	75	28.00	36.00	.....	.....
200	40	100	28.00	36.00	50.25	58.50
300	60	60	28.00	36.00	50.25	58.50

Model 267 ranges above 50 milliamperes are shunted and have a drop of approximately 100 millivolts; Model 269 above 25 milliamperes 100 millivolts; Model 271 above 25 milliamperes 50 millivolts; Model 273 above 20 milliamperes 50 millivolts.

## Voltmeters

Volts	Model 267-269-271	Model 273	Model 267 Each	Model 269 Each	Model 271 Each	Model 273 Each
10	50	100	\$28.50	\$36.00	\$50.25	\$58.50
15	75	75	28.50	36.00	50.25	58.50
20	40	100	.....	36.00	50.25	58.50
25	50	50	28.50	.....	.....	.....
30	60	60	28.50	36.00	50.25	58.50
50	50	50	28.50	36.00	50.25	58.50
75	75	75	28.50	36.00	50.25	58.50
150	75	75	28.50	37.75	51.00	59.25
250	50	50	*41.00	38.25	52.50	60.75
300	60	60	*42.00	39.00	53.25	61.50

Approximate resistance in ohms per volt: Model 267 100; Model 269 100; Model 271 100; Model 273 100.

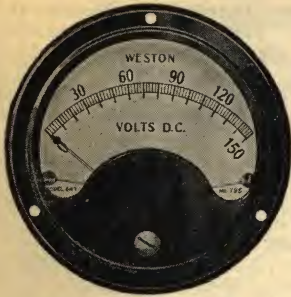
\*Furnished with external resistor.

Millivoltmeters are also available in the fan-shaped instruments. Prices upon application.



## Weston Panel Instruments

### Model 640 Group (Models 643, 642, 641 and 640) For General Small Panel Requirements



Models 643, 642 and 640 are supplied in flush or surface cases of metal or bakelite. Model 641 Wattmeter is supplied in flush metal or semi-flush metal cases only. When ordering, specify style and whether metal or bakelite case is desired.

D.c. instruments for use on circuits above 750 volts should be specified with bakelite cases when not possible to connect in grounded side of line.

Dimensions: Metal case,  $4\frac{3}{8}$  inches diameter; bakelite case,  $4\frac{1}{16}$  inches diameter.

Approximate weights: Models 640, 642 and 643,  $1\frac{1}{4}$  pounds; Model 641,  $1\frac{1}{2}$  pounds.

#### Model 643 D.C. Voltmeters

Permanent magnet moving coil type. Sensitivity approximately 100 ohms per volt. All ranges listed are self-contained.

Accurate within 1 per cent. Scale length, 3.34 inches.

Range Volts	Each	Scale Div.	Range Volts	Each	Scale Div.
10	\$19.00	50	80	\$19.00	40
15	19.00	75	100	19.50	50
25	19.00	50	150	20.00	75
50	19.00	50	300	21.50	60

#### Model 643 D.C. Millivoltmeters

Permanent magnet moving coil type. Accurate within 1 per cent. Scale length, 3.34 inches.

Range Milli-volts	Each	Scale Div.	Approx. Resistance Ohms
50	\$19.00	50	2
100	19.00	50	4

#### Model 643 D.C. Ammeters

Permanent magnet moving coil type. Regularly supplied with self-contained shunts up to and including 50 amperes, but can be supplied on special order with external 50 mv. shunts and 8-foot leads. When external shunt instruments are desired, add price of shunt to the instrument price of \$20.

Range Amp.	Each	Scale Div.	Range Amp.	Each	Scale Div.
1	\$19.00	50	25	\$19.00	50
2	19.00	40	30	19.00	60
3	19.00	60	50	19.00	50
5	19.00	50	75	24.50	75
10	19.00	50	100	24.50	50
15	19.00	75	150	24.50	75

#### Model 643 D.C. Milliammeters

Permanent magnet moving coil type. Ranges above 30 milliamperes are shunted and have a drop of approximately 100 millivolts.

Accurate within 1 per cent. Scale length, 3.34 inches.

#### Model 643 D.C. Milliammeters

Range Milli-amp.	Each	Scale Div.	Approx. Resist. Ohms
1	\$19.00	50	48
3	19.00	60	9.9
5	19.00	50	4.6
10	19.00	50	2.8
50	19.00	50	2
100	19.00	50	1
150	19.00	75	0.67
200	19.00	40	0.5
250	19.00	50	0.4

#### Model 643 D.C. Microammeters

Permanent magnet moving coil type. Low resistance microammeters in ranges of 200, 300 and 500 microamperes are listed for special applications. The high resistance instruments are recommended for general use.

Accurate within 1 per cent. Scale length, 3.34 inches.

Range Micro-amp.	Each	Scale Div.	Approx. Resist. Ohms
30	\$29.00	60	2000
50	28.25	50	1200
100	27.50	50	385
200	21.50	40	600
*200	23.00	40	270
500	21.50	50	218
*500	23.00	50	60

\*These instruments are used for applications where low resistance is the first consideration, even at the expense of other performance characteristics.

#### Model 642 A.C. Voltmeters

Movable iron type for use on frequencies from 25 to 133 cycles. For 500 cycle service, add \$6.50 to the prices shown.

Model 642 Instruments for use on circuits above 300 volts should be specified with bakelite cases when not possible to connect in grounded side of line.

Power consumption: 150-volt range at 115 volts, 1.42 watts. At 25 or 60 cycles, 1.42 volt-amperes.

Accurate within 1 per cent. Scale length, 2.8 inches.

Range Volts	Each	Scale Div.	Resist. Ohms
20	\$19.00	40	192
30	19.00	30	360
50	19.00	50	1,000
130	19.75	65	8,100
150	20.00	30	9,400
†250	25.00	25	16,000
†300	25.50	30	19,000
†500	28.50	50	30,600
†600	29.50	60	37,000

†With Type 5 No. 1 External Resistor.

†With Type 5 No. 2 External Resistor.

#### Model 642 A.C. Ammeters

Movable iron type for use on frequencies from 25 to 500 cycles. Normally supplied self-contained up to and including 50 amperes. No extra charge when scaled for use with current transformers. When so ordered, specify scale desired and transformer ratio.

Power consumption: 5-ampere range at 5 amperes, 1.1 watts. At 60 cycles, 1.1 volt amperes.

Accurate within 1 per cent. Scale length, 2.8 inches.

#### Model 642 A.C. Ammeters

Range Amp.	Each	Scale Div.	Range Amp.	Each	Scale Div.
1	\$19.00	50	10	\$19.00	50
2	19.00	40	15	19.00	30
3	19.00	30	25	19.00	25
5	19.00	50	30	19.00	30
7.5	19.00	75	50	19.00	50

#### Model 641 D.C. and Single Phase A.C. Wattmeters

Electrodynamometer type for use on direct current or alternating current at frequencies from 25 to 125 cycles. Instruments are available for 500-cycle service on special order. Model 641 Wattmeters are furnished in flush or semi-flush type, black metal cases only.

Wattmeters may be used with a Y-box on balanced 3-phase, 3-wire circuits. Reactive component on balanced polyphase circuits can also be measured. When ordering, give complete circuit information.

Instruments listed have self-contained current and potential ranges. Higher current ranges require the use of a current transformer. A Type 5 No. 2 resistance box is required for ranges between 251 and 600 volts. Between 601 and 750 volts, a Type 5 No. 3 box is used. Instruments for use on potentials above 750 volts require both current and potential transformers.

Power consumption: potential circuit at 115 volts, 1.96 watts; at 60 cycles, 1.96 volt-amperes. Current circuit at 5 amperes, 0.65 watt; at 60 cycles, 0.68 volt-ampere.

Accurate within 1 per cent. Scale length, 2.8 inches.

Volts	Each	AMPERES Norm. Max.	Scale Watts	Scale Div.
100-150	\$65.00	1 1.5	100	50
100-150	65.00	2 3	200	40
100-150	65.00	2 3	300	30
100-150	60.00	5 7.5	500	50
200-250	68.00	2 3	400	40
100-150	65.00	5 7.5	750	30
100-150	65.00	10 15	1 Kw.	50
100-150	65.00	10 15	1.5 Kw.	30
100-150	65.00	20 30	2 Kw.	40
200-250	63.00	5 7.5	1.5 Kw.	30
200-250	68.00	10 15	3 Kw.	30
200-250	68.00	20 30	4 Kw.	40

#### Model 640 Thermo-Ammeters

Thermocouple type. Ranges listed are self-contained. Similar or higher ranges can be obtained with external heating elements; prices on request. When external elements are ordered specify length of leads desired.

Power consumption; 1 to 4 amperes inclusive varies from 0.2 to 0.4 watt per ampere approximately; 5 amperes and above 0.2 per ampere.

Accurate within 1 per cent. Scale 3.34 inches.

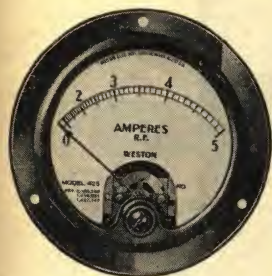
Write for information on the use of these instruments at frequencies in excess of those indicated. When circuit conditions do not permit connecting the instrument in the grounded side of the line, bakelite cases should be specified.

Range Amp.	Each	Scale Div.	Frequency at Which the Frequency Error Does Not Exceed 2% Kilocycles
1	\$25.00	50	30,000
2	25.00	40	10,000
3	25.00	60	7,000
5	25.00	50	4,000
10	25.00	50	2,000
15	25.00	75	2,000
20	25.00	40	2,000
25	25.00	50	1,500



## Weston Panel Instruments

For General Small Panel Requirements  
3 1/4-Inch



Model 425



Model 476

## Model 425

Thermocouple type for a.c. including radio frequencies. Accurate within 2 per cent.

Bakelite cases should be specified for ammeters and milliammeters when used on circuits above 300 volts when it is not possible to connect instrument in grounded side of line. Bakelite case supplied at no additional cost.

## Thermocouple Type Ammeters

Power consumption, 1 to 4 amperes inclusive, varies from .2 to .4 watt per amperes approximately; 5 amperes and above, .15 watt per ampere.

Amperes	1	1.5	2	3	5	10	15	20
Each...	\$14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00

## Thermocouple Milliammeters

Range Milliampere.	*10	*20	*50	120	300	500
Each.....	\$35.00	35.00	35.00	16.00	16.00	16.00
Approx. Resist						
Ohms.....	100	26.5	5	5.2	1.7	1.3

\*Vacuum couple type.

## Galvanometer

Accurate within two scale divisions. For horizontal or 45° mounting. Milliamperes, 115; approximate resistance per volt, 5.2 ohms.....each \$16.00

## Model 476

Movable iron type for a.c. only. Accurate within 2 per cent.

## A.C. Voltmeters

Range Volts	Each	Approx. Ohms per Volt	Range Volts	Each	Approx. Ohms per Volt
1.5	\$9.50	3	50	\$9.50	52
3	9.50	6	100	10.00	110
5	9.50	10.5	130	10.25	110
8	9.50	10.5	150	10.50	110
10	9.50	14	250	11.50	167
15	9.50	14	300	12.00	167
30	9.50	26	500	14.00	167

## A.C. Ammeters

Range Amp.	Each	Approx. Total Resist.	Range Amp.	Each	Approx. Total Resist.
1	\$9.50	.203	10	\$9.50	.0058
1.5	9.50	.082	15	9.50	.00219
2	9.50	.052	20	9.50	.00162
3	9.50	.024	30	9.50	.00070
5	9.50	.010	30	9.50	.00057

## A.C. Milliammeters

Range Milli-amp.	Each	Approx. Total Resist.	Range Milli-amp.	Each	Approx. Total Resist.
15	\$9.50	2300	100	\$9.50	28
25	9.50	650	250	9.50	4.7
50	9.50	175	500	9.50	1.1

## Weston Panel Instruments

Model 301 3 1/2-Inch Instruments  
For General Small Panel Requirements  
D.C. Model



Permanent moving coil type. Accurate within 2 per cent.

**A. C. Model—Rectifier Type**  
High sensitivity a.c. instruments obtained by using a full-wave copper oxide rectifier with a d.c. movement. Accurate within 5 per cent.

## D.C. Voltmeters

Approximate Resistance in Ohms per Volt:  
1 to 30 Volts, 62; 50 to 150 Volts, 200; 200 Volts, 250

All ranges listed are self-contained.

Range Volts	Each	Scale Div.	Range Volts	Each	Scale Div.	Range Volts	Each	Scale Div.
1	\$9.50	50	10	\$9.50	50	100	\$10.00	50
1.5	9.50	75	15	9.50	75	130	10.50	65
3	9.50	60	30	9.50	60	150	10.50	75
5	9.50	50	50	9.50	50	200	11.00	40
8	9.50	40	80	9.50	50	...	.....	..

## Resistance, 1000 Ohms per Volt

5	\$10.00	50	50	\$10.00	50	200	\$11.50	40
8	10.00	40	80	10.00	75	300	12.50	60
10	10.00	50	100	10.50	50	*500	15.50	50
15	10.00	75	150	11.00	75	*800	18.50	75

\*Type W. F. instruments. Self-contained wire wound resistors are hermetically sealed for protection against excessive humidity. Supplied in flush bakelite cases.

## D.C. Ammeters

Self-contained up to 50 amperes inclusive—drop 50 millivolts  $\pm$  5 per cent.

Range	Each	Div.	Range	Each	Div.	Range	Each	Div.
1	\$9.50	50	10	\$9.50	50	10-0-10	\$9.50	40
1.5	9.50	75	15	9.50	75	20-0-20	9.50	40
1	9.50	40	30	9.50	60	30-0-30	9.50	60
3	9.50	60	50	9.50	50	50-0-50	9.50	50
5	9.50	50	5-0-5	9.50	50	.....	.....	..

## D.C. Milliammeters

Milliammeters above 30 milliamperes are shunted—drop approximately 100 millivolts.

1	\$9.50	50	10	\$9.50	50	100	\$9.50	50
1.5	9.50	75	15	9.50	75	150	9.50	75
2	9.50	40	20	9.50	40	200	9.50	40
3	9.50	60	30	9.50	60	300	9.50	60
5	9.50	50	50	9.50	50	500	9.50	50

## D.C. Microammeters

100 \$18.00 50 200 \$12.00 40 500 \$12.00 50  
Adjusted for use in horizontal or 45° position.

## Ohmmeters

These ohmmeters are independent of battery voltage.

Ohm Scale	Each	Battery Voltage	Rheostat Ohms	Ohm Scale	Each	Battery Voltage	Rheostat Ohms
0-1000	\$12.50	1.5	100	0-500000	\$13.50	15	2000
0-10000	12.50	4.5	250	0-2000000	13.50	90	2000
0-100000	13.00	4.5	2000	.....	.....	.....	.....

## Rectifier Type Voltmeters

Range Volts	1000 Ohms per Volt Each	2000 Ohms per Volt Each	Scale Div.	Range Volts	1000 Ohms per Volt Each	2000 Ohms per Volt Each	Scale Div.
1	.....	\$17.00	50	50	\$15.00	\$17.00	50
1.5	.....	17.00	75	100	15.50	17.50	50
3	\$15.00	17.00	60	150	16.00	18.00	75
5	15.00	17.00	50	300	17.50	.....	60
15	15.00	17.00	75	...	.....	.....	..

## Rectifier Type Milliammeters

Milliamperes.....	0.5	1	2	5
Each.....	\$17.00	14.50	14.50	14.50
Scale Divisions.....	50	50	40	50

## Rectifier Type Microammeters

Use in horizontal or 45° positions.

500 Microamperes, 50 Scale Divisions.....each \$17.00

Bakelite cases should be specified for ammeters and milliammeters when used on circuits above 300 volts when it is not possible to connect instrument in grounded side of line. Bakelite case supplied at no additional cost.



## Weston Panel Rectangulars

Models 801 and 861



Model 801

Normally calibrated for use on non-magnetic panels.

Model 801 is supplied in semi-flush, black bakelite case. Features exceptional scale length, readability, and pleasing design. Mounted the same as round panel instruments; it being necessary to drill one round opening for body of instrument, plus four small holes for mounting bolts. Dimensions: height,  $4\frac{1}{4}$  inches; width,  $4\frac{1}{4}$  inches; depth,  $2\frac{1}{4}$  inches; diameter of panel hole,  $3\frac{1}{4}$  inches. Weight, 1 pound.

Model 861 is similar in size to Model 801, except that it projects  $\frac{1}{4}$ -inch more from the panel. It is equipped with a pair of self-contained, miniature base, 6-volt lamps for scale illumination. Lamps are replaceable by removing the instrument front. Dimensions: height,  $4\frac{1}{4}$  inches; width,  $4\frac{1}{4}$  inches; depth,  $2\frac{1}{2}$  inches; diameter of panel hole,  $3\frac{1}{4}$  inches. Weight, 1 pound.

To be used on steel panels, panel thickness must be specified when ordering.

## Models 801 and 861

Permanent magnetic moving coil type.

Accuracy, 2 per cent. Scale, 3.17 inches (80.3 mm.).

## Direct Current Voltmeters

Sensitivity approximately 200 ohms per volt up to and including 200 volts. Higher ranges, 1000 ohms per volt.

Range Amp.	Scale Div.	Model 801 Each	Model 861 Each	Range Amp.	Scale Div.	Model 801 Each	Model 861 Each
1	50	\$14.50	\$19.50	80	40	\$14.50	\$19.50
2	40	14.50	19.50	100	50	15.00	20.00
3	60	14.50	19.50	130	65	15.25	20.25
5	50	14.50	19.50	150	75	15.50	20.50
7.5	75	14.50	19.50	200	40	16.00	21.00
10	50	14.50	19.50	250	50	16.65	21.50
15	75	14.50	19.50	300	60	17.00	22.00
25	50	14.50	19.50	500	50	19.00	24.00
50	50	14.50	19.50	...	...	.....	.....

All ranges listed are self-contained.

## Direct Current Ammeters

Regularly supplied with self-contained shunts up to and including 50 amperes, but can be supplied with external 50 millivolt shunt and 8-foot leads. When external shunt instruments are desired, add price of shunt to the instrument price.

Range Amp.	Scale Div.	Model 801 Each	Model 861 Each	Range Amp.	Scale Div.	Model 801 Each	Model 861 Each
1	50	\$14.50	\$19.50	5	50	\$14.50	\$19.50
1.5	75	14.50	19.50	10	50	14.50	19.50
2	40	14.50	19.50	25	50	14.50	19.50
3	60	14.50	19.50	50	50	14.50	19.50

## Direct Current Milliammeters

Range Amp.	Scale Div.	Approx. Resistance	Model 801 Each	Model 861 Each	Range Amp.	Scale Div.	Approx. Resistance	Model 801 Each	Model 861 Each
1	50	80	\$14.50	\$19.50	50	50	....	\$14.50	\$19.50
3	60	7.3	14.50	19.50	100	50	....	14.50	19.50
5	50	2.4	14.50	19.50	200	40	....	14.50	19.50
10	50	1.25	14.50	19.50	300	60	....	14.50	19.50
25	50	1.0	14.50	19.50	500	50	....	14.50	19.50

Ranges above 25 milliamperes are shunted and have a drop of approximately 100 millivolts.

## Direct Current Microammeters

Range Amp.	Scale Div.	Approx. Resistance	Model 801 Each	Model 861 Each	Range Amp.	Scale Div.	Approx. Resistance	Model 801 Each	Model 861 Each
30	60	1950	\$24.50	\$29.50	200	40	400	\$17.00	\$22.00
50	50	900	23.75	28.75	300	60	175	17.00	22.00
75	75	450	23.75	28.75	500	50	80	17.00	22.00
100	50	1110	23.00	28.00	...	...	...	.....	.....

Low resistance instruments, in ranges above 75 microamperes, are available for special requirements.

## Weston Panel Rectangulars

Models 802, 803, 862, and 863

Models 862 and 863  
Illuminated

Normally calibrated for use on non-magnetic panels.

Models 802 and 803 are supplied in semi-flush, black Bakelite cases. Mounted by drilling one round opening for body of instrument, plus four small holes for mounting bolts. Dimensions:  $4\frac{1}{4} \times 4\frac{1}{4} \times 2\frac{1}{4}$  inches; diameter of panel hole,  $3\frac{1}{4}$  inches. Weight 1 pound.

Models 862 and 863 are similar in size to Models 802 and 803 except that they are equipped with a pair of self-contained, miniature base 6-volt lamps for scale illumination. Dimensions:  $4\frac{1}{4} \times 4\frac{1}{4} \times 2\frac{1}{2}$  inches; diameter of panel hole,  $3\frac{1}{4}$  inches. Weight, 1 pound.

## Models 802 and 862

Permanent magnetic moving coil type.

Accuracy, 2 per cent, scale, 3.17 inches (80.3 mm.).

Rectifier type, alternating current instruments provide a practical means of measuring minute alternating currents.

May be relied upon to within about 5 per cent of full scale value on wave forms closely approximating the sine wave at ordinary room temperatures.

## Alternating Current Rectifier Type Voltmeters

Range Amp.	Scale Div.	Model 802		Model 862	
		1000 Ohms per Volt	2000 Ohms per Volt	1000 Ohms per Volt	2000 Ohms per Volt
1	50	....	\$22.00	....	\$27.00
1.5	75	\$20.00	22.00	\$25.00	27.00
3	60	20.00	22.00	25.00	27.00
5	50	20.00	22.00	25.00	27.00
10	50	20.00	22.00	25.00	27.00
15	75	20.00	22.00	25.00	27.00
50	50	20.00	22.00	25.00	27.00
100	50	20.50	22.50	25.50	27.50
150	75	21.00	23.00	26.00	28.00
300	60	22.50	....	27.50	....

## Alternating Current Rectifier Type Milliammeters

Range Amp.	Scale Div.	Approximate Resistance	Model 802 Each	Model 862 Each
1	50	500	\$19.50	\$24.50
2	40	360	19.50	24.50
5	50	240	19.50	24.50

## Alternating Current Rectifier Type Microammeters

Range	Scale Div.	Approximate Resistance	Model 802 Each	Model 862 Each
100	50	4000	\$28.00	\$33.00
200	40	2100	22.00	27.00
500	50	900	22.00	27.00

## Type 30 VU Meters

Model 802 and 862 VU meters are available with two different scales. Type A scale stresses the level in VU and is largely used in monitoring wire lines. Type B scale stresses per cent use of the transmitter output and is mostly used for broadcast service.

Model 802, Scale A or B.....each \$32.00  
Model 862, Scale A or B.....each 37.00

## Models 803 and 863

## Alternating Current Thermo Ammeters

Thermocouple type. Accurate within 2 per cent. Scale, 3.17 inches (80.3 mm.).

Frequency errors less than 2 per cent up to 65 megacycles.  
Power Consumption: 1 to 4 amperes varies from 0.2 to 0.4-watts per ampere; 5 amperes and above, 0.15-watt per ampere.

Range Amp.	Scale Div.	Model 803 Each	Model 863 Each	Range Amp.	Scale Div.	Model 803 Each	Model 863 Each
1	50	\$19.00	\$24.00	5	50	\$19.00	\$24.00
1.5	75	19.00	24.00	6	60	19.00	24.00
2	40	19.00	24.00	8	40	19.00	24.00
2.5	50	19.00	24.00	10	50	19.00	24.00
3	60	19.00	24.00	15	75	19.00	24.00
4	40	19.00	24.00	20	40	19.00	24.00



## Minerallac Statiscopes

### A Safety Device for the Protection of the Electrical Worker

A glow-tube form of electroscope, encased in hard rubber, that will indicate the presence of potential when held in the changing static field such as is found surrounding: alternating current circuits, pulsating direct current, X-Ray equipment, static from belting, high frequency, condenser discharges, automobile ignition, etc.

#### Pocket Type



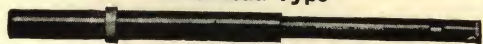
The pocket type is intended for all around testing where a sensitive instrument is desired and is specially adapted for use on underground cable work. It is designed to give positive indication on 2000 volts and up in contact with the outside of conductor insulation and at a point several times the flashover distance on non-insulated conductors.

It is understood that materials which destroy or absorb the static field such as the lead on underground cables, metal switch cabinets, grounded framework, etc. should not be between any of the instruments and the conductor being tested.

With this instrument, it is not necessary to touch the conductor carrying high potential.

Each..... \$4.50

#### Overhead Type



#### Overhead Type, Extended

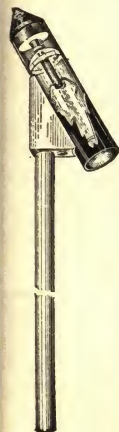
The overhead type is a less sensitive instrument, which makes it specially adaptable for overhead lines. It is furnished with a telescopic cover which makes it suitable for direct contact up to and including 2300 volts, when held in the operator's hands.

The red fiber ring is placed on the cover to indicate the handle portion of the instrument.

When closed, this statiscopes is 7 1/8 inches long and 3/4 inch in diameter; when extended, it is 12 inches long.

Each..... \$8.00

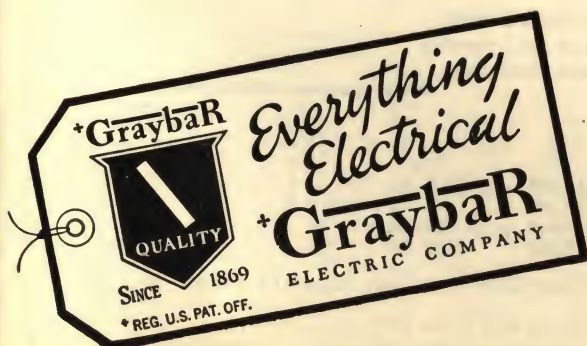
## Brach Safe-T-Glow High Tension Detectors



Safe-T-Glow consists of a sensitive Neon tube mounted on cushion supports, the light of this tube being amplified by a mirror reflector. It is sensitive to the presence of high tension current and will start to glow at 2000 volts when exposed terminal is held in contact with high tension wire. With increased voltage the tube will glow at varying distances away from the wire, depending on the voltage.

Model A, with 3-Foot Handle, for Circuits 2000 to 35000 Volts.....each .....

Model B, Same as Model A except with 9-Foot Handle, for Circuits from 45000 to 220000 Volts.....each .....



## Test-O-Lites



The Test-O-Lite contains two electrodes in a neon gas filled bulb, each of which is connected in series with a suitable protecting resistor.

It will indicate voltage—a dim glow is shown when testing 110 volts, and on higher voltages up to 550 volts the glow is brighter in proportion.

Indicates whether a.c. or d.c. If a.c. both electrodes will glow, and if d.c. only one will glow and at the same time indicate the negative pole of the circuit.

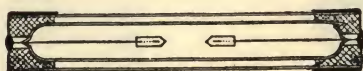
Detects the live and ground wires. One can test whether a conductor has tension against ground or not by touching one of the leads with the hand.

Tests resistance leaks. Can be used as a pilot light if connected permanently to any circuit.

Furnished in a bakelite casing. Is no bigger than a fountain pen.

Each..... \$9.95

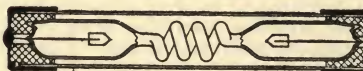
## Brach Fixed Neon High Voltage Indicators



TYPE "R"



TYPE "RC"



TYPE "RS"

Consists of a sensitive Neon tube enclosed in a glass protecting case with metal ferrules on each end connected to electrodes of the tube.

Designed for permanent installation. With sufficiently high voltage indicator will give an indication if only one end is attached to line.

Greater brilliance is obtained if a plate or other metal is attached to free end giving greater capacity to electrodes.

Wherever practical the indicator may be placed directly across a high voltage line, provided sufficient resistance is placed in series with tube to limit current to only a few milliamps. Another type of indicator has been developed recently for use across a line (or from line to ground) with a suitable resistance in series.

Also furnished when specified, at \$1.00 extra, with metal strap arranged to act as condenser plate and support one end of tube.

**Type R.**—Neon tube is a straight tube with electrodes about 3/4-inch apart. Will give an indication on 500 volts.

**Type R.**.....each \$3.30

**Type RC.**—Neon tube is straight but has a constriction between electrodes. Will give an indication on 500 volts.

**Type RC.**.....each \$3.72

**Type RS.**—Neon tube is of small bore tubing wound into a spiral. This type gives more illumination than Types R and RC when voltage is sufficiently high to operate same. Requires about 3000 volts for an indication.

**Type RS.**.....each \$4.86

## No. 5000 Square D Voltage Testers

This voltage tester operates on a.c. or d.c., indicating the voltage of either.

It is used for 110 to 600 volts.

Tester does not require lamps; easily carried in pocket.

Sharp points on end of long rubber covered leads permits piercing insulation without damaging it.

Insulation is armored at entrance to case to prevent breakage.



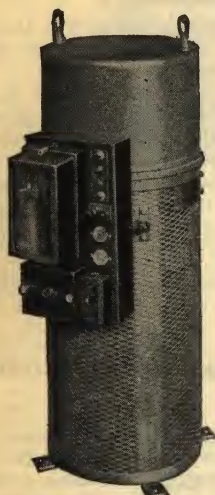
No. 5000 Voltage Tester.....each \$18.00  
No. 5002 Voltage Tester Case.....each 2.00



## G-E Type AIRS Induction Voltage Regulators

For Indoor Service

Single Phase, 60 Cycles, Air-Cooled



Large Automatic



Small Hand Operated



Small Motor Operated

This is an indoor-type, natural-draft, air-cooled induction voltage regulator for secondary circuit regulation and for testing and industrial service.

Automatic regulators can be used where lighting and power are both supplied from the same source; the regulator will maintain illumination at correct levels by compensating for voltage drop caused by changes in lighting loads, or changes in load on the power feeders.

Hand operated or manually controlled motor operated regulators can be used wherever a convenient source of variable voltage is required for various industrial processes.

For complete information, ask for Bulletin GEA-3057.

For Secondary Circuit Regulation  
Continuous Rated, Automatically Operated  
10% Raise and 10% Lower Regulation

120 Volts					480 Volts				
No.	Each	KVA. Cont. 55°C. Rise	Load Amp. at ±10% Regulation	Ship. Wt. Lb.	No.	Each	KVA. Cont. 55°C. Rise	Load Amp. at ±10% Regulation	Ship. Wt. Lb.
73X766	\$588.00	1.2	100	*150	73X778	\$588.00	1.2	25	*150
73X767	656.00	2.4	200	*170	73X779	656.00	2.4	50	*170
73X768	722.00	3.6	300	*250	73X780	1440.00	4.8	100	530
73X769	1494.00	6	500	530	73X781	1550.00	7.2	150	695
73X770	1632.00	9	750	695	73X782	1660.00	9.6	200	860
73X771	1770.00	12	1000	860	73X783	1770.00	12	250	860
†240 Volts—5/10%; or 240/120 Volts, 3-Wire—10%									
73X772	\$588.00	1.2	50/ 50	*150	600 Volts				
73X773	656.00	2.4	100/100	*170	73X784	\$606.00	1.5	25	*150
73X774	722.00	3.6	150/150	*250	73X785	690.00	3	50	*205
73X775	1494.00	6	250/250	530	73X786	1494.00	6	100	530
73X776	1632.00	9	375/375	695	73X787	1632.00	9	150	695
73X777	1770.00	12	500/500	860	73X788	1770.00	12	200	860

Any of the above regulators can be supplied equipped for line-drop compensation at a price addition of \$132. each.

For Testing and Industrial Service  
Rated for Intermittent (1 Hr.) Service  
100% Raise and 100% Lower Regulation

Hand Operated—120/240 Volts						Motor Operated—120/240 Volts					
No.	Each	KVA. Cont. 55°C. Rise	LOAD AMP. At ±100% REGULATION		Ship. Wt. Lb.	No.	Each	KVA. Cont. 55°C. Rise	LOAD AMP. At ±100% REGULATION		Ship. Wt. Lb.
			120 V.	240 V.					120 V.	240 V.	
73X762	\$284.00	2.4	20	10	140	73X804	\$326.00	2.4	20	10	150
73X763	334.00	4.2	35	17.5	195	73X805	376.00	4.2	35	17.5	205
73X764	386.00	6	50	25	240	73X806	428.00	6	50	25	250
73X765	1082.00	12	100	50	620	73X807	1190.00	12	100	50	670

\*Weights do not include control panel, which is separately mounted. Shipping weight of control panel is 30 pounds.

†These regulators have 2 series windings, each of which will carry 50% of the rated kva.

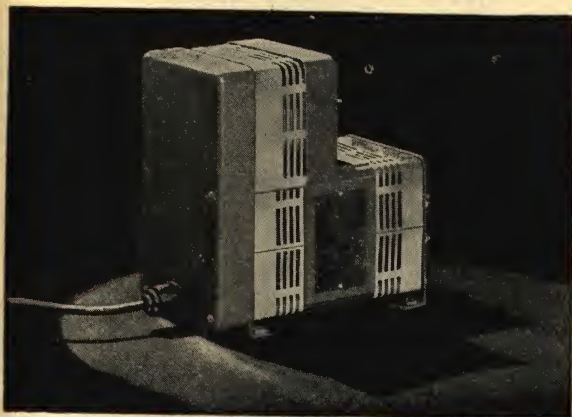
‡Require an extra potential transformer for the contact-making volt-meter. For 480-volt regulators, standard potential transformer No. 86X773 can be supplied at \$34. each. For 600-volt regulators, standard potential transformer No. 86X774 can be supplied at \$35. each.



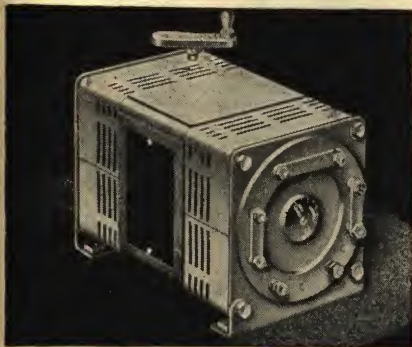
### G-E Inductrols

#### Small Dry-Type, Induction Voltage Regulators for Indoor Service

Single Phase, 60 Cycles, Air-Cooled



Automatically Operated Inductrol



Hand Operated Inductrol

These inductrols are for use in industrial and electronic applications. Automatically operated where voltage or current is to be maintained within narrow limits; hand operated where a source of smoothly variable voltage or current is required.

Because of their excellent appearance, great mechanical strength, light weight, and small size, these sturdy inductrols are well suited for use in factories, laboratories, and schools, as well as for hundreds of built-in applications and others which include motor speed control, heat control, illumination control, dielectric testing, rectifier control, calibrating instruments, and compensating voltages.

For complete information, ask for Bulletin GEA-4508.

#### Automatically Operated 120 Volts

Volt. Amp. Cont. 55°C. Rise	RAISE AND LOWER REGULATION				*Approx. Ship. Wt. Lb.	No.	†Each
	Per Cent	Amp.	Per Cent	Amp.			
300	10	25	...	...	54	31D340	\$410.
300	15	16.7	...	...	54	31D341	410.
600	10	50	...	...	71	31D342	427.
600	15	33.4	...	...	71	31D343	427.
<b>240 Volts</b>							
300	10	12.5	5	25	54	31D344	\$410.
300	15	8.3	7.5	16.7	54	31D345	410.
600	10	25	5	50	71	31D346	427.
600	15	16.7	7.5	33.4	71	31D347	427.

#### Hand Operated 120-240 Volts

Volt-Amp. Cont. 55°C. Rise	Con- nected (Volts) for Rise	RAISE AND LOWER REGULATION				*Approx. Ship. Wt. Lb.	No.	Each
		Per Cent	Amp.	Per Cent	Amp.			
300	120	20	12.5	10	25	40	31D300	\$106.
	240	10	12.5	5	25			
300	120	30	8.3	15	16.5	40	31D301	106.
	240	15	8.3	7.5	16.6			
600	120	20	25	10	50	58	31D302	123.
	240	10	25	5	50			
600	120	30	16.7	15	33.4	58	31D303	123.
	240	15	16.7	7.5	33.4			
1200	120	\$200	5	100	10	58	31D304	123.
	240	100	5	50	10			

\*Weights do not include control panel, which is mounted separately from the regulator. Control panel weights are: ship., 30 lb.; net, 25 lb. †Prices include control panel. ‡Rated for intermittent (1 hour) service. §200 per cent raise and 100 per cent lower regulation.

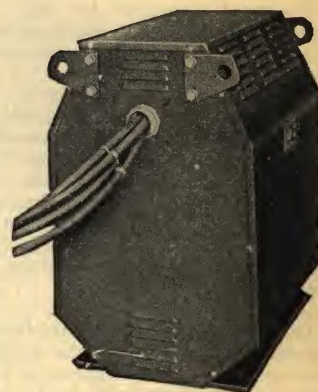
### G-E Dry-Type Transformers

Type M—For Indoor and Outdoor Service

Type D—For Indoor Service Only



Type M



Type D

G-E dry-type transformers have a wide range of applications on circuits 600 volts and below. Such applications include supplying the proper voltage for special lamps, tools, bells, buzzers, airport lights, brazing, welding, testing and industrial heating equipment. They are also used for insulating circuits to promote safety, operating lights and portable tools from power circuits, boosting voltage, phase changing and many other applications.

In transformers rated 10 kva. and below, as well as auto-transformers of equivalent physical size, the Type M construction is used. It forms a solid, compact unit which dissipates heat from its external surfaces by radiation. In the larger sizes, the Type D, natural-draft construction is used. The transformer is effectively cooled by air currents which enter ventilating louvers in the housing and circulate around the core and coils.

These transformers are built in standard ratings up to 100 kva. and 600 volts, 60 cycles. Special transformers, up to 200 kva. for 60-cycle circuits, are built from an extensive line of standardized parts, economically and for quick delivery. They are applicable to circuits of 600 volts and below.

**Type M** transformers include a built-in junction box designed for conduit connection or for open wiring. For conduit connection, knockouts are provided in the sides, end, and back of the compartment. For open wiring, a fiber bushing is used in place of the bottom cover of the compartment.

**Type D** transformers have leads brought out for open wiring, through bushed holes in the side plates. For enclosed wiring, conduits can be run directly into these side plates, or when desired, 90-degree conduit outlets may be used.

Type D transformers are normally arranged for floor mounting, but when desired they can be wall mounted by the use of angle iron brackets.

Send for Bulletin GEA-897 for complete description.

G-E also has available a complete line of dry-type distribution transformers for primary circuits of 2400 to 13,200 volts, in sizes 1.5 to 500 kva. inclusive.

Send for Bulletin GEA-3714 for complete information.



## G-E Type M Sign-Lighting Transformers

For 11½ or 23-Volt Applications  
For Indoor or Outdoor Service

Single Phase, 60 Cycles, Air-Cooled  
Primary 110/220—115/230—120/240 Volts  
Secondary 11/22—11½/23—12/24 Volts

Designed primarily for sign lighting. As these transformers are compact, light in weight, and weatherproof, they can be mounted in any convenient location, such as the back of the sign.

These transformers have a wide range of application, because both the primary and secondary windings are arranged for series-multiple connections. They may be connected as a transformer with the secondary supplying 11½ or 23 volts, 2-wire, or 23/11½ volts, 3-wire; also as an autotransformer to deliver 126½ or 138 volts from a 115-volt supply, or 241½ or 253 volts from a 230-volt supply. Two or more units may be used in various combinations to obtain many other special voltages.

One of the many special applications is pipe thawing. Two transformers are used, the primaries being connected in multiple and the secondaries in series to give 46 volts. This gives sufficient capacity for thawing pipes up to 2-inch diameter. The current can be controlled to some extent by looping the secondary cables.

No.	Each	KVA. Output Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
61G69	\$25.00	.250	4⅞	4⅞x8½	18
61G70	35.00	.500	4⅞	4⅞x10⅞	26
61G71	44.00	.750	4⅞	4⅞x12⅞	37
61G172	53.00	1	6⅜	6⅜x11⅞	45
61G173	66.00	1.5	6⅜	6⅜x12⅞	56
61G174	79.00	2	6⅜	6⅜x13⅞	67
61G75	106.00	3	7¾	8¾x18⅞	108
61G76	155.00	5	7¾	8¾x19⅞	168

## G-E Type M Service Transformers

To Supply or Insulate 115 or 230-Volt Circuits

Single Phase, 60 Cycles, Air-Cooled

For Indoor or Outdoor Service

For Oil Well, Mine and Pump-House Service



These transformers are designed especially to be used at the end of long lines such as are generally used to supply oil well, mine and pump-house service. Because of the wide voltage variation likely to be encountered at such locations, these transformers are designed to operate satisfactorily from 440 to 525 volts and may be used on either a 50 or 60-cycle circuit. The secondary voltages will vary accordingly. They are arranged to be connected directly into a conduit system and are supplied with ¾-inch pipe nipples and 12-inch leads as shown in illustration.

Primary 440—525 Volts  
Secondary 110—131 Volts

No.	Each	KVA. Output Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
61G189	\$27.00	.100	4⅜	4⅞x7⅞	14
61G190	30.00	.250	4⅜	4⅞x8⅞	19
61G191	41.00	.500	4⅜	4⅞x10	29

Suitable also for 50-cycle operation.

## G-E Service Transformers

To Supply or Insulate 115 or 230-Volt Circuits

Single Phase, 60 Cycles, Air-Cooled

Type M—For Indoor or Outdoor Service  
For General Light and Power Service

These transformers are designed to reduce the voltage of 230, 460, or 575-volt power circuits to either 115 or 230 volts for supplying lights and other equipment. Some of the ratings are also suitable for insulating one circuit from another without change in voltage. In addition to the many single-phase applications, they can be used in banks on polyphase circuits.

The classification "service" is applied to transformers used to supply a standard utilization voltage from another standard utilization voltage.

Primary 220-230-240 Volts  
Secondary 110-115-120 Volts  
KVA. Output

No.	Each	Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
71G18	\$6.43	.025	2⅞	2⅞x5⅞	3¼
71G19	8.06	.050	2⅞	2⅞x6	5
71G20	9.13	.075	3⅞	3⅞x5⅞	5¾
71G21	9.84	.100	3⅞	3⅞x6¼	7
71G22	10.71	.150	3⅞	3⅞x6⅞	8½
71G23	11.32	.200	3⅞	3⅞x7¾	11
61G5	22.00	.250	4⅞	4⅞x8⅞	17
61G6	31.00	.500	4⅞	4⅞x10⅞	25

Primary 110/220-115/230-120/240 Volts  
Secondary 110/220-115/230-120/240 Volts

No.	Each	Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
76G108	\$50.00	1	6⅜	6⅜x11⅞	45
76G109	61.00	1.5	6⅜	6⅜x12⅞	55
76G110	74.00	2	6⅜	6⅜x13⅞	67
61G11	100.00	3	7¾	8¾x18⅞	108
61G12	145.00	5	7¾	8¾x21⅞	160
61G13	200.00	7.5	9⅞	11⅞x22⅞	265
61G14	250.00	10	9⅞	11⅞x25¼	340
*60G601	348.00	15	24½	13⅞x21⅞	425

Primary 440-460-480 Volts  
Secondary 110-115-120 Volts

No.	Each	Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
71G24	\$6.43	.025	2⅞	2⅞x5⅞	3¼
71G25	8.06	.050	2⅞	2⅞x6	5
71G26	9.13	.075	3⅞	3⅞x5⅞	5¾
71G27	9.84	.100	3⅞	3⅞x6¼	7
71G28	10.71	.150	3⅞	3⅞x6⅞	8½
71G29	11.32	.200	3⅞	3⅞x7¾	11
61G19	22.00	.250	4⅞	4⅞x8⅞	17
61G20	31.00	.500	4⅞	4⅞x10⅞	25

Primary 220/440-230/460-240/480 Volts  
Secondary 110/220-115/230-120/240 Volts

No.	Each	Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
76G129	\$50.00	1	6⅜	6⅜x11⅞	45
76G130	61.00	1.5	6⅜	6⅜x12⅞	55
76G131	74.00	2	6⅜	6⅜x13⅞	67
61G32	100.00	3	7¾	8¾x18⅞	108
61G33	145.00	5	7¾	8¾x21⅞	160
61G34	200.00	7.5	9⅞	11⅞x22⅞	265
61G35	250.00	10	9⅞	11⅞x25¼	340

Primary 550-575-600 Volts  
Secondary 110-115-120 Volts

No.	Each	Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
71G36	\$6.93	.025	2⅞	2⅞x5⅞	3¼
71G37	8.69	.050	2⅞	2⅞x6	5
71G38	9.85	.075	3⅞	3⅞x5⅞	5¾
71G39	10.62	.100	3⅞	3⅞x6¼	7
71G40	11.55	.150	3⅞	3⅞x6⅞	8½
71G41	12.21	.200	3⅞	3⅞x7¾	11
61G40	24.00	.250	4⅞	4⅞x8⅞	17
61G41	33.00	.500	4⅞	4⅞x10⅞	25

Primary 550-575-600 Volts  
Secondary 110/220-115/230-120/240 Volts

No.	Each	Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
76G150	\$52.00	1	6⅜	6⅜x11⅞	45
76G151	64.00	1.5	6⅜	6⅜x12⅞	53
76G153	78.00	2	6⅜	6⅜x14⅞	67
61G53	104.00	3	7¾	8¾x18⅞	108
61G54	152.00	5	7¾	8¾x21⅞	160
61G55	210.00	7.5	9⅞	11⅞x22⅞	265
61G56	262.00	10	9⅞	11⅞x23⅞	340
60G609	364.00	15	24½	13⅞x21⅞	425

## Type D—For Indoor Service Only

Primary 220/440-230/460-240/480 Volts

No.	Each	Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
60G605	\$348.00	15	24½	13⅞x21⅞	425
60G606	536.00	25	24½	15⅞x21⅞	565
60G607	685.00	37.5	29¼	17⅞x23⅞	750
60G608	825.00	50	29¼	19⅞x23⅞	890

\*Type D—for indoor service only.



**G-E Type M Service Autotransformers**

To Supply 115 and 230-Volt Circuits  
For Indoor or Outdoor Service  
For General Light and Power Service

Single Phase, 60 Cycles, Dry Type  
Primary 220—230—240 Volts  
Secondary 110—115—120—2-Wire or 220/110—233/115—  
240/120 Volts—3-Wire

Autotransformers are more economical and smaller than a transformer designed to carry the same load. Within their voltage limitations, they will perform the same function as service transformers with the exception of insulating two circuits. They may be used to obtain 115 volts from a 230-volt circuit, to derive a neutral on a 230-volt, 2-wire circuit, or to balance a 115/230-volt, 3-wire circuit. They also may be used in banks on polyphase circuits.

In ordering autotransformers, care should be exercised so that the installation will meet local electrical inspectors' requirements.

Cat. No.	Each	Kva. Output Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
64G2	\$22.00	.500	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 8 $\frac{3}{8}$	17
64G3	27.00	.750	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 9 $\frac{5}{8}$	23
64G4	31.00	1	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 10 $\frac{5}{8}$	27
65G5	39.00	1.5	6 $\frac{3}{16}$	6 $\frac{7}{8}$ x 10 $\frac{13}{16}$	39
65G6	47.00	2	6 $\frac{3}{16}$	6 $\frac{7}{8}$ x 11 $\frac{5}{16}$	47
65G7	58.00	3	6 $\frac{3}{16}$	6 $\frac{7}{8}$ x 12 $\frac{1}{2}$	60
64G8	82.00	5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 18 $\frac{1}{4}$	103
64G9	110.00	7.5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 20	127
64G10	137.00	10	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 20 $\frac{1}{4}$	205
64G11	189.00	15	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 22 $\frac{1}{2}$	255
77G592	282.00	25	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 27 $\frac{1}{2}$	390

**G-E Type M Dry-Type Transformers**

For 32-Volt Applications  
For Indoor or Outdoor Service

Single Phase, 60 Cycles  
Primary 110/220—115/230—120/240 Volts  
Secondary 30.6—32—33.4 Volts

These transformers derive 32-volt circuits from 115 or 230-volt lighting or power circuits; 32-volt portable lamps and portable tools are frequently used in mines, steel plants, meat packing plants, and in damp locations to prevent injury in case of accidental grounding of the circuit through the operator's body. The 32-volt lamps are often more economical and have longer life than those rated at higher voltages.

These transformers can also be used as autotransformers to boost the voltage of circuits. When so connected, the kva. output of each transformer will equal the kva. output

listed below, multiplied by  $\left(\frac{H.V.}{H.V.-L.V.}\right)$  and the kva. output of a 3-phase bank will be three times that of each unit.

Cat. No.	Each	Kva. Output Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
61G59	\$24.00	.250	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 8 $\frac{1}{2}$	17
61G60	34.00	.500	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 10 $\frac{3}{8}$	26
61G61	43.00	.750	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 12 $\frac{5}{8}$	36
76G162	52.00	1	6 $\frac{3}{16}$	6 $\frac{7}{8}$ x 11 $\frac{5}{16}$	45
76G163	64.00	1.5	6 $\frac{3}{16}$	6 $\frac{7}{8}$ x 12 $\frac{1}{2}$	56
76G164	77.00	2	6 $\frac{3}{16}$	6 $\frac{7}{8}$ x 13 $\frac{1}{2}$	67
61G65	103.00	3	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 18 $\frac{1}{4}$	108
61G66	151.00	5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 21 $\frac{1}{2}$	158

**G-E Transformers and Auto Transformers for Phase Changing**

Dry Type, 3 to 2, or 2 to 3-Phase, 60 Cycles

Type M—For Indoor or Outdoor Service

Type D—For Indoor Service Only

Phase-changing transformers and autotransformers are primarily of use when a phase change is made on a distribution system. They permit the economical use of motors and other polyphase equipment which would otherwise become obsolete.

The two lines of autotransformers are not interchangeable and it is necessary to determine whether the 2-phase circuit is 3-wire or 4-wire in order to select the proper unit. These autotransformers cannot be used on a 4-wire circuit having the mid-points of the two phases connected. For this application, the 2-winding transformer is recommended, although especially designed autotransformers can be furnished.

**Types M and D Transformers**

3-Phase—220-230-240 Volts

2-Phase—220-230-240 Volts

**Type M Transformers, 3 to 2-Phase, 3 or 4 Wire**

No.	Each	KVA. Output Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
61G77	\$76.00	1	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 18 $\frac{7}{8}$	57
61G78	141.00	3	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 24 $\frac{1}{2}$	115
61G79	188.00	5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 29 $\frac{1}{2}$	195
61G80	246.00	7.5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 32 $\frac{3}{4}$	250
61G81	303.00	10	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 32 $\frac{3}{8}$	330
63G82	411.00	15	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 38 $\frac{3}{8}$	490
*75G13	615.00	25	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 28 $\frac{3}{4}$	820

**Type D Transformers, 3 to 2-Phase, 3 or 4-Wire**

No.	Each	KVA. Output Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
63G14	\$846.00	37.5	†30	†20x36	850
63G15	1074.00	50	†30	†22x40	1050

**Type M Autotransformers, 3 to 2-Phase, 4-Wire**

No.	Each	KVA. Output Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
64G43	\$40.00	1	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 12 $\frac{3}{8}$	23
64G44	64.00	3	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 15 $\frac{3}{8}$	37
64G45	79.00	5	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 19 $\frac{1}{4}$	57
64G46	97.00	7.5	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 20 $\frac{9}{16}$	67
64G47	113.00	10	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 21 $\frac{5}{16}$	82
64G48	144.00	15	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 24 $\frac{5}{16}$	127
64G49	194.00	25	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 29 $\frac{1}{8}$	180
64G50	258.00	37.5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 33 $\frac{1}{8}$	260
65G675	316.00	50	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 33 $\frac{3}{8}$	380

**Type M Autotransformers, 3 to 2-Phase, 3-Wire**

No.	Each	KVA. Output Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
64G52	\$44.00	1	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 12 $\frac{7}{8}$	25
64G53	70.00	3	4 $\frac{9}{16}$	4 $\frac{7}{8}$ x 16 $\frac{7}{8}$	45
64G54	90.00	5	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 19 $\frac{1}{2}$	58
64G55	111.00	7.5	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 22 $\frac{1}{16}$	83
64G56	134.00	10	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 23 $\frac{1}{16}$	100
64G57	167.00	15	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 27	140
64G58	235.00	25	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 31 $\frac{1}{16}$	200
64G59	314.00	37.5	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 32 $\frac{1}{8}$	320
65G676	387.00	50	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 35 $\frac{3}{8}$	415

\*Separate main and teaser (weight per bank, dimensions per unit).

†Height.

‡Floor space.

§Care should be exercised in ordering autotransformers so that the installation will meet local electrical inspectors' requirements.

**Wall Brackets for Type D Transformers**

Wall Hanger Cat. No.	Each	For Transformer Kva.	Ship. Wt. Lb.
5097900G1	..*	15	15 $\frac{1}{2}$
5097900G2	..*	25	17
5097901G1	\$5.00	37.5	26
5097901G2	5.00	50	27

**Standard Conduit Outlets for Type D Transformers**

Cat. No.	Each	Conduit Size, In.	Dimensions Inches	Ship. Wt. Lb.
2105285G1	\$2.00	1 $\frac{1}{2}$	5 $\frac{3}{8}$ x 4 $\frac{7}{8}$ x 4 $\frac{3}{4}$	3 $\frac{3}{4}$
2105286G1	2.00	2	6 $\frac{1}{2}$ x 5 $\frac{3}{4}$ x 5 $\frac{3}{8}$	4 $\frac{3}{4}$

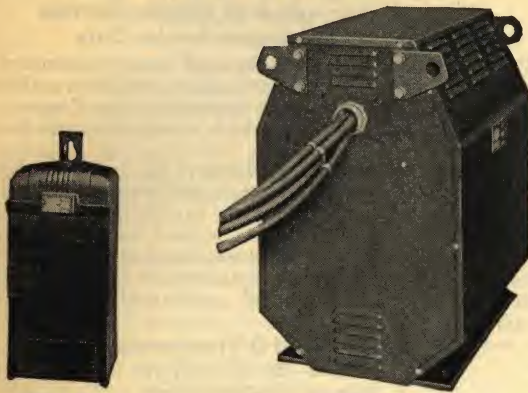
\*No charge.



## G-E Types M and D Dry-Type Distribution Transformers

Single Phase, 60 Cycles, Air-Cooled

For 2400/4160Y-Volt Circuits



Type M

Type D

APPLICATION.—For indoor service in locations where conditions of dust or moisture are not abnormally severe, and where ventilation is not too restricted. They do not require fireproof vaults, and hence can be installed close to the load center, eliminating long and costly runs of secondary copper, and improving voltage conditions at the load. All sizes designed for completely metal enclosed connections, eliminating all exposed live parts.

Kva. Incl.	Low Voltage Rating	Low Voltage Leads Can Be Connected for
1½-75	120/240	120 2-Wire, 240 2-Wire, or 240/120 3-Wire
100-200	120/240	
250-500	240/120	240 2-Wire, or 240/120 3-Wire
1½-75	240/480	240 2-Wire, 480 2-Wire, or 480/240 3-Wire
100-200	240/480	
250-500	240/480	240 2-Wire, or 480 2-Wire
1½-75	600	600 2-Wire
100-500	600	

SERVICE.—Suitable for indoor installation only.

Name Plate Voltage Ratings:  
 Line No. 1—2400/4160Y to 120/240  
 Line No. 2—2400/4160Y to 240/480  
 Line No. 3—2400/4160Y to 600

Line No. 1 No.	Line No. 2 No.	Line No. 3 No.	Kva., Cont. 80°C. Rise	Type	Approx. Ship. Wt., Lb.
78G45	78G50	78G55	1.5	M	60
78G46	78G51	78G56	3	M	108
78G47	78G52	78G57	5	M	145
78G48	78G53	78G58	7.5	M	200
78G49	78G54	78G59	10	M	305
75G430	.....	.....	15	D	310
75G431	.....	.....	25	D	350
75G432	.....	.....	37.5	D	580
75G433	.....	.....	50	D	680

Name Plate Voltage Ratings:

Line No. 1—2400/4160Y to 120/240 to 240/120. (4) 2½ Per Cent Taps Below 2400 Volts

Line No. 2—2400/4160Y to 240/480 to 480/240. (2) 2½ Per Cent Rated Kva. Above and (2) 2½ Per Cent Rated Kva. Below 2400 Volts

Line No. 3—2400/4160Y to 600. (2) 2½ Per Cent Rated Kva. Above and (2) 2½ Per Cent Rated Kva. Below 2400 Volts

Line No. 1 No.	Line No. 2 No.	Line No. 3 No.	Kva., Cont. 80°C. Rise	Type	Approx. Ship. Wt., Lb.
75G434	75G445	75G456	15	D	310
75G435	75G446	75G457	25	D	350
75G436	75G447	75G458	37.5	D	580
75G437	75G448	75G459	50	D	680
75G438	75G449	75G460	75	D	815
29H309	29H315	29H321	100	ND	2000
29H310	29H316	29H322	150	ND	2300
29H311	29H317	29H323	200	ND	2800
29H312	29H318	29H324	250	ND	3050
29H313	29H319	29H325	333	ND	3800
29H314	29H320	29H326	500	ND	4900

## For 4160-Volt Circuits

APPLICATION.—For indoor service in locations where conditions of dust or moisture are not abnormally severe, and where ventilation is not too restricted. They do not require fireproof vaults, hence can be installed close to the load center, eliminating long and costly runs of secondary copper, and improving voltage conditions at the load. All sizes designed for completely metal enclosed connections, eliminating all exposed live parts.

Continued

## For 4160-Volt Circuits (Con't.)

Kva. Incl.	Low Voltage Rating	Low Voltage Leads Can Be Connected for
1½-75	120/240	120 2-Wire, 240 2-Wire, or 240/120 3-Wire
100-200	120/240	
250-500	240/120	240 2-Wire, or 240/120 3-Wire

SERVICE.—Suitable for indoor installation only.

Name Plate Voltage Ratings:

Line No. 1—4160 to 120/240 (No Taps)  
 Line No. 2—4160 to 120/240 (4) 2½ Per Cent Rated Kva. Below 4160 Volts

Line No. 1 No.	Line No. 2 No.	Kva., Cont. 80°C. Rise	Type	Approx. Ship. Wt., Lb.
78G72	.....	1.5	M	80
78G73	.....	3	M	128
78G74	.....	5	M	170
78G75	.....	7.5	M	300
78G76	.....	10	M	350
78G151	78G77	15	D	360
.....	75G673	25	D	385
.....	75G674	37.5	D	625
.....	75G675	50	D	725
.....	75G676	75	D	855
.....	29H327	100	ND	2100
.....	29H328	150	ND	2500
.....	29H329	200	ND	2900
.....	29H330	250	ND	3250
.....	29H331	333	ND	4050
.....	29H332	500	ND	5000

## For 4800-Volt Circuits

APPLICATION.—For indoor service in locations where conditions of dust or moisture are not abnormally severe, and where ventilation is not too restricted. They do not require fireproof vaults, and hence can be installed close to the load center, eliminating long and costly runs of secondary copper, and improving voltage conditions at the load. All sizes designed for completely metal enclosed connections, eliminating all exposed live parts.

Kva. Incl.	Low Voltage Rating	Low Voltage Leads Can Be Connected for
1½-75	120/240	120 2-Wire, 240 2-Wire, or 240/120 3-Wire
100-200	120/240	
250-500	240/120	240 2-Wire, or 240/120 3-Wire
1½-75	240/480	240 2-Wire, 480 2-Wire, or 480/240 3-Wire
100-200	240/480	
250-500	240/480	240 2-Wire, or 480 2-Wire
1½-75	600	600 2-Wire
100-500	600	

SERVICE.—Suitable for indoor installation only.

Name Plate Voltage Ratings:

Line No. 1—4800 to 120/240  
 Line No. 2—4800 to 240/480  
 Line No. 3—4800 to 600

Line No. 1 No.	Line No. 2 No.	Line No. 3 No.	Kva., Cont. 80°C. Rise	Type	Approx. Ship. Wt., Lb.
78G78	78G85	78G91	1.5	M	80
78G79	78G86	78G92	3	M	128
78G80	78G87	78G93	5	M	175
78G81	78G88	78G94	7.5	M	305
78G82	78G89	78G95	10	M	355
78G83	.....	.....	15	D	375
75G683	.....	.....	25	D	385
75G684	.....	.....	37.5	D	625
75G685	.....	.....	50	D	725

Name Plate Voltage Ratings:

Line No. 1—4800 to 120/240. (4) 2½ Rated Kva. Below 4800 Volts

Line No. 2—4800 to 240/480

Line No. 3—4800 to 600

Lines 2 and 3—(2) 2½ Rated Kva. Above and (2) 2½ Per Cent Rated Kva. Below 4800 Volts

Line No. 1 No.	Line No. 2 No.	Line No. 3 No.	Kva., Cont. 80°C. Rise	Type	Approx. Ship. Wt., Lb.
78G84	78G90	78G96	15	D	360
75G686	75G696	75G706	25	D	380
75G687	75G697	75G707	37.5	D	625
75G688	75G698	75G708	50	D	725
75G689	75G699	75G709	75	D	855
29H333	29H339	29H345	100	ND	2100
29H334	29H340	29H346	150	ND	2500
29H335	29H341	29H347	200	ND	2900
29H336	29H342	29H348	250	ND	3250
29H337	29H343	29H349	333	ND	4050
29H338	29H344	29H350	500	ND	5000



## G-E Type HS Oil-Immersed Distribution Transformers

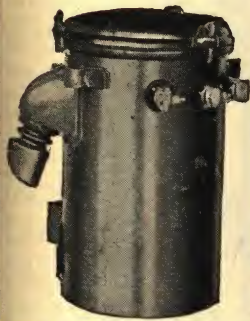
## Single Phase, 60 Cycles, Self-Cooled

The G-E Type HS distribution transformer offers the highest degree of service reliability, backed by careful attention to all details of manufacture, including the selection and preparation of the raw materials used, the adoption of the most progressive manufacturing processes, and the constant improvement of transformer design.

Among the most recent of these improvements is the wound-core construction, identified by the G-E trade-mark Spirakore.

This new design, now furnished on all sizes, results in higher efficiency at heavy loads, better voltage regulation at higher power factors, low exciting current, smaller size, and lighter weight.

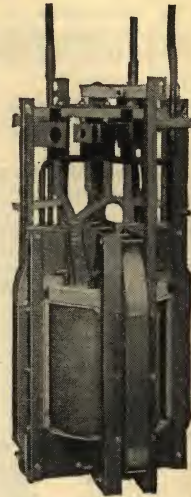
The tanks are of all-welded steel with fins, corrugations, or cooling tubes in the larger sizes to provide ample radiating surface for the dissipation of heat. Each tank is given two coats of specially selected Glyptal paint, each coat oven dried, resulting in an attractive and durable finish. For complete information, ask for Bulletin GEA-2600.



Small Distribution Transformer with Low Voltage Tank Wall Bushings



Large Distribution Transformer with Cooling Tubes and High Voltage Cover Bushings



Typical Interior Assembly of Large Spirakore Transformer



Interior Assembly of Small Spirakore Transformer

## For 480 or 600-Volt Circuits

**APPLICATION.**—By connection of the low voltage leads, transformers are arranged for series or multiple two-wire service, or for three-wire service.

**SERVICE.**—Suitable for outdoor or indoor installation.

**MOUNTING.**—Sizes 100 kva. and smaller are suitable for direct pole mounting.

## Name Plate Voltage Ratings:

Line No. 1—480/456/432 to 120/240  
Line No. 2—600/570/540 to 120/240

Line No. 1	Line No. 2	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
26H313	26H324	\$122.	1.5	3 3/4	140
26H314	26H325	142.	3	3	165
26H315	26H326	220.	5	3 3/4	190
26H316	26H327	286.	7.5	8	270
26H317	26H328	340.	10	9 1/4	295
26H318	26H329	434.	15	12 1/2	380
26H319	26H330	600.	25	19	550
26H320	26H331	786.	37.5	34	805
26H321	26H332	962.	50	34	930
26H322	26H333	1284.	75	59	1220
26H323	26H334	1600.	100	59	1535
32H240	32H242	2526.	150	82	2265
32H241	32H243	3082.	200	98	2815

## For 2400 and 4160Y-Volt Circuits, No Taps

**APPLICATION.**—By connection of the low voltage leads, transformers having low voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service.

**SERVICE.**—Suitable for indoor or outdoor installation.

**MOUNTING.**—Sizes 100 kva. and smaller are suitable for direct pole mounting.

Continued Next Column

## 2400 and 4160Y-Volt Circuits, No Taps

Name Plate Voltage Ratings:  
Line No. 1—2400/4160Y to 120/240,  
No Taps

Line No. 1	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
28H548	\$116.	1.5	3 3/4	140
26H2	134.	3	3	160
26H3	210.	5	3 3/4	190
26H4	272.	7.5	8	270
26H5	324.	10	9 1/4	295
26H6	412.	15	12 1/2	380
26H7	570.	25	19	540
26H8	746.	37.5	34	810
26H9	914.	50	34	940

## For 2400 and 4160Y-Volt Circuits

**APPLICATION.**—By connection of the low voltage leads, transformers having low voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service.

**SERVICE.**—Suitable for outdoor or indoor installation.

**MOUNTING.**—Sizes 100 kva. and smaller are suitable for direct pole mounting.

## Name Plate Voltage Ratings:

Line No. 1—2400/4160Y to 120/240—(4) 2 1/2 Per Cent Taps Below 2400 Volts  
Line No. 2—2400/4160Y to 240/480—(2) 2 1/2 Per Cent Taps Above & (2) 2 1/2 Per Cent Taps Below 2400 Volts  
Line No. 3—2400/4160Y to 600—(2) 2 1/2 Per Cent Taps Above & (2) 2 1/2 Per Cent Taps Below 2400 Volts

Line No. 1	Line No. 2	Line No. 3	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
26H17	26H37	26H49	\$122.	1.5	5 1/2	155
26H18	26H34	26H50	142.	3	5	180
26H19	26H35	26H51	220.	5	5 3/4	200
26H20	26H36	26H52	286.	7.5	8	270
26H21	26H37	26H53	340.	10	9 1/4	295
26H22	26H38	26H54	434.	15	12 1/2	380
26H23	26H39	26H55	600.	25	19	540
26H24	26H40	26H56	786.	37.5	34	810
26H25	26H41	26H57	962.	50	34	930
26H26	26H42	26H58	1284.	75	59	1135
26H27	26H43	26H59	1600.	100	59	1420
31H954	.....	.....	2356.	150	82	2225
.....	31H956	31H958	2248.	150	82	2225
31H955	.....	.....	2872.	200	101	2820
.....	31H957	31H959	2742.	200	101	2805

## For 4160-Volt Circuits

**APPLICATION.**—These transformers are to provide service where it is more economical or desirable to connect transformers across phases than between line and neutral on 2400-4160-volt Y circuits. The use of these transformers gives the same service voltages as 10:1 ratio transformers connected between line and neutral.

By connection of low voltage leads, transformers are arranged for series or multiple two-wire service, or for three-wire service.

**SERVICE.**—Suitable for outdoor or indoor use.

**MOUNTING.**—Sizes 100 kva. and smaller are arranged for direct pole mounting.

## Nameplate Voltage Ratings:

Line No. 1—4160 to 120/240—(4) 2 1/2 Per Cent Taps Below 4160 Volts

Line No. 2—4160 to 240/480—(2) 2 1/2 Per Cent Taps Above and (2) 2 1/2 Per Cent Taps Below 4160 Volts

Line No. 3—4160 to 600—(2) 2 1/2 Per Cent Taps Above and (2) 2 1/2 Per Cent Taps Below 4160 Volts

Line No. 1	Line No. 2	Line No. 3	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
26H335	28H65	28H76	\$132.	1.5	5 1/2	165
26H336	28H66	28H77	154.	3	5	185
26H337	28H67	28H78	234.	5	5 3/4	215
26H338	28H68	28H79	314.	7.5	8	275
26H339	28H69	28H80	372.	10	9 1/4	300
26H340	28H70	28H81	470.	15	12 1/2	385
26H341	28H71	28H82	664.	25	22 1/2	575
26H342	28H72	28H83	862.	37.5	38	865
26H343	28H73	28H84	1050.	50	46	1055
26H344	28H74	28H85	1394.	75	59	1190
26H345	28H75	28H86	1716.	100	59	1525
31H960	.....	.....	2500.	150	82	2240
.....	31H962	31H964	2386.	150	82	2260
31H961	.....	.....	2990.	200	101	2810
.....	31H963	31H965	2852.	200	101	2820



## G-E Type HS Oil-Immersed Distribution Transformers

Single Phase, 60 Cycles, Self-Cooled

## For 4800 and 8320Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads, transformers having low voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor use.

MOUNTING.—Sizes 100 kva. and smaller are suitable for direct pole mounting.

## Name Plate Voltage Ratings:

Line No. 1—4800/8320Y to 120/240—(4) 2½ Per Cent Taps Below 4800 Volts

Line No. 2—4800/8320Y to 240/480—(2) 2½ Per Cent Taps Above and (2) 2½ Per Cent Taps Below 4800 Volts

Line No. 3—4800/8320Y to 600—(2) 2½ Per Cent Taps Above and (2) 2½ Per Cent Taps Below 4800 Volts

Line No. 1	Line No. 2	Line No. 3	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
26H81	26H97	26H113	\$132.	1.5	5½	160
26H82	26H98	26H114	154.	3	5	185
26H83	26H99	26H115	234.	5	5¾	205
26H84	26H100	26H116	314.	7.5	8	275
26H85	26H101	26H117	372.	10	9¼	300
26H86	26H102	26H118	470.	15	12½	385
26H87	26H103	26H119	664.	25	22½	570
26H88	26H104	26H120	862.	37.5	34	850
26H89	26H105	26H121	1050.	50	43	1035
26H90	26H106	26H122	1394.	75	37	1135
26H91	26H107	26H123	1716.	100	47	1420
31H966	.....	.....	2500.	150	82	2230
.....	31H968	31H970	2386.	150	82	2230
31H967	.....	.....	2990.	200	101	2680
.....	31H969	31H971	2852.	200	101	2680

## For 2400, 4160Y, 4800, and 8320Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads, transformers having a low voltage rating of 120/240 or 240/480 are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor use.

MOUNTING.—Sizes 100 kva. and smaller are suitable for direct pole mounting.

## Name Plate Voltage Ratings:

Line No. 1—2400x4800/8320Y to 120/240—(4) 2½ Per Cent Taps Below 4800 Volts

Line No. 2—2400x4800/8320Y to 240/480

Line No. 3—2400x4800/8320Y to 600

Lines No. 2 & 3 Have (2) 2½ Per Cent Taps Above & (2) 2½ Per Cent Taps Below 4800 Volts, Also Available as (1) 5 Per Cent Tap Above and (1) 5 Per Cent Tap Below 2400 Volts.

Line No. 1	Line No. 2	Line No. 3	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
26H145	26H161	26H177	\$140.	1.5	5½	160
26H146	26H162	26H178	162.	3	5	185
26H147	26H163	26H179	244.	5	5¾	205
26H148	26H164	26H180	330.	7.5	8	275
26H149	26H165	26H181	392.	10	9¼	300
26H150	26H166	26H182	494.	15	12½	385
26H151	26H167	26H183	698.	25	22½	570
26H152	26H168	26H184	904.	37.5	34	850
26H153	26H169	26H185	1102.	50	43	1035
26H154	26H170	26H186	1462.	75	37	1135
26H155	26H171	26H187	1802.	100	47	1420
31H974	.....	.....	2614.	150	82	2250
.....	31H976	31H978	2500.	150	82	2250
31H975	.....	.....	3124.	200	101	2820
.....	31H977	31H979	2990.	200	101	2820

Note: Line 1 is also available without high voltage taps.

## For 7200 and 12,470Y-Volt Circuits

APPLICATION.—By connection of low voltage leads, transformers having low voltage rating of 120/240 or 240/480 are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

MOUNTING.—Sizes 100 kva. and smaller are arranged for direct pole mounting.

## For 7200 and 12,470Y-Volt Circuits (Con't.)

## Name Plate Voltage Ratings:

Line No. 1—7200/12,470Y to 120/240  
Line No. 2—7200/12,470Y to 240/480  
Line No. 3—7200/12,470Y to 600

## H-V Taps:

100 Kva. and Smaller, (3) Approx. 4½ Per Cent Taps Below 7200 Volts (Lowest Tap Reduced Kva.)  
150 and 200 Kva., (4) 2½ Per Cent Taps Below 7200 Volts

Line No. 1	Line No. 2	Line No. 3	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
26H548	26H596	26H644	\$154.	1.5	5¼	155
26H549	26H597	26H645	170.	3	5	175
26H550	26H598	26H646	266.	5	5¾	200
26H551	26H599	26H647	360.	7.5	9½	275
26H552	26H600	26H648	424.	10	11	315
26H553	26H601	26H649	544.	15	17½	470
26H554	26H602	26H650	742.	25	25	650
26H571	26H619	26H667	972.	37.5	35	895
26H572	26H620	26H668	1178.	50	39	1165
26H573	26H621	26H669	1562.	75	60	1430
26H574	26H622	26H670	1864.	100	59	1580
32H109	.....	.....	2542.	150	85	2485
.....	32H111	32H113	2426.	150	85	2465
32H110	.....	.....	3014.	200	129	3200
.....	32H112	32H114	2876.	200	129	3175

## For 12,000-Volt Circuits

APPLICATION.—By connection of low voltage leads, transformers having low voltage rating of 120/240 or 240/480 are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

MOUNTING.—Sizes 100 kva. and smaller are arranged for direct pole mounting.

## Name Plate Voltage Ratings:

Line No. 1—12,000 to 120/240  
Line No. 2—12,000 to 240/480  
Line No. 3—12,000 to 600

(4) 2½ Per Cent Taps Below 12,000 Volts

Line No. 1	Line No. 2	Line No. 3	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
26H853	26H901	26H933	\$208.	3	5	175
26H854	26H902	26H934	284.	5	5¾	200
26H856	26H904	26H936	434.	10	11	310
26H857	26H905	26H937	548.	15	17½	465
26H858	26H906	26H938	742.	25	25	650
26H875	26H923	26H955	972.	37.5	35	900
26H876	26H924	26H956	1178.	50	40	1165
26H877	26H925	26H957	1562.	75	59	1445
26H878	26H926	26H958	1864.	100	59	1575

## For 14,400 and 13,200-Volt Circuits

APPLICATION.—By connection of low voltage leads, transformers having low voltage rating of 120/240 or 240/480 are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

MOUNTING.—Sizes 100 kva. and smaller are arranged for direct pole mounting.

## Name Plate Voltage Ratings:

Line No. 1—14,400/13,200 to 120/240  
Line No. 2—14,400/13,200 to 240/480  
Line No. 3—14,400/13,200 to 600

## H-V Taps:

13,800/13,200/12,870 Rated Kva, 12,540 Reduced Kva.

Line No. 1	Line No. 2	Line No. 3	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
28H561	28H575	28H589	\$236.	3	5¼	180
28H562	28H576	28H590	316.	5	5¾	215
28H563	28H577	28H591	472.	10	11	325
28H564	28H578	28H592	592.	15	18	485
28H565	28H579	28H593	784.	25	26	650
38H571	28H585	28H599	998.	37.5	38	890
28H572	28H586	28H600	1202.	50	45	1090
28H573	28H587	28H601	1562.	75	60	1455
28H574	28H588	28H602	1864.	100	59	1640



## G-E Type HSBA Oil-Immersed Distribution Transformers

With Self-Contained Lightning Protection and Overcurrent Protection—Single Phase, 60 Cycles

APPLICATION.—By connection of the low-voltage leads to the bushing terminals inside the tank, transformers with low-voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service.

### High-Voltage Pocket Bushings



**Class A.**—For universal use on delta and Y circuits.

Complete with:

- Two high-voltage bushings;
- Two pellet lightning arresters;
- Tank isolating gap;
- Low-voltage neutral gap;
- Internal high-voltage fuse;
- Low-voltage circuit breaker;
- Overload signal lamp (optional on 1.5 and 3 kva.);
- Support lugs for direct pole mounting.

### For 2400 and 4160Y-Volt Circuits

Name Plate Voltage Rating:  
2400/4160Y to 120/240 Volts

Line No. 1—Without Taps  
Line No. 2—With (4) 2½ Per Cent Taps Below 2400 Volts

Line No. 1		Line No. 2		Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
No.	With Signal Lamp Each	No.	With Signal Lamp Each			
*28H557	\$204.	*27H131	\$210.	1.5	7¼	220
*27H121	222.	*27H132	230.	3	6¾	240
27H122	298.	27H133	308.	5	6¼	255
27H123	360.	27H134	374.	7.5	11	350
27H124	412.	27H135	428.	10	10½	365
27H125	500.	27H136	522.	15	12½	405
27H126	658.	27H137	688.	25	22	620
27H127	874.	27H138	914.	37.5	36	985
27H128	1042.	27H139	1090.	50	43	1195

\*Also available without signal lamp. Price is \$14 less.  
Order No. 28H558, 1.5 kva., or No. 27H130, 3 kva., Line No. 1; or No. 27H140, 1.5 kva., or No. 27H141, 3 kva., Line No. 2.

### For 4800 and 8320Y-Volt Circuits

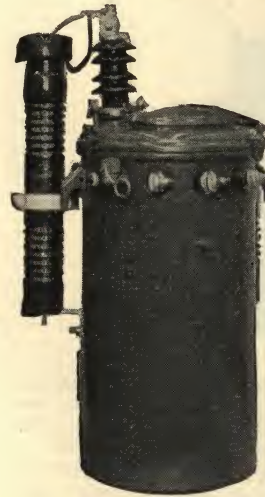
Name Plate Voltage Rating:  
4800/8320Y to 120/240 Volts

Line No. 1—Without High-Voltage Taps  
Line No. 2—With (4) 2½ Per Cent Taps Below 4800 Volts

Line No. 1		Line No. 2		Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
No.	With Signal Lamp Each	No.	With Signal Lamp Each			
*26H252	\$238.	*26H241	\$244.	1.5	7¼	235
*26H253	258.	*26H242	266.	3	6¾	255
26H254	334.	26H243	346.	5	6¼	270
26H255	410.	26H244	426.	7.5	11	365
26H256	466.	26H245	484.	10	12	390
26H257	558.	26H246	582.	15	12½	430
26H258	742.	26H247	776.	25	22	645
26H259	970.	26H248	1014.	37.5	36	990
26H260	1150.	26H249	1202.	50	44	1200

\*Also available without signal lamp. Price is \$14 less.  
Order No. 26H261, 1.5 kva., or No. 26H262, 3 kva., Line No. 1; or No. 26H250, 1.5 kva., or No. 26H251, 3 kva., Line No. 2.

### High-Voltage Cover Bushings



Type HSBA transformers, in Class A, are also available for 7200/14,470Y and 7620/13,200Y-volt circuits. These ratings have high-voltage cover bushings.

**Class B2.**—For use on solidly grounded common-neutral circuits with the tank solidly grounded.

Complete with:

- One high-voltage bushing;
- One clamp-terminal tank-grounding connector;
- One pellet lightning arrester;
- Low-voltage neutral link bolted to tank externally;
- Internal high-voltage fuse;
- Low-voltage circuit breaker;
- Overload signal lamp (optional on 1½ and 3 kva.);
- Support lugs for direct pole mounting.

### For 7200 and 12,470-Gr-Y-Volt Circuits

Name Plate Voltage Rating:  
12,470 Gr-Y/7200 to 120/240

Line No. 1—Without Taps

Line No. 2—With (3) Approx. 4½ Per Cent Taps Below 7200 Volts  
(Lowest Tap is Reduced Kva.)

Line No. 1		Line No. 2		Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
No.	With Signal Lamp Each	No.	With Signal Lamp Each			
*26H263	\$216.	*27H164	\$224.	1.5	6¼	220
*26H264	232.	*27H165	240.	3	6¼	240
26H265	322.	27H166	336.	5	6½	275
26H266	412.	27H167	430.	7.5	12	355
.....	.....	27H168	494.	10	12	380
.....	.....	27H169	614.	15	17½	545
.....	.....	27H170	812.	25	26	715
.....	.....	27H171	1082.	37.5	37	990
.....	.....	27H172	1288.	50	45	1200

\*Also available without signal lamp. Price is \$14 less.  
Order No. 26H267, 1.5 kva., or No. 26H268, 3 kva., Line No. 1; or No. 26H173, 1.5 kva., or No. 26H174, 3 kva., Line No. 2.

### For 7620 and 13,200-Gr-Y-Volt Circuits

Name Plate Voltage Rating:  
13,200 Gr-Y/7200 to 120/240

Line No. 1—Without Taps

Line No. 2—With (4) 2½ Per Cent Taps Below 7620 Volts

Line No. 1		Line No. 2		Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
No.	With Signal Lamp Each	No.	With Signal Lamp Each			
*26H275	\$216.	*27H186	\$224.	1.5	6¼	220
*26H276	232.	*27H187	240.	3	6¼	240
26H277	322.	27H188	336.	5	6½	275
26H278	412.	27H189	430.	7.5	12	355
26H279	472.	27H190	494.	10	12	380
26H280	586.	27H191	614.	15	17½	545
.....	.....	27H192	812.	25	26	715
.....	.....	27H193	1082.	37.5	37	990
.....	.....	27H194	1288.	50	45	1200

\*Also available without signal lamp. Price is \$14 less.  
Order No. 26H281, 1.5 kva., or No. 26H282, 3 kva., Line No. 1; or No. 27H195, 1.5 kva., or No. 27H196, 3 kva., Line No. 2.



## G-E Type HS Oil-Immersed Rural-Line Transformers

In Accordance with R.E.A. Requirements



These transformers are of the single-high-voltage-bushing design, with one end of the high-voltage winding permanently connected to the tank, which in turn is to be solidly grounded by connection to the common system neutral.

These transformers offer the utmost in service reliability as they embody the same perfection of detail in design and construction as the standard Type HS distribution transformer.

Each unit complete with:

- One high-voltage cover bushing;
- Handhole in cover;
- Three low-voltage tank-wall bushings;
- Provision for direct pole mounting with the low-voltage bushings 90 degrees from the pole;
- Two mounting positions, on opposite sides of tank;
- Two clamp-terminal tank grounding connectors;
- Low-voltage neutral grounded to tank.

### For 7200 and 12,470-Gr-Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service, or for three-wire service.

#### Name Plate Voltage Ratings:

12470 Gr-Y/7200 to 120/240—(3) Approx. 4½ Per Cent Taps Below 7200 Volts (Lowest Tap Is Reduced Kva.)

No.	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
31H881	\$148.00	1.5	5	140
31H882	264.00	3	4¾	155
31H883	260.00	5	6¼	190
31H884	354.00	7.5	10	270
31H885	418.00	10	10¾	305
31H886	538.00	15	17½	470
31H887	736.00	25	26	640

### For 7620 and 13,200-Gr-Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service, or for three-wire service.

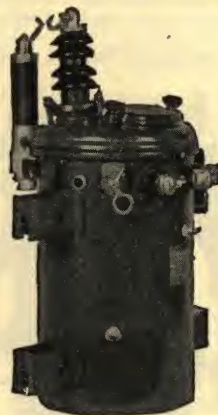
#### Name Plate Voltage Ratings:

13,200 Gr-Y/7620 to 120/240—(4) 2½ Per Cent Taps Below 7620 Volts

No.	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
31H888	\$148.00	1.5	5	140
31H889	164.00	3	4¾	155
31H890	260.00	5	6¼	190
31H891	354.00	7.5	10	270
31H892	418.00	10	10¾	305
31H893	538.00	15	17½	470
31H894	736.00	25	25	645

## G-E Type HSBA Oil-Immersed Rural-Line Transformers

In Accordance With R.E.A. Requirements



They embody the same reliability as the conventional Type HS transformer. Lightning protection is afforded by a hi-stroke rural arrester mounted directly on the tank, and overcurrent protection is provided by a low-voltage circuit breaker mounted inside the tank, under oil.

Each unit complete with:

- One high-voltage cover bushing;
- One hi-stroke rural arrester;
- Internal high-voltage fuse;
- Handhole in cover;
- Overload signal lamp (on sizes 5 kva. and larger);
- Three low-voltage tank-wall bushings;
- Internal low-voltage circuit breaker with external operating handle;
- Provision for direct pole mounting with low-voltage bushings 90 degrees from the pole;
- Two mounting positions, on opposite sides of tank;
- Two clamp-terminal tank grounding connectors;
- Low-voltage neutral grounded to tank.

### For 7200 and 12,470 Gr-Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service, or for three-wire service.

#### Name Plate Voltage Rating:

12,470 Gr-Y/7200 to 120/240—(3) Approx. 4½ Per Cent Taps Below 7200 Volts (Lowest Tap Is Reduced Kva.)

Cat. No.	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
31H923	\$212.00	1.5	5	145
31H924	228.00	3	4½	165
31H925	338.00	5	6	200
31H926	432.00	7.5	11½	290
31H927	496.00	10	12	325
31H928	616.00	15	17½	485
31H929	814.00	25	25	655

### For 7620 and 13,200 Gr-Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service, or for three-wire service.

#### Name Plate Voltage Rating:

13,200 Gr-Y/7620 to 120/240—(4) 2½ Per Cent Taps Below 7620 Volts

Cat. No.	Each	Kva. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt., Lb. Incl. Oil
31H930	\$212.00	1.5	5	145
31H931	228.00	3	4½	165
31H932	338.00	5	6	200
31H933	432.00	7.5	11½	290
31H934	496.00	10	12	325
31H935	616.00	15	17½	485
31H936	814.00	25	25	660



## G-E Type HS Pyranol Distribution Transformers

### Single Phase, 60 Cycles, Self-Cooled



This transformer generally affords substantial savings over the total installed cost of oil-filled equipment for all installations indoors or in confined locations.

Filled with Pyranol, G-E's synthetic insulating and cooling liquid, which has all of the desirable characteristics of mineral oil and, in addition, is non-inflammable. Pyranol transformers can, therefore, be safely installed indoors or in confined locations without expensive fireproof vaults. They can usually be installed at the load center, giving additional savings by the elimination of long and costly runs of secondary copper, with improved voltage regulation at the load.

Pyranol transformers have made possible savings on overall installed costs of as high as 23 per cent, compared with the cost of oil-filled equipment.

Recognized by the National Electrical Code.

Pyranol is suitable for use only in Pyranol transformers, designed especially for the purpose.

Send for Bulletin GEA-2048 for complete information.

#### For 480 and 600-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

**Name Plate Voltage Ratings:**  
**Line No. 1—480 to 120/240—(2) 5 Per Cent Taps Below 480 Volts**  
**Line No. 2—600 to 120/240—(2) 5 Per Cent Taps Below 600 Volts**

Line No. 1	Line No. 2	Each	Kva. Cont. 55°C. Rise	Approx. Ship. Wt., Lb. Incl. Pyranol	Line No. 1	Line No. 2	Each	Kva. Cont. 55°C. Rise	Approx. Ship. Wt., Lb. Incl. Pyranol
73X416	73X429	\$366.	1.5	300	73X423	73X436	\$1078.	37.5	1150
73X417	73X430	386.	3	350	73X424	73X437	1282.	50	1350
73X418	73X431	416.	5	425	73X425	73X438	1716.	75	1700
73X419	73X432	444.	7.5	425	73X426	73X439	2090.	100	1900
73X420	73X433	486.	10	450	73X427	73X440	2776.	150	2650
73X421	73X434	596.	15	575	73X428	73X441	3400.	200	4100
73X422	73X435	822.	25	725					

#### For 2400 and 4160Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for indoor or outdoor installation.

**Name Plate Voltage Ratings:**  
**Line No. 1—2400/4160Y to 120/240 Without Taps**

Line No. 1	Line No. 2	Each	Kva. Cont. 55°C. Rise	Approx. Ship. Wt., Lb. Incl. Pyranol	Line No. 1	Line No. 2	Each	Kva. Cont. 55°C. Rise	Approx. Ship. Wt., Lb. Incl. Pyranol
72X1	\$358.	1.5	300		72X6	\$578.	15	575	
72X2	378.	3	350		72X7	802.	25	725	
72X3	406.	5	425		72X8	1078.	37.5	1150	
72X4	430.	7.5	425		72X9	1282.	50	1350	
72X5	470.	10	450						

#### For 4800/8320Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers having a low voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service. Transformers having low voltage rating of 240/480 are suitable for series and multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

**Name Plate Voltage Ratings**  
**Line No. 1—4800/8320 to 120/240 without Taps**  
**Line No. 2—4800/8320 to 120/240—(4) 2½ Per Cent Taps Below 4800 Volts**  
**Line No. 3—4800/8320 to 240/480—(2) 2½ Per Cent Taps Above and (2) 2½ Per Cent Taps Below 4800 Volts**  
**Line No. 4—4800/8320 to 600—(2) 2½ Per Cent Taps Below and (2) 2½ Per Cent Taps Above 4800 Volts**  
 (Continued)

#### For 4800/8320Y-Volt Circuits (Con't)

Line Nos. 2, 3 and 4					Approx.	
Line No. 1		Line No. 2	Line No. 3	Line No. 4	Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol
No.	Each	No.	No.	No.		
28H637	\$370.	28H289	28H290	28H291	\$388.	1.5 300
27H850	390.	27H865	27H880	27H895	408.	3 350
27H851	420.	27H866	27H881	27H896	438.	5 450
27H852	458.	27H867	27H882	27H897	480.	7.5 450
27H853	504.	27H868	27H883	27H898	528.	10 475
27H854	614.	27H869	27H884	27H899	642.	15 575
27H855	866.	27H870	27H885	27H900	904.	25 775
29H985	1180.	29H987	29H991	29H995	1180.	37.5 1150
29H986	1400.	29H988	29H992	29H996	1400.	50 1400
.....		29H989	29H993	29H997	1850.	75 1700
.....		29H990	29H994	29H998	2240.	100 1900

#### For 2400 and 4160Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers having low voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service. Transformers having low voltage rating of 240/480 are suitable for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

**Name Plate Voltage Ratings:**  
**Line No. 1—2400/4160Y to 120/240—(4) 2½ Per Cent Taps Below 2400 Volts**  
**Line No. 2—2400/4160Y to 120/480—(2) 2½ Per Cent Taps Above and (2) 2½ Per Cent Taps Below 2400 Volts**

				Approx.								Approx.			
Line No. 1	Line No. 2	Each	Kva. Cont.	Ship. Wt., Lb. Incl.	Line No. 1	Line No. 2	Each	Kva. Cont.	Ship. Wt., Lb. Incl.	Line No. 1	Line No. 2	Each	Kva. Cont.	Ship. Wt., Lb. Incl.	
			55°C. Rise	Pyranol				55°C. Rise	Pyranol				55°C. Rise	Pyranol	
28H284	28H285	\$366.	1.5	300	29H952	\$1078.	29H961	\$1078.	37.5	1150					
27H753	27H768	386.	3	350	29H953	1282.	29H962	1282.	50	1350					
27H754	27H769	416.	5	425	29H954	1716.	29H963	1716.	75	1700					
27H755	27H770	444.	7.5	425	29H955	2090.	29H964	2090.	100	1900					
27H756	27H771	486.	10	450	29H956	2776.	29H965	2712.	150	2650					
27H757	27H772	596.	15	575	29H957	3400.	29H966	3314.	200	4100					
27H758	27H773	822.	25	725											

#### For 2400 and 4160Y-Volt Circuits

SERVICE.—Suitable for outdoor or indoor installation.

**Name Plate Voltage Ratings:**  
**2400/4160Y to 600—(2) 2½ Per Cent Taps Above and (2) 2½ Per Cent Taps Below 2400 Volts**

Line No. 1	Line No. 2	Each	Kva. Cont. 55°C. Rise	Approx. Ship. Wt., Lb. Incl. Pyranol	Line No. 1	Line No. 2	Each	Kva. Cont. 55°C. Rise	Approx. Ship. Wt., Lb. Incl. Pyranol
28H286	\$366.	1.5	300		29H970	\$1078.	37.5	1150	
27H783	386.	3	350		29H971	1282.	50	1350	
27H784	416.	5	425		29H972	1716.	75	1700	
27H785	444.	7.5	425		29H973	2090.	100	1900	
27H786	486.	10	450		29H974	2712.	150	2650	
27H787	596.	15	575		29H975	3314.	200	4100	
27H788	822.	25	725						

#### For 2400, 4160Y, 4800, and 8320Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers having a low voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service. Transformers having low voltage rating of 240/480 are suitable for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

**Name Plate Voltage Ratings:**  
**Line No. 1—2400x4800/8320Y to 120/240—H-V. Taps, (4) 2½ Per Cent Below 4800 Volts, (2) 5 Per Cent Below 2400 Volts**  
**Line No. 2—2400x4800/8320Y to 240/480—H-V. Taps, (2) 2½ Per Cent Below and (2) 2½ Per Cent Above 4800 Volts; (1) 5 Per Cent Below and (1) 5 Per Cent Above 2400 Volts**

Cable Data - 100' Cable - 100' Cable - 100' Cable									
		Approx.				Approx.			
Line No. 1	Line No. 2	Each	Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol	Line No. 1	Line No. 2	Each	Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol
28H293	28H294	\$398.	1.5	300	27H816	\$1238.	31H1	\$1238.	37.5 1150
27H810	27H820	420.	3	350	27H817	1470.	31H2	1470.	50 1400
27H811	27H821	450.	5	450	27H818	1942.	31H3	1942.	75 1700
27H812	27H822	492.	7.5	450	27H819	2352.	31H4	2352.	100 1900
27H813	27H823	536.	10	475	72X78	3104.	31H5	3036.	150 2650
27H814	27H824	662.	15	575	72X79	3706.	31H6	3612.	200 4100
27H815	27H825	932.	25	775					

Continued



## G-E Type HS Pyranol Distribution Transformers

Single Phase, 60 Cycles, Self-Cooled

Concluded

## For 2400, 4160Y, 4800, and 8320Y-Volt Circuits

Name Plate Voltage Rating:  
2400x4800/8320Y to 600—(2) 2½ Per Cent Taps Below and (2) 2½ Per Cent Taps Above 4800 Volts, (1) 5 Per Cent Tap Below and (1) 5 Per Cent Tap Above 2400 Volts

No.	Each	Approx.		No.	Each	Approx.	
		Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol			Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol
28H295	\$398.	1.5	300	31H10	\$1238.	37.5	1150
27H835	420.	3	350	31H11	1470.	50	1400
27H836	450.	5	450	31H12	1942.	75	1700
27H837	492.	7.5	450	31H13	2352.	100	1900
27H838	536.	10	475	31H14	3036.	150	2650
27H839	662.	15	575	31H15	3612.	200	4100
27H840	932.	25	775				

## For 4160-Volt Circuits

This transformer is to provide service where it is more economical or desirable to connect transformer across phases than between line and neutral on 2300/4000-volt Y circuits. The use of this transformer gives the same service voltages as 10:1 ratio transformers connected between line and neutral.

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

Name Plate Voltage Rating:  
4160 Delta to 120/240—(4) 2½ Per Cent Taps Below 4160 Volts

No.	Each	Approx.		No.	Each	Approx.	
		Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol			Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol
28H287	\$388.	1.5	300	29H979	\$1180.	37.5	1150
27H800	408.	3	350	29H980	1400.	50	1400
27H801	438.	5	450	29H981	1850.	75	1700
27H802	480.	7.5	450	29H982	2240.	100	1900
27H803	528.	10	475	29H983	2958.	150	2650
27H804	642.	15	575	29H984	3530.	200	4100
27H805	904.	25	775				

## For 7200 and 12,470Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers having low voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service. Transformers having low voltage rating of 240/480 are suitable for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

Name Plate Voltage Ratings:  
Line No. 1—7200/12,470Y to 120/240  
Line No. 2—7200/12,470Y to 240/480

H-V. Taps—Lines 1 and 2:  
1.5 to 100 Kva., (3) Approx. 4½ Per Cent Below 7200 Volts (Lowest Tap is reduced Kva.)  
150 to 200 Kva., (4) 2½ Per Cent Below 7200 Volts

Line No. 1	Line No. 2	Each	Approx.		Line No. 1	Line No. 2	Each	Approx.	
			Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol				Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol
28H300	28H304	\$430.	1.5	500	72X122	\$1356.	37.5	1600	
28H301	28H305	454.	3	500	72X123	1608.	50	1800	
28H302	28H306	486.	5	500	72X124	2058.	75	2250	
28H303	28H307	532.	7.5	600	72X125	2420.	100	2550	
72X119	72X135	636.	10	650	31H19	3122.	150	3100	
72X120	72X136	784.	15	875	31H20	3696.	200	4050	
72X121	72X137	1070.	25	1150					

## For 7200 and 12,470Y-Volt Circuits

SERVICE.—Suitable for outdoor or indoor installation.

Name Plate Voltage Rating:  
7200/12,470Y to 600

H-V. Taps:  
1.5 to 100 Kva., (3) Approx. 4½ Per Cent Below 7200 Volts (Lowest Tap is Reduced Kva.)  
150 to 200 Kva., (4) 2½ Per Cent Taps Below 7200 Volts

No.	Each	Approx.		No.	Each	Approx.	
		Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol			Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol
28H308	\$430.	1.5	500	72X154	\$1356.	37.5	1600
28H309	454.	3	500	72X155	1608.	50	1800
28H310	486.	5	500	72X156	2058.	75	2250
28H311	532.	7.5	600	72X157	2420.	100	2550
72X151	636.	10	650	31H29	3054.	150	3100
72X152	784.	15	875	31H30	3604.	200	4050
72X153	1070.	25	1150				

## For 12,000-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers having low voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service. Transformers having low voltage rating of 240/480 are suitable for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor and indoor installation.

Name Plate Voltage Rating:

Line No. 1—12,000 to 120/240 to 240/120. (4) 2½ Per Cent Taps Below 12,000 Volts  
Line No. 2—12,000 to 240/480. (4) 2½ Per Cent Taps Below 12,000 Volts.

Line No. 1	Line No. 2	Each	Approx.		Line No. 1	Line No. 2	Each	Approx.	
			Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol				Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol
28H332	28H334	\$528.	3	500	31H81	\$2058.	31H90	\$2058.	75 2250
28H333	28H335	556.	5	500	31H82	2420.	31H91	2420.	100 2550
27H970	27H982	652.	10	650	31H83	3122.	31H92	3054.	150 3100
27H971	27H983	790.	15	875	31H84	3696.	31H93	3604.	200 4050
27H972	27H984	1070.	25	1150	31H85	4200.	31H94	4082.	250 4900
31H79	31H88	1356.	37.5	1600	31H86	5050.	31H95	4888.	333 5500
31H80	31H89	1608.	50	1800	31H87	6660.	31H96	6458.	500 7200

## For 12,000-Volt Circuits

SERVICE.—Suitable for outdoor or indoor installation.

Name Plate Voltage Rating:

Line No. 3—12,000 to 600. (4) 2½ Per Cent Taps Below 12,000 Volts  
Line No. 4—12,000 to 2400. (4) 2½ Per Cent Taps Below 12,000 Volts

Line No. 3	Line No. 4	Each	Approx.		Line No. 3	Line No. 4	Each	Approx.	
			Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol				Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol
28H336	.....	\$528.	3	500	31H99	\$2058.	31H108	\$2058.	75 2250
28H337	28H338	556.	5	500	31H100	2420.	31H109	2420.	100 2550
27H994	28H260	652.	10	650	31H101	3054.	31H110	3000.	150 3100
27H995	28H261	790.	15	875	31H102	3604.	31H111	3486.	200 4050
27H996	28H262	1070.	25	1150	31H103	4082.	31H112	3884.	250 4900
31H97	31H106	1356.	37.5	1600	31H104	4888.	31H113	4586.	333 5500
31H98	31H107	1608.	50	1800	31H105	6458.	31H114	5938.	500 7200

## For 13,200-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers having low voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service. Transformers having low voltage rating of 240/480 are suitable for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for indoor or outdoor installation.

Name Plate Voltage Rating:

Line No. 1—13,200 to 120/240 to 240/120. (4) 2½ Per Cent Taps Below 13,200 Volts  
Line No. 2—13,200 to 240/480. (4) 2½ Per Cent Taps Below 13,200 Volts

Line No. 1	Line No. 2	Each	Approx.		Line No. 1	Line No. 2	Each	Approx.	
			Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol				Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol
28H339	28H341	\$584.	3	500	31H117	\$2058.	31H126	\$2058.	75 2250
28H340	28H342	616.	5	500	31H118	2420.	31H127	2420.	100 2550
28H19	28H31	714.	10	650	31H119	3122.	31H128	3054.	150 3100
28H20	28H32	850.	15	875	31H120	3696.	31H129	3604.	200 4050
28H21	28H33	1120.	25	1150	31H121	4200.	31H130	4082.	250 4900
31H115	31H124	1384.	37.5	1600	31H122	5050.	31H131	4888.	333 5500
31H116	31H125	1622.	50	1800	31H123	6660.	31H132	6458.	500 7200

## For 13,200-Volt Circuits

SERVICE.—Suitable for indoor or outdoor installation.

Name Plate Voltage Rating:

Line No. 3—13,200 to 600 Volts. (4) 2½ Per Cent Taps Below 13,200 Volts  
Line No. 4—13,200 to 2400 Volts. (4) 2½ Per Cent Taps Below 13,200 Volts

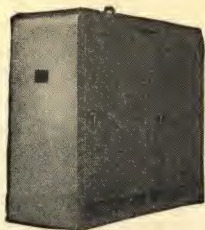
Line No. 3	Line No. 4	Each	Approx.		Line No. 3	Line No. 4	Each	Approx.	
			Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol				Kva. Cont. 55°C. Rise	Ship. Wt., Lb. Incl. Pyranol
28H343	.....	\$584.	3	500	31H135	\$2058.	31H144	\$2058.	75 2250
28H344	28H345	616.	5	500	31H136	2420.	31H145	2420.	100 2550
28H43	28H272	714.	10	650	31H137	3054.	31H146	3000.	150 3100
28H44	28H273	850.	15	875	31H138	3604.	31H147	3486.	200 4050
28H45	28H274	1120.	25	1150	31H139	4082.	31H148	3884.	250 4900
31H133	31H142	1384.	37.5	1600	31H140	4888.	31H149	4586.	333 5500
31H134	31H143	1622.	50	1800	31H141	6458.	31H150	5938.	500 7200



## G-E Capacitors



**Pyranol Capacitors**  
For Low Voltage Industrial Applications  
Class DTSR (Illustrated)—Dust-Tight for Indoor Service  
Class LSO—For Outdoor Service



**Large Capacitor Equipments**  
Class LLI—For Indoor Service



**Large Capacitor Equipments**  
Class LLO—For Outdoor Service



**Enclosed Capacitor Units**  
For Low Voltage Industrial Applications  
Class EDT—Dust-Tight Design



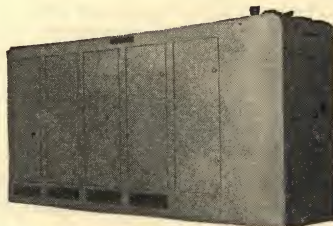
**Enclosed Capacitor Units**  
For Low Voltage Industrial Applications  
Class EWT—Weather-Tight Design



**Pyranol Capacitors**  
For High Voltage Industrial and Substation Applications  
Small Capacitor Equipments  
Class HSI—For Indoor Service



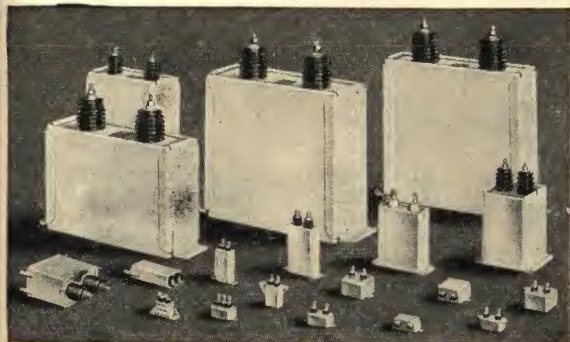
**Pyranol Capacitors**  
For High Voltage Industrial and Substation Applications  
Small Capacitor Equipments  
Class PT—Pole Type for Outdoor Service



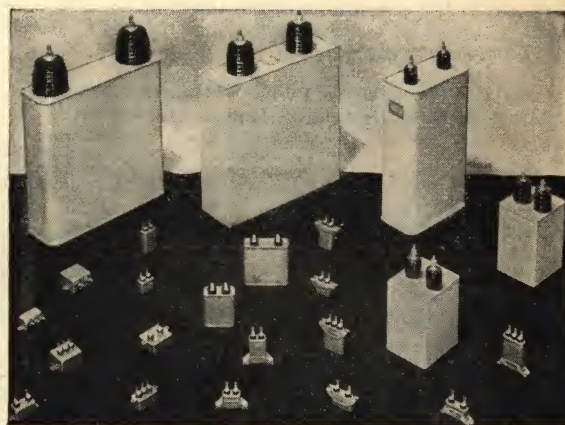
**Large Capacitor Equipments**  
Class HLI (Illustrated)—For Indoor Service  
Class HLO—For Outdoor Service



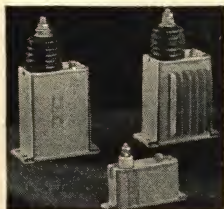
**Pyranol Capacitors**  
Class ID—Individual Pole-Type Units



**Pyranol Capacitors**  
Fixed Paper-Dielectric Capacitors for D.C. Applications  
to JAN-C-25 Specifications and Commercial Standards



**Pyranol Capacitors for A.C. Applications and Commercial Standards**



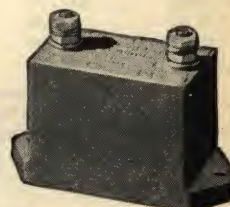
**High Frequency Capacitors**  
Class HFBL—Paper-Dielectric Capacitors  
For Blocking and By-Pass Applications



**High Frequency Capacitors**  
Class HFP—Parallel-Plate Liquid-Dielectric Water-Cooled Capacitors



**Pyranol Capacitors**  
Energy-Storage and Discharge Capacitors



**Lectrofilm Capacitors**

Can also Supply Capacitors to Meet Joint Army-Navy Specifications—Proposed JAN-C-25



## G-E Pellet-Type Distribution Lightning Arresters

For Circuits 1 to 15 Kv.



3 Kv. Maximum Permissible Line-to-Ground Voltage, with Standard Hanger

The electric elements consist of a column of pellets and a series-gap assembly. The pellet column forms the valve element, preventing the flow of system current following discharge, while the series gap isolates the valve element from the line until it is sparked over by a surge.

The pellets are made of lead peroxide, with a thin, porous coating of litharge, and are assembled in a porcelain-tube container with metal electrodes in contact with each end of the pellet column. The length of the column is proportional to the arrester voltage rating.

The series-gap assembly is sealed within a nitrogen-filled gap chamber, which is entirely isolated from the pellet valve column. This sealed gap chamber filled with dry nitrogen gas prevents the entrance of moisture and makes the arrester independent of atmospheric conditions, thereby assuring permanent freedom from current leakage and corrosion.

The elements of the arrester are contained in a porcelain tube with corrugated exterior. A porcelain cap is mechanically secured by weatherproof compound of high flow point.

This compound, however, is not depended on for sealing the arrester.

Well-glazed, wet-process porcelains are used in pellet arresters of all ratings. A flexible lead, securely soldered, provides for line connection.

The clamp-type ground terminal permits either one or two solid or stranded ground wires to be clamped to the arrester, eliminating connectors, splicing, soldering, and tapping. In this way, both labor and materials are saved.

After gap breakdown, discharge current begins to flow, and the resistance of the pellet valve column decreases as long as the current increases. When the current begins to decrease, the resistance increases, and to such an extent that, at the end of a discharge, the normal system voltage is unable to maintain a current flow through the arrester. This valve action prevents any arc or short-circuit attending discharge, and thereby avoids tripping of line breakers and blowing of sectionalizing fuses from lightning.



9 Kv. Maximum Permissible Line-to-Ground Voltage and Above, with Standard Hanger

## Hangers and Mountings

Altitude, 0 to 6000 Feet

The standard and special hangers which are available for pellet arresters will satisfy virtually all desired mountings of the arresters—alone, in combination with primary fuse cutouts, or on transformer tanks. It will be seen that the pellet-arrester porcelain has two mounting grooves providing for alternate positions of the arresters in either standard or special hangers, making it possible to balance either the clearances or the appearance of the installation. The arrester can be inserted in any hanger either before or after the hanger has been mounted.

## Pellet Type Arresters with Standard Hangers

Table 1—For Systems with Ungrounded Neutral

Model No.	Each	CIRCUIT VOLTAGE CONSTANT POTENTIAL		Maximum Permissible Line-to-Ground Voltage, Rms.	Ship. Wt., Lb.
		Min.	Max.		
9LA10B1	\$14.00	300	1000	1000	8
9LA10B2	17.00	1000	3000	3000	11
9LA10B4	27.00	3000	6000	6000	17
9LA10B5	34.00	6000	9000	9000	26
9LA10B6	51.00	9000	12000	12000	31
9LA10B7	66.00	12000	15000	15000	37

Table 2—For Systems with Solidly Grounded Neutral

Model No.	Each	3000	5000	3000	11
9LA10B2	\$17.00				
9LA10B4	27.00	5000	9000	6000	17
9LA10B5	34.00	9000	12800	9000	26
9LA10B6	51.00	12800	15000	12000	31
9LA10B7	66.00	15000	18000	15000	37

Table 3—For Single-Phase Circuits with One Conductor Solidly Grounded at Source and Multigrounded along Line

Model No.	Each	Primary Circuit Operating Voltage	Maximum Permissible Line-to-Ground Voltage, Rms.	Ship. Wt., Lb.
9LA10B2	\$17.00	2400-2500	3000	11
9LA10B4	27.00	4800-5000	6000	17
9LA10B5	34.00	6900-7200	9000	26
9LA10B188	34.00	7620-7940	10000	37

## Number of Arresters Required at Installation

**For Table 1.** Use two arresters at each single-phase installation. Use three arresters at each 3-phase installation.

**For Table 2.** Use one arrester on phase wire at a single-phase installation made between phase wire and neutral. Use also on neutral wire, a neutral gap if voltage to ground is not over 300 volts; if because of unbalancing, voltage is between 300 and 1000 volts, use Model No. 9LA10B1 arrester. Use two arresters at a single-phase installation between outside phase wires. Use three arresters at each 3-phase installation.

**For Table 3.** Use one arrester at each installation.

## Pellet Type Arresters with Standard Hangers

Table 4—For Protection of Load Side of A.C. Series Lighting Transformers

Model No.	Each	Kva. Rating of Transformers Secondary Amperes (6.6 and 7.5)	Approx. Ship. Wt., Lb.
9LA10B1	\$14.00	1, 2, 3	8
9LA10B2	17.00	5, 7.5, 10, 15	11
9LA10B4	27.00	20, 25, 30	17
9LA10B5	34.00	35, 40	26
9LA10B6	51.00	50	31
9LA10B7	66.00	60, 70	37

## Pellet Type Arresters with Special Hangers

Table 5

Arrester Model No. with Standard Hanger	Arrester Model No. with Special Hanger	*Type of Hanger
9LA10B2 (Hanger Style A)	9LA10B22 9LA10B32 9LA10B52 9LA10B82 9LA10B14 9LA10B24 9LA10B34 9LA10B54 9LA10B84 9LA10B194	Clamp Type, Style D Clamp Type, Style C Hook Type, Style F Combination Pole Hook Type, Style G Clamp Type, Style D Clamp Type, Style C Hook Type, Style F Combination Pole Bolt Type, Style B
9LA10B4 (Hanger Style A)	9LA10B15 9LA10B25 9LA10B35 9LA10B61 9LA10B65 9LA10B85 9LA10B185 9LA10B16 9LA10B26 9LA10B36 9LA10B66 9LA10B86 9LA10B17 9LA10B27 9LA10B37 9LA10B67 9LA10B68 9LA10B88 9LA10B97 9LA10B188	Hook Type, Style G Clamp Type, Style D Clamp Type, Style C Bolt Type, Style A Direct Pole, Style H Combination Pole Clamp Type, Style E Hook Type, Style G Clamp Type, Style D Clamp Type, Style C Direct Pole, Style H Combination Pole, Style I Hook Type, Style G Clamp Type, Style D Clamp Type, Style C Direct Pole, Style H Direct Pole, Style H Combination Pole Bolt Type, Style A Clamp Type, Style E

\*See the following page for sketches of special hangers.



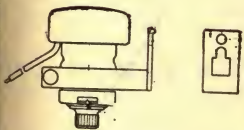
## G-E Pellet-Type Distribution Lightning Arresters

For Circuits 1 to 15 Kv.

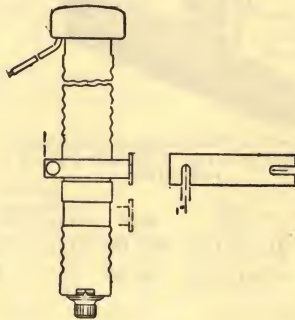
## Special Hangers

In addition to the standard hangers shown on the preceding page, pellet arresters are available with special hangers, as shown in the following sketches. Arresters with special hangers have the same price as arresters of the same rating with standard hangers. To determine the number of an arrester with a special hanger, first select the standard arrester from Table 1, 2, 3, or 4, and then refer to Table 5 for the number of the corresponding arrester with the special hanger desired.

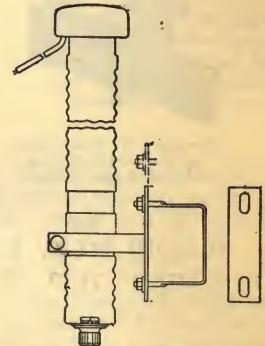
For complete description, ask for Bulletin GEA-2975.



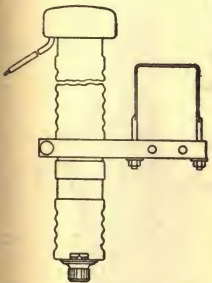
Bolt-Type Crossarm Hanger,  
Style A



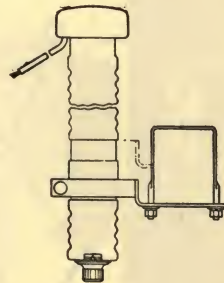
Bolt-Type Crossarm Hanger,  
Style B



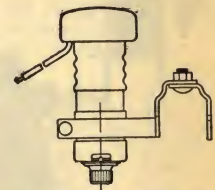
Clamp-Type Crossarm Hanger,  
Style C



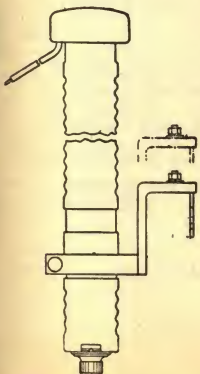
Clamp-Type Crossarm Hanger,  
Style D



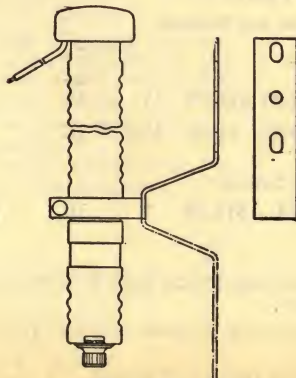
Clamp-Type Crossarm Hanger,  
Style E



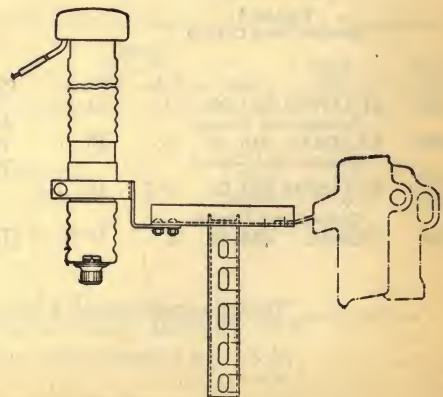
Hook-Type Crossarm Hanger,  
Style F



Hook-Type Crossarm Hanger,  
Style G



Direct Pole Hanger,  
Style H



Combination Pole Hanger,  
Style I



## G-E Hi-Stroke Rural Lightning Arresters

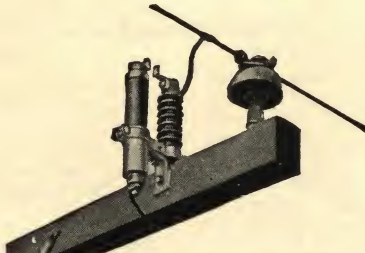
The new G-E hi-stroke arrester is a heavy duty expulsion-type arrester, having exclusive features of construction. Designed specifically for rural systems, it has high lightning discharge capacity and combines an efficiency in impulse protective level and long operating life heretofore unavailable in expulsion-type arresters. Hi-stroke arresters for separate mounting utilize the same arrester element (0-1200 amperes rms. interrupting rating) and have the same performance characteristics as those furnished since 1944 on Type HBA rural line transformers and which have already established an excellent service operating record on many rural systems.

## Separate Mounting



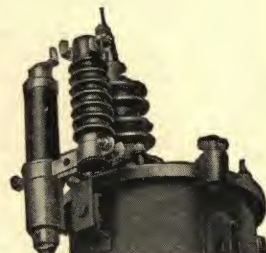
Arrester for Mounting on Crossarm, Using Clamp-Type Hanger

Circuit Volts	Model No.	Each	APPROX. Wt., Lb.	
			Net	Ship.
4800	9LA17B21	\$27.00	9	11
7200 } 7620 }	9LA17B31	34.00	9½	12



Arrester for Mounting on Crossarm, Using Bracket for Through-Bolt or Lag Screw

Circuit Volts	Model No.	Each	APPROX. Wt., Lb.	
			Net	Ship.
4800	9LA17B22	\$27.00	7½	10
7200 } 7620 }	9LA17B32	34.00	8	11



\*Arrester for Transformer Mounting

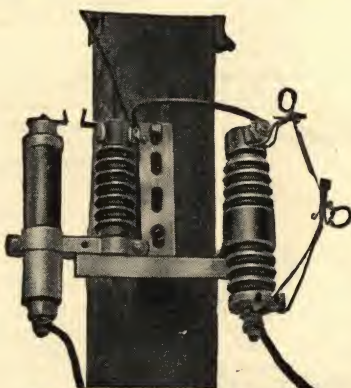
Circuit Volts	Model No.	Each	APPROX. Wt., Lb.	
			Net	Ship.
7200 } 7620 }	*9LA17B32	\$34.00	8	11

## Typical Combination Mountings of Hi-Stroke Arrester and G-E Distribution Fuse Cutouts



†Hi-Stroke Arrester for Clamp-Type Crossarm Mounting with G-E Enclosed Primary Fuse Cutout

Circuit Volts	Model No.	Each	APPROX. Wt., Lb.	
			Net	Ship.
4800	9LA17B21	\$27.00	9	11
4800	6X2431A	\$10.75	8	10
7200 } 7620 }	9LA17B31	\$34.00	9½	12
\$7500	6X242A	\$13.60	11	13



†Hi-Stroke Arrester with T-Bracket for Direct-to-Pole Mounting with G-E Flip-Open Fuse Cutout

Circuit Volts	Model No.	Each	APPROX. Wt., Lb.	
			Net	Ship.
4800	9LA17B23	\$27.00	14	15
7200 } 7620 }	9LA17B33	34.00	14½	16
\$7500	9F17B22	\$11.00	8	10



†Hi-Stroke Arrester for Clamp-Type Crossarm Mounting with G-E Open-Type Dropout Fuse Cutout

Circuit Volts	Model No.	Each	APPROX. Wt., Lb.	
			Net	Ship.
4800	9LA17B21	\$27.00	9	11
4800	9F3F12	\$17.00	12	15
7200 } 7620 }	9LA17B31	\$34.00	9½	12
\$7500	9F3F22	\$19.00	14	17

\*Interchangeable with 9 kv. pellet arrester mounted on tank bracket of early designs of Type HBA, 7200-volt, single-bushing transformers.

†Will also accommodate enclosed or open-type dropout cutouts listed in Tables 1 and 3 respectively.

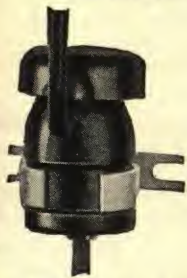
‡Will also accommodate the flip-open cutout listed in Table 2.

§Cutouts rated 7500/12,500 Gr Y volts can be used on grounded-neutral circuits where the voltage that an individual cutout is required to interrupt does not exceed 8 kv. rms.

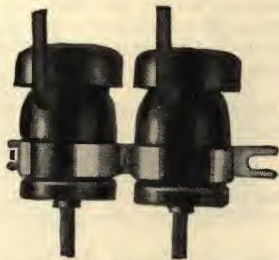


### G-E Low Voltage Pellet-Type Lightning Arresters

0 to 650 Volts—Altitude, 0 to 6000 Feet



Model No. 9LA10A202 Single-Pole Pellet Arrester with Mounting Bracket



Model No. 9LA10A204 Double-Pole Pellet Arrester with Mounting Bracket

For outdoor service, crossarm or pole mounting, on railway signal lines or secondary power lines, for protection of railway signal transformers, distribution-transformer secondaries, autotransformer boosters, cables, and other line apparatus in the 0 to 650-volt class.

The single-pole arrester unit consists of a series gap and a pellet valve column completely housed in a wet-process porcelain container.

The double-pole arrester consists of two single-pole units mounted in a single hanger. This arrester is economically advantageous on single-phase, 2-wire circuits.

Model No.	Each	No. of Poles	Circuit Voltage Rating Rms.	Maximum Permissible Line-to-Ground Voltage, Rms.	Ship. Wt. Lb.
*9LA10A202	\$6.50	1	0-650	650	2
†9LA10A204	13.00	2	0-650	650	4

\*Use two arresters at each single-phase installation and three arresters at each 3-phase installation.

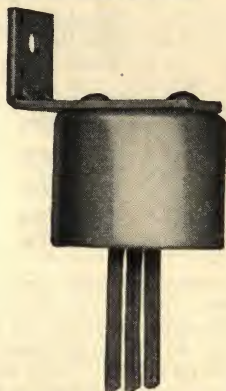
†Use one arrester at each single-phase installation.

### G-E Pellet Meter or Service Protectors

115/230 Volts—Altitude, 0 to 6000 Feet



Model No. 9LA15A1 Pellet Protector for Direct Metal-Clad Mounting to Bottom Knockout Hole



Model No. 9LA15A4 Pellet Protector with Bracket for Separate Mounting

The indoor protector is designed to permit direct mounting in the knockout holes of a service switch, fuse box, meter-connection cabinet, or meter case. In some applications, it may be preferable to locate the protector on the building wall at the point where the exposed secondary circuit enters the conduit gooseneck or the service cap of the enclosed service wiring. Therefore, another design is provided for such separate outdoor mounting.

For 115-volt, single-phase, 2-wire; or 115/230-volt, single-phase, 3-wire grounded neutral, secondary services. For indoor or outdoor service.

Model No.	Each	Maximum Permissible Line-to-Ground Voltage, Rms.	Type of Mounting	Net. Wt. Lb.
9LA15A1	\$6.50	175	(Mounting to Bottom Knockout Hole	2
9LA15A2	7.25	175	Mounting to Side Knockout Hole	2½
9LA15A4	4.50	175	Separate Bracket Mounting	2½

For Complete Description, Ask for Bulletin GEA-2977

### G-E Thyrite Meter or Service Protectors

0 to 650 Volts—Altitude, 0 to 6000 Feet



Model No. 9LA12B3 Thyrite Protector, Three-Pole, for Indoor Installation



Model No. 9LA12B6 Thyrite Protector, Three-Pole, with Conduit Weather Cap and Mounting Bracket for Outdoor Installation

For protection of watt-hour meters, industrial power service entrances, or consumer apparatus and appliances on single or polyphase secondary circuits or services in the 0 to 650-volt class.

The case of the protector is of welded steel. Each single-pole assembly has a series gap and a Thyrite disc valve element 3 inches in diameter and  $\frac{5}{16}$  inch thick. These single-pole elements are mounted in a Textolite container, and one, two, or three of these assemblies (for single, double or three-pole protectors respectively) are sealed within the outer steel case. The bottom of the case bears complete nameplate data.

#### Indoor Service—For Mounting to Knockout Hole

The indoor design is arranged for mounting directly in a knockout hole in the meter case or connection box.

Model No.	Each	No. of Poles	Circuit Voltage Rating Rms.	Maximum Permissible Line-to-Ground Voltage, Rms.	Net Wt. Lb.
9LA12B1	\$16.00	1	0-650	650	4
9LA12B2	22.00	2	0-650	650	4½
9LA12B3	25.00	3	0-650	650	5

#### Outdoor Service—For Separate Bracket Mounting

The outdoor design is provided with a conduit weather cap and mounting bracket as illustrated.

9LA12B4	\$18.00	1	0-650	650	4½
9LA12B5	24.00	2	0-650	650	5
9LA12B6	27.00	3	0-650	650	5½

#### Number of Arresters Required at Installation

Use two single-pole arresters at each single-phase installation. Use three single-pole arresters at each 3-phase installation. Use one 2-pole arrester at each single-phase installation. Use one 3-pole arrester at each 3-phase installation.



## G-E Equipment for the Lightning Protection of A.C. Rotating Machines

Thorough studies have advanced the knowledge of protection for a.c. rotating machines from lightning voltages. This problem applies to a.c. generators, synchronous condensers, and large motors subjected to impulse voltages, either from directly connected exposed overhead lines, or from those transmitted to the machine through transformers.

Lightning protection of a.c. rotating machines is obtained by a combination of line-type arresters, located a short distance out from the station on each exposed line which is directly connected to the machine; by special Pyranol filled protective capacitors, and by station-type Thyrite lightning arresters in parallel with the protective capacitors, installed on the bus or at the machine terminals.

This equipment is easily installed and requires no maintenance. The fixed charges are insignificant. When it is con-

sidered that as high as 25 per cent of machine failures have been known to be caused by lightning, and that a single machine failure can result in a loss which is far greater in comparison with the cost of protective equipment, adequate protection is plainly a low cost insurance and a sound investment.

Hundreds of equipments which represent the advanced form of protection from lightning have been applied since 1929. Some of the earliest applications were made for protection of machines which had failed repeatedly from lightning, and since the protective equipment was applied, no further failures have occurred.

The table below shows the G-E equipment required for any given service application, and is applicable for protection of machines of practically any type or manufacture.

Machine	Normal Phase-to-Phase Voltage Rating	*Connection	FOR INSTALLATION AT MACHINE TERMINALS OR ON MACHINE BUS				FOR INSTALLATION ON DIRECTLY CONNECTED EXPOSED OVERHEAD LINES			
			G-E Protective Capacitor for Indoor and Outdoor Service		G-E Station-Type Thyrite Arrester for Indoor and Outdoor Service		†G-E Pellet Arresters, Line Type			
			No. of Line Leads	Poles	No.	Units Required per Installation	Model No.	Units Required per Installation	Model No.	Units Required per Installation
0-650		Single-Phase, 1 Side Grd.	1	1	‡25F424	1	‡9LA12B1	1	9LA10A202	1
0-650		Single-Phase, Nongrd.	2	2	‡25F425	1	‡9LA12B2	1	9LA10A204	1
0-650		3-Phase, Nongrd. or Grd. Y	3	3	‡25F426	1	‡9LA12B3	1	9LA10A202	3
2400		Single-Phase, 1 Side Grd.	Clamp-Type Terminals	1	18F26	1	9LA1G289	1	9LA10B2	1
2400		Single-Phase, Nongrd.		2	18F27	1	9LA1G289	2	9LA10B2	2
2400		2-Phase, 4-Wire		2	18F27	2	9LA1G289	4	9LA10B2	4
2400		3-Phase, Nongrd. or Grd. Y		3	18F28	1	9LA1G289	3	9LA10B2	3
4160		Single-Phase, 1 Side Grd.		1	18F107	1	9LA1G290	1	9LA10B4	1
4160		3-Phase, Nongrd.		3	18F58	1	9LA1G290	3	9LA10B4	3
4160		3-Phase, Grd. Y		3	18F58	1	9LA1G289	3	9LA10B2	3
4800		3-Phase, Nongrd.		1	18F29	3	9LA1G291	3	9LA10B4	3
4800		3-Phase, Grd. Y		1	18F29	3	9LA1G290	3	9LA10B4	3
6900		3-Phase, Nongrd.		1	18F30	3	9LA1G292 or 9LA1G295	3	9LA10B5	3
6900		3-Phase, Grd. Y		1	18F30	3	9LA1G291	3	9LA10B4	3
11500		3-Phase, Nongrd.		1	18F35	‡3, **6	9LA1G293	3	9LA10B6	3
11500		3-Phase, Grd. Y		1	18F35	3	9LA1G292	3	9LA10B5	3
13800		3-Phase, Nongrd.		1	18F59	‡3, **6	9LA1G294	3	9LA10B7	3
13800		3-Phase, Grd. Y		1	18F59	3	9LA1G293	3	9LA10B6	3

\*The same capacitors are applicable to either grounded or ungrounded neutral circuits. However, the arresters for machines 2400 volts and above have lower valve ratings for grounded-neutral circuits than for ungrounded-neutral circuits. The listing of arresters for grounded-neutral machines is premised on the circuit neutral's being solidly and directly grounded. If the machine neutral or circuit neutral is grounded through resistance or reactance, ask for assistance in making selection of arresters.

†The pellet arresters listed for machines 2400 volts and above, can also be used in place of station-type Thyrite arresters for application at the terminals of rotating machines below 1000 kva. This application is recommended if economy of protection necessitates lower cost though less efficient protection.

‡For indoor service only.

§These arresters are Thyrite meter protectors.

¶This arrester, Model No. 9LA1G295, rated 1.5 kv., provides somewhat better protection than the Model 9LA1G292 unit rated 9 kv., and can be used wherever there is little, if any, risk of the system line-to-ground voltage exceeding the arrester's maximum line-to-ground rating of 7.5 kv. rms., under any condition of operation.

||Where machines have no direct connection to exposed overhead lines, and where connection to transmission lines is not through Y-Y or autotransformers, use only one capacitor unit (0.25 muf.), line-to-ground.

\*\*Where machines are directly connected to exposed overhead lines, or are connected through Y-Y or autotransformers to transmission lines, use two capacitor units in parallel per phase to obtain a capacitance phase-to-ground of 0.5 muf. This method will limit reflections within the winding of delta connected machines or at the neutral point of Y-connected machines which have their neutrals isolated or grounded through a resistance that is higher than the surge impedance of the machine winding. In general, if the neutral of a machine is grounded through a resistance of less than 50 ohms, positive reflections at the machine neutral will not occur. If a machine neutral is grounded through a reactance of less than 5 ohms (60-cycle basis), positive reflections at the machine neutral will be negligible when 0.25 muf. capacitance phase-to-ground at the machines is used. Hence, when the machine neutral is grounded through a resistance of less than 50 ohms or through a reactance of less than 5 ohms (60-cycle basis), only one capacitor unit (0.25 muf. phase-to-ground) will be required. Where two or more machines are operated in parallel, with the neutral of only one machine grounded, the capacitor applied on the machine bus for protection of all machines, or applied at the terminals of machines having neutrals ungrounded, should be 0.5 muf. capacitance phase-to-ground (2 capacitor units in parallel per phase). This method limits impulse voltage reflections at the neutrals of those machines that have ungrounded neutrals.

NOTE: For altitudes above 6000 feet, ask for engineering recommendations.



## G-E Equipment for the Lightning Protection of A.C. Rotating Machines



Fig. A  
No. 18F30  
Capacitor  
Unit



Fig. B  
No. 18F28 Capacitor  
Unit



Fig. C  
No. 25F426  
Capacitor  
Unit



Fig. C  
No. 25F429  
Capacitor  
Unit



Fig. D  
Line-Type Pellet  
Lightning  
Arrester

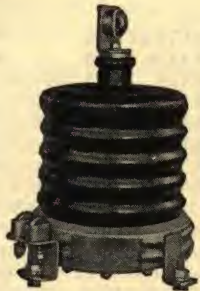


Fig. E  
Model 9LA1G291 Thyrite  
Station-Type Lightning  
Arrester

### Special Pyranol Protective Capacitors with Built-In Discharge Resistors

*Voltage Rating	Indoor No.	Each	Outdoor No.	Each	Poles per Unit	Muf. per Pole	Net Wt. Lb.	Ship. Wt. Lb.
0-650	25F424	\$10.80	.....	.....	1	2.0	3	6
0-650	.....	.....	25F427	\$13.00	1	2.0	5	8
0-650	25F425	13.30	.....	.....	2	2.0	4	7
0-650	.....	.....	25F428	15.50	2	2.0	6	9
0-650	25F426	16.65	.....	.....	3	2.0	5	8
0-650	.....	.....	25F429	18.85	3	2.0	7	10
2400	18F26	75.00	18F26	75.00	1	0.5	24	35
2400	18F27	85.00	18F27	85.00	2	0.5	24	35
2400	18F28	95.00	18F28	95.00	3	0.5	30	40
4160	18F107	125.00	18F107	125.00	1	0.5	24	35
4160	18F58	170.00	18F58	170.00	3	0.5	65	80
4800	18F29	120.00	18F29	120.00	1	0.5	35	45
6900	18F30	135.00	18F30	135.00	1	0.5	50	65
11500	18F35	200.00	18F35	200.00	1	0.25	65	80
13800	18F59	250.00	18F59	250.00	1	0.25	80	100

### Station-Type Thyrite Arresters

Arrester Maximum Voltage Rating	Indoor No.	Each	Outdoor No.	Each	Poles per Unit	Net Wt. Lb.	Ship. Wt. Lb.
Line-to-Grd. Rms.	.....	.....	.....	.....	.....	.....	.....
650	9LA12B1	\$14.00	.....	.....	1	3	4
650	.....	.....	9LA12B4	\$16.00	1	3 1/2	4 1/2
650	9LA12B2	19.00	.....	.....	2	3 1/2	4 1/2
650	.....	.....	9LA12B5	21.00	2	4	5
650	9LA12B3	22.00	.....	.....	3	4	5
650	.....	.....	9LA12B6	24.00	3	4 1/2	5 1/2
3000	9LA1G289	120.00	9LA1G289	120.00	1	55	65
4500	9LA1G290	146.00	9LA1G290	146.00	1	58	67
6000	9LA1G291	146.00	9LA1G291	146.00	1	60	70
7500	9LA1G295	180.00	9LA1G295	180.00	1	65	80
9000	9LA1G292	180.00	9LA1G292	180.00	1	70	85
12000	9LA1G293	211.00	9LA1G293	211.00	1	75	90
15000	9LA1G294	297.00	9LA1G294	297.00	1	90	105

\*Capacitor rating should be selected according to the normal phase-to-phase voltage rating of rotating machine, regardless of whether circuit is grounded or ungrounded neutral. Capacitor can be used where machine phases-to-phase voltage does not exceed 10 per cent above listed capacitor rating. These protective capacitors are suitable for 25, 40, 50, or 60-cycle systems.

For Complete Description, Ask for Bulletin GEA-1743

## G-E Reclosing Fuse Cutouts



5000 Volts, 50 Amperes



7500/12,500 Gr-Y Volts,  
50 Amperes

### Reclosing Fuse Cutouts with Clamp-Type Crossarm Hangers

The G-E reclosing fuse cutout restores service within one second after a temporary fault, by a second fuse link which is connected in the circuit after the first fuse link blows. This interruption is so brief that motors and other devices will continue in service.

If the line is patrolled after a storm, and a cutout found that indicates the first fuse has blown, this fuse link can be easily renewed by the use of a jumper, without interrupting service.

When the first fuse link is blown, positive visual indication is given by a red indicator which projects below the door and is readily visible from the ground. In addition, the door of the 50-ampere cutout is pushed out at bottom.

When the second fuse link is blown, the reclosing door drops out to a horizontal position, indicating that the circuit is open. All current transfer contacts are silver plated.



Cutout in Indicating Position

The cutout is entirely sleet-proof and will restore service after a temporary fault by connecting the second fuse link into the circuit under the most severe sleet conditions, with the door firmly frozen shut.



Cutout in Drop-Out Position

### Cutout Complete with Two Fuse Holders and †Clamp-Type Crossarm Hanger

No.	Each	*Voltage Rating	†Current Rating Amperes	Ship. Wt. Lb.
9F6R100	\$30.00	5000	50	13
9F6R200	33.00	7500/12,500 Gr-Y	50	14
9F6R300	60.00	5000	100	32
9F6R400	65.00	7500/12,500 Gr-Y	100	36

\*Cutouts rated 7500/12,500 Gr-Y volts may be used on grounded neutral circuits where the voltage that an individual cutout has to interrupt does not exceed 8 kv. and where the insulation to ground meets the operating requirements.

†The interrupting capacity of 50-ampere cutouts is 1200 rms. amperes at 60 cycles; 100-ampere cutouts, 3000 rms. amperes at 60 cycles.

†These cutouts in 50-ampere ratings can be supplied on order with any of the special hangers listed for the enclosed indicating and drop-out fuse cutouts.

### Complete Reclosing Door for Use with G-E Indicating and Drop-Out Fuse Cutout, 5000 or 7500/12,500 Gr-Y Volts

The same housing is used as with the standard G-E enclosed indicating fuse cutouts. Therefore, the reclosing door can be installed on any 50 or 100-ampere indicating and drop-out cutout now in service.

No. 73X710, for 50-Ampere Cutout.....each \$25.00  
No. 73X854, for 100-Ampere Cutout.....each 45.00

Send for Bulletin GEA-3448 for Complete Description



## G-E Enclosed Indicating and Dropout Fuse Cutouts



Cutout provides for positive indication of outages in either of two ways, depending on preference:

**As an Indicating Cutout.** When a fuse link melts, door opens at bottom sufficiently to give visual indication that circuit is open.

**As a Dropout Cutout.** Door opens to horizontal position. This not only gives indication that circuit is open, but also removes fuse holder from circuit. In this position, door and fuse holder are isolated, and open end of fuse holder is protected from even a driving rain.

Change from indicating to dropout operation is easily made. All current transfer contacts are silver plated.

Exclusive features: complete interchangeability of three doors—indicating and dropout door with single fuse holder, automatic reclosing door with two fuse holders, and disconnecting-blade door; same doors can be used with 5000-volt or 7500/12,500 Gr-Y-volt cutouts in same amp. rating.

Indicating and dropout cutouts can easily be converted into disconnecting switches by substituting disconnecting-blade door, complete with flexible copper connector, for the door and fuse holder. These disconnecting doors are not designed to open circuit while carrying load current.

A disconnecting door installed in 50-ampere cutout permits cutout to be used as a 100-ampere disconnecting switch. One installed



No. 3995930G1 100-Ampere Disconnecting-Blade Door For 50-Ampere Cutouts

## With Disconnecting-Blade Door

in 100-ampere cutout can be used as 200-ampere disconnecting switch. Where circuit is to remain disconnected for a period of time, flexible connector is uncoupled from upper terminal on door, pulled down, and then spring-actuated contact arm is pushed back and securely hooked to door so that it is completely out of circuit when door is closed. Flexible connector then protrudes from bottom of cutout, giving positive visual indication that the circuit is disconnected.

## Cutout with Disconnecting Blade Instead of Fuse Holder

No.	Each	*Voltage Rating	Current Rating, Amp.	Type of Hanger	Ship. Wt., Lb.
9F6A13	\$10.75	5000	100	Clamp	11
9F6A23	13.70	7500/12,500 Gr-Y	100	Clamp	12
9F6A33	23.75	5000	200	Clamp	26
9F6A43	28.75	7500/12,500 Gr-Y	200	Clamp	33

\*Cutouts rated 7500/12,500 Gr-Y volts may be used on grounded neutral circuits where voltage that individual cutout has to interrupt does not exceed 8 kv. and where insulation to ground meets operating requirements.

For Complete Description, Ask for Bulletin GEA-3448

## Parts for Enclosed Indicating and Dropout Fuse Cutouts

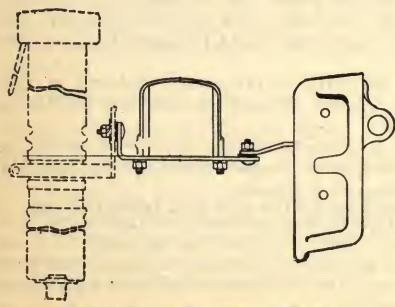
No.	Each	Description	Cutout Voltage Rating	Current Rating, Amp.
2928558G4	\$6.00	Door Complete with Toggle Mechanism and Fuse Holder.	5000 or 7500/12,500 Gr-Y	50
3906372G2	10.00	Door Complete with Disconnecting Blade, Rated 100 Amperes.	5000 or 7500/12,500 Gr-Y	50
3995930G1	5.45	Door Complete with Disconnecting Blade, Rated 200 Amperes.	5000 or 7500/12,500 Gr-Y	100

## Hangers

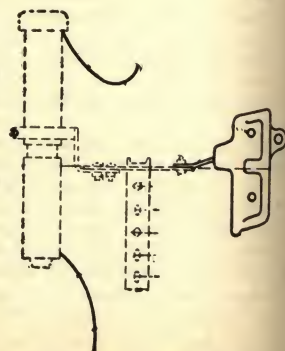
Clamp-type crossarm hanger for 50-ampere fuse cutout provides for mounting cutout in vertical position or at an angle. In either position, cutout can be turned to any desired horizontal angle, and locked firmly in position.

The 100-ampere cutout, heavier than the 50-ampere, is arranged for vertical mounting only. Hanger is identical with smaller one, except that arm has only one hole, and parts are stronger.

In addition to the clamp-type hanger, 50-ampere fuse cutouts are available with hangers for combination of mounting with G-E pellet arresters.



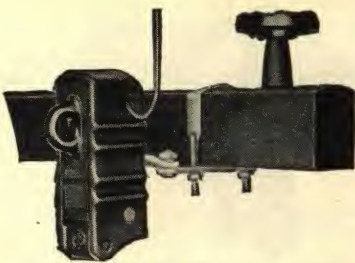
Combination Crossarm Hanger



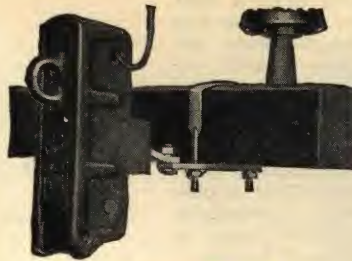
Combination Pole Hanger (T-Bracket Included with Arrester, Not with Cutout)



## G-E Porcelain-Enclosed Non-Indicating Fuse Cutouts



No. 6X2433A, 50-Ampere,  
5000 Volts



No. 6X242A, 50-Ampere,  
7500/12500 GR-Y Volts



No. 6X240A, 100-Ampere,  
7500/12500 GR-Y Volts

The G-E porcelain-enclosed fuse cutout provides a high degree of overcurrent protection under all conditions.

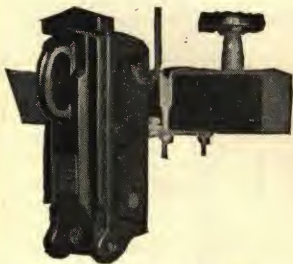
Housing is made of G-E wet-process porcelain. Barriers, which mesh with barriers on the Textolite door, prevent hot conducting gases from bridging the space between the contacts.

Full floating contact clips and terminals are self-aligning. All current carrying contacts are silver plated.

The fuse-holder tube consists of a vulcanized fiber tube over which is wound laminated Textolite having a linen-fabric base. In this way, a strong, dense, and homogeneous tube without molding seams is produced.

### Cutout Complete with Fuse Holder

No.	Each	*Voltage Rating	†Current Rating, Amp.	Type of Hanger	Shp. Wt., Lb.
6X2433A	\$10.75	5000	50	Clamp	10
6X24313A	10.75	5000	50	Comb. Crossarm	10
6X242A	13.60	7500/12,500 Gr-Y	50	Clamp	13
6X241A	23.75	5000	100	Clamp	30
6X24128A	23.75	5000	100	Comb. Crossarm	30
6X240A	28.50	7500/12,500 Gr-Y	100	Clamp	31



No. 6x241A, 100-Ampere,  
5000 Volts

### Cutout with Disconnecting Blade Instead of Fuse Holder

6X2432A	\$10.75	5000	100	Clamp	11
6X2422A	13.60	7500/12,500 Gr-Y	100	Clamp	14
6X2412A	23.75	5000	200	Clamp	32
6X2402A	28.50	7500/12,500 Gr-Y	200	Clamp	33

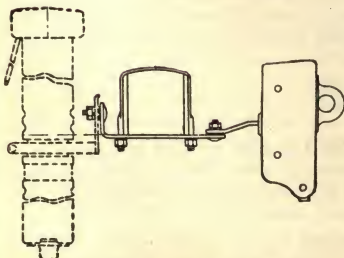
\*Cutouts rated 7500/12,500 Gr-Y volts may be used on grounded neutral circuits where the voltage that an individual cutout has to interrupt does not exceed 8 kv. and where the insulation to ground meets operating requirements.

†The interrupting capacity of 50-ampere cutouts is 1200 rms. amperes at 60 cycles; 100-ampere cutouts, 3000 rms. amperes at 60 cycles.

### Hangers

In addition to the clamp-type crossarm hanger illustrated above, 50-ampere porcelain-enclosed non-indicating fuse cutouts are available with the combination crossarm hanger shown below.

The clamp-type crossarm hanger for the 50-ampere fuse cutout provides for mounting the cutout either in a vertical position or at an angle. In either position, the cutout can be turned to any desired horizontal angle. The 100-ampere cutout, being heavier than the 50-ampere cutout, is arranged for vertical mounting only. Its hanger is identical with that of the smaller cutouts except that the arm has only one hole, and the parts are proportionately stronger.



### Parts for Porcelain-Enclosed Non-Indicating Fuse Cutouts

No.	Each	Description	Cutout Voltage Rating	Cutout Current Rating, Amperes
9F4A31	\$2.85	Fuse Holder.....	5000	50
9F4A21	2.85		7500/12,500 Gr-Y	50
9F4A11	4.75		5000	100
9F4A11	4.75		7500/12,500 Gr-Y	100
29X843	2.85	100-Ampere Disconnecting Blade.....	500	50
29X842	2.85		7500/12,500 Gr-Y	50
29X841	4.75	200-Ampere Disconnecting Blade.....	5000	100
29X841	4.75		7500/12,500 Gr-Y	100

Send for Bulletin GEA-2390 for Complete Description



G-E Heavy Duty Enclosed Fuse Cutouts



200-Amp., 5000-Volt Cutout Mounted on Crossarm

General Electric offers a 5000-volt, 200-ampere, indicating fuse cutout which has the same outstanding advantages of safety, reliability, and ease of fuse renewal as the G-E porcelain-enclosed indicating and dropout fuse cutouts.

This cutout has an interrupting rating of 5000 rms. amperes at 60 cycles. It is particularly applicable for use on banks of transformers that feed industrial plants, or for sectionalizing heavy feeders.

The fuse cutout can be converted to a 400-ampere disconnect cutout simply by replacing the fuse holder with a disconnect door.

With Interchangeable Doors

Fuse Cutout Complete with Fuse Holder and Hanger

Voltage Rating	No.	Each	Current Rating	Current Interrupting Rating	APPROX.	
			100% Basis	Rms., Amp., at 60 Cy.	Net Wt., Lb.	Ship.
5000	9F16A7	\$55.00	200	5000	35	45

Cutout Having Disconnect Blade Instead of Fuse Holder

5000	9F16A70	55.00	400	....	35	45
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Parts for Cutouts Listed Above

No.	Each	Description	APPROX. Wt., Lb.	
			Net	Ship.
79X307	\$23.50	Door, Complete with Fuse Holder	6 1/2	7 1/2
79X311	23.50	Door, Complete with 400-Ampere Disconnect Blade.....	6 1/2	7 1/2

Universal Cable-Type Fuse Links for Heavy Duty Cutouts

Ampere Rating 100% Basis	No.	Each	Overall Length Inches	Carton Quantity	Ship. Wt. Lb.
125	9F1C106	\$1.60	20	5	4 1/2
150	9F1C88	1.60	20	5	4 1/2
200	9F1C89	1.60	20	5	4 1/2

G-E Indicating Secondary Fuses

Outdoor Type

The G-E indicating secondary fuse is an outdoor cartridge-type, non-renewable fuse designed to permit transformer secondary banking, transformer secondary protection, and the isolating of service entrance faults at the minimum initial expense.

The fuse element is totally enclosed and protected from the weather and cannot be twisted when swayed by the wind.

It can easily be installed with any type of overhead secondary construction by means of conventional solderless connectors.

For circuits 600 volts and below.

Packed 25 fuses in a carton, 200 amp. and less.

Packed 5 fuses in a carton, 250 and 300 amp.



Cutaway View

No.	Each	Amperes	Ship. Wt. Lb. per Ctn.
9F13A1	\$ .90	5	3
9F13A2	.90	8	3
9F13A3	.90	10	3
9F13A4	.90	15	3
9F13A5	.90	20	3
9F13A6	.90	25	3
9F13A7	.90	30	3
9F13A8	.90	40	3
9F13A9	.90	45	3
9F13A10	.90	50	3
9F13A11	1.00	75	4 1/2
9F13A12	1.00	85	4 1/2
9F13A13	1.00	95	4 1/2
9F13A14	1.00	100	4 1/2
9F13A17	2.00	125	10 1/2
9F13A15	2.00	150	10 1/2
9F13A16	2.00	200	10 1/2
9F13A18	4.25	250	6 1/4
9F13A19	4.25	300	6 1/4

G-E Open Fuse Cutouts



100-Amp., 7500-Gr-Y-Volt Cutout Mounted On Crossarm

The G-E open-type dropout fuse cutout provides over-current protection throughout the full range of fault currents up to their rated interrupting capacity, on distribution circuits of 15,000 volts and below.

Their new bird-proof construction, attained by cementing the mounting support and upper and lower contact supporting studs into the porcelain insulator in such positions that the mounting support and hanger are confined to the opposite side from the live parts, makes possible a freedom from unnecessary outages heretofore unattained with any open-type cutout.

The fuse holder, which drops to completely open position for easy identification of blown fuse, is mounted on hinge located directly under the insulator, thereby directing the recoil force in line with the center line of the insulator.

Open Fuse Cutout, Complete with Fuse Holder

Model No.	Each	*Voltage Rating	Current Rating Amperes	Type of Hanger	Ship. Wt. Lb.
9F3F11	\$17.00	5000	100	Clamp	14
9F3F12	17.00	5000	100	Comb. Clamp	15
9F3F13	17.00	5000	100	Comb. Clamp	15
9F3F21	19.00	7500/12,500 Gr Y	100	Clamp	16
9F3F22	19.00	7500/12,500 Gr Y	100	Comb. Clamp	17
9F3F23	19.00	7500/12,500 Gr Y	100	Comb. Clamp	17
9F3F31	23.60	15,000	100	Clamp	17
9F3F32	23.60	15,000	100	Comb. Clamp	18
9F3F33	23.60	15,000	100	Comb. Clamp	18

Fuse Holder, Complete, for Open-Type Fuse Cutouts

Model No.	Each	Cutout Voltage Rating	Cutout Current Rating Amperes
9F3F11	\$8.00	5000	100
9F3F12	8.00	5000	100
9F3F12	8.00	5000	100
9F3F21	8.00	7500/12,500 Gr Y	100
9F3F22	8.00	7500/12,500 Gr Y	100
9F3F23	8.00	7500/12,500 Gr Y	100
9F3E31	9.00	15,000	100
9F3E32	9.00	15,000	100
9F3E33	9.00	15,000	100

No. 2928531G2 Switch Hooks

A malleable iron switch hook, mounted on a 42-inch treated maple pole, suitable for the operation of open-type or enclosed fuse cutouts.

Shipping weight, 3 pounds.

No. 2928531G2.....each \$5.00

\*These cutouts, rated 100 amperes on 100 per cent basis, provide short-circuit operation over the full range of fault currents, with both large and small fuse links, at full rated voltage under severe circuit conditions.

†Cutouts rated 7500/12,500 volts Gr-Y can be used on grounded neutral circuits where the voltage that an individual cutout is required to interrupt does not exceed 8 kv. and where the insulation to ground meets the operating conditions.



## G-E D.C. Capacitor-Type Arresters For D.C. Railway Circuits



0-750-Volt D.C. Capacitor-Type Arrester with Molded Insulation Cover Removed from One Terminal

The protection of d.c. electric transportation systems involves principally the protection of d.c. generators or motors. This necessitates the reduction of turn-to-turn stresses as well as major insulation stresses from line to ground. D.c. capacitor-type arresters, because of their inherent characteristics in sloping off the amplitude of the wave, provide a high degree of protection for such systems.

No.	Each	Circuit Voltage Rating Rms.	Maximum Permissible Line-to-Ground Voltage, Rms.	Ship. Wt. Lb.
18F303	\$33.00	0-750	750	13
25F35	75.00	751-2000	2000	30
*18F34	207.00	2001-3900	3900	62

\*Includes mounting bracket.

## G-E Flip-Open Fuse Cutouts



The G-E flip-open fuse cutout provides overcurrent protection by means of a fuse link, without the conventional hinged fuse holder tube. Expulsion action is obtained entirely by the fuse link tube, which is a unitary part of the fuse link. The fuse link is supported in tension between spring contact arms, which pull the lower cable terminal out of the fuse link tube when the fuse link melts.

Its simple construction provides an inexpensive cutout for rural-line service where the circuit conditions impose a less severe interrupting duty on the cutout, and where the advantage of the hinged fuse holder type of conventional cutout may be dispensable.

Mechanical and electrical reliability is embodied in these cutouts. Their ability to meet the shocks and stresses of service has been demonstrated by flashover tests, both wet and dry, short-circuit tests, tension test of the metal-to-porcelain joints, and accelerated life tests.

*Voltage Rating	†Current Rating Amp.	Type of Hanger	APPROX. Wt., Lb.		No.	Each
			Net	Ship.		
7500/12500	50	Clamp	7½	9	9F17B21	\$11.00
	50	Comb. Clamp	8	10	9F17B22	11.00
	50	Comb. Clamp	8	10	9F17B23	11.00
	50	Bushing	5¼	6½	9F17B208	9.00
15000	50	Clamp	9	11	9F17B31	14.00
	50	Comb. Clamp	9½	12	9F17B32	14.00
	50	Comb. Clamp	9½	12	9F17B33	14.00

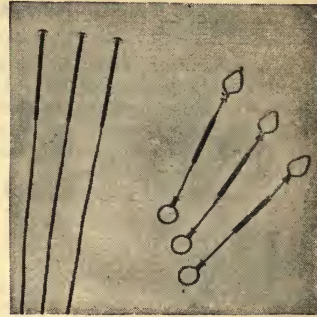
## Fuse Links for Flip-Open Fuse Cutouts

Cap. Amp. 100% Rating	No.	Each	Ship. Wt., Lb. per Ctn. of 25	Cap. Amp. 100% Rating	No.	Each	Ship. Wt., Lb. per Ctn. of 25
1	9F1F1	\$.50	2	20	9F1F8	\$.50	2
2	9F1F2	.50	2	25	9F1F9	.50	2
3	9F1F3	.50	2	30	9F1F10	.50	3¼
5	9F1F4	.50	2	40	9F1F11	.50	3¼
8	9F1F5	.50	2	45	9F1F12	.50	3¼
10	9F1F6	.50	2	50	9F1F13	.50	3¼
15	9F1F7	.50	2	..	.....	...	...

\*Cutouts rated 7500/12,500 Gr-Y can be used on grounded neutral circuits where the voltage that an individual cutout is required to interrupt does not exceed 8 kv., and where the insulation to ground meets the operating conditions.

†These cutouts will carry 100 per cent of their rated current continuously, without the conducting parts exceeding a temperature rise of 30°C. above an ambient of 40°C., as prescribed by NEMA Standards.

## G-E Hi-Surge Universal Fuse Links



Provide maximum overcurrent protection for distribution transformers (at 1, 2, or 3 amperes), yet provide the same freedom from surge blowing as that afforded by a conventional 5-ampere fuse. For use in expulsion or flip-open type distribution fuse cutouts.

## Hi-Surge, Universal, Cable-Type Fuse Links

HI-SURGE FUSE-LINK RATING, AMPERES		Ship. Wt., Lb. per Ctn. of 25	Model No.	Each
100% or Continuous Rating	Surge Rating			
1	Equivalent to	2	9F1CH1	\$.62
2	Conventional	2	9F1CH2	.62
3	5-Amp. Fuse	2	9F1CH3	.62

## Hi-Surge, Flip-Open Fuse Links

1	Equivalent to	2	9F1FH1	\$.85
2	Conventional	2	9F1FH2	.85
3	5-Amp. Fuse	2	9F1FH3	.85

## A 100% "N"-Rated Double-Duty Fuse

Low Current—1, 2, and 3-Ampere Rating for Overcurrent Protection

High Current—5-Ampere Characteristic for Withstanding Surges

## For Transformer Installations, They Offer These Outstanding Advantages:

- Improved Overcurrent Protection** where 5-ampere minimum fusing has previously been used.
  - With the same freedom from blowing by motor starting, inrush lightning, or other surge currents.
  - Without rechecking their coordination with line-sectionalizing devices.
- Reduced Blowing by Surges** where 1, 2, or 3-ampere conventional fuses have previously been used.
  - With the same overcurrent protection.
  - With no need for rechecking their coordination with line-sectionalizing devices, in the majority of applications.

## In These Applications of Hi-Surge Fuse Links, the Only Factors to Consider Are:

- That overload currents do not exceed the fuse rating.
- That they coordinate with service entrance fuses.



## G-E Fast-Blowing Universal Cable-Type Fuse Links

For Use with All G-E Reclosing, Enclosed Indicating and Drop-Out, Enclosed Non-Indicating, and Open Type Fuse Cutouts

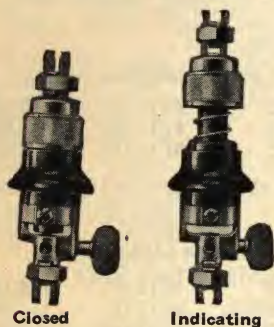
These fuse links are rated on the 100 per cent basis and are designed to carry their rated current without blowing, and to blow at not over 230 per cent rating within five minutes. All G-E fast-blowing universal cable-type fuse links may be operated safely and continuously at 100 per cent rating, with a maximum temperature rise of 30°C. for conducting parts of the fuse holder above an ambient temperature of 40°C.

Packed 25 in a carton.

No.	Each	Ampere Rating "N" (100%) Basis	Ship. Wt. Lb. per Carton	No.	Each	Ampere Rating "N" (100%) Basis	Ship. Wt. Lb. per Carton
9F1C16	\$.50	1	2	9F1C24	\$.50	25	2
9F1C17	.50	2	2	9F1C25	.50	30	3 1/4
9F1C18	.50	3	2	9F1C26	.50	40	3 1/4
9F1C19	.50	5	2	9F1C27	.50	45	3 1/4
9F1C20	.50	8	2	9F1C28	.50	50	3 1/4
9F1C21	.50	10	2	9F1C29	.60	75	7
9F1C22	.50	15	2	9F1C30	.60	85	7
9F1C23	.50	20	2	9F1C31	.60	95	7
.....	...	...	...	9F1C32	.60	100	7

Send for Bulletin GEA-1994 for complete description.

## G-E Secondary Indicating Fuse Cutouts



The G-E secondary fuse cutout gives positive indication that the circuit is open whenever a fuse link is blown, by pushing the Textolite housing down from the upper terminal cap and displaying the red fuse holder tube which is readily visible from the ground. This secondary cutout makes transformer secondary banking, transformer secondary protection, and the isolating of service entrance faults economically possible.

The fuse link is protected from the weather; in this way, maintenance is minimized. The small size and light weight of the cutout enable it to be mounted in the space between secondary lines, attached directly to the line conductor, or mounted directly on the clamp terminals of a distribution transformer (using an adapter). Cutout can be easily and safely refused.

No.	Each	Voltage Rating	*Current Rating, Amperes	Ship. Wt. Lb.
9F7A1	\$4.00	250	100	16

\*Rated interrupting capacity, 3000 rms. amperes at 60 cycles.

Send for Bulletin GEA-2261 for complete description.

## G-E Secondary Fuse Links

For Use with No. 9F7A1 Secondary Fuse Cutouts

The time-current characteristics of these links are identical with those of the G-E fast-blowing cable-type fuse links designed for coordination with motor-starting currents, with primary or secondary fuse links of other ratings, and with relays.

Packed 25 in a carton.

No.	Each	Ampere Rating "N" (100%) Basis	Ship. Wt. Lb. per Carton	No.	Each	Ampere Rating "N" (100%) Basis	Ship. Wt. Lb. per Carton
9F1S1	\$.35	5	1 1/2	9F1S8	\$.37	40	2
9F1S2	.35	8	1 1/2	9F1S9	.37	45	2
9F1S3	.35	10	1 1/2	9F1S10	.37	50	2
9F1S4	.35	15	1 1/2	9F1S11	.40	75	3
9F1S5	.35	20	1 1/2	9F1S12	.40	85	3
9F1S6	.35	25	1 1/2	9F1S13	.40	95	3
9F1S7	.37	30	2	9F1S14	.40	100	3

## G-E Universal Fuse Links

For Oil Fuse Cutouts Having Notched Carrier Plugs



Universal Fuse Link Mounted in Notched Fuse-Carrier Plug



Universal Fuse Link

### Time Current Characteristics

Universal fuse links, when used in G-E oil fuse cutouts of the proper rating, will carry continuously 100 per cent of the rated current of the fuse link. They will melt at approximately 150 per cent of their rating in 300 seconds (5 minutes).

### Application

These universal fuse links are designed for use in all oil fuse cutouts, 100 to 300 amperes, with Model No. in the 9F2E and 9F2D series. These cutouts all have notched fuse-carrier plugs, as illustrated.

Universal fuse links can also be used in all superseded designs of G-E oil fuse cutouts, in the No. 9F2C series or earlier (except 50-ampere, 2500-volt rating), simply by cutting a notch in the lower end of the wooden fuse-carrier plug. A template is included in each carton of universal fuse links to facilitate correct notching.

Packed 2 in a box; 5 boxes per carton.

Capacity Amperes 100% Rating	Model No.	Each	Ship. Wt., Lb. per Ctn. of 10
5	9F18B1	\$.85	1 1/2
10	9F18B2	.85	1 1/2
15	9F18B3	.85	1 1/2
20	9F18B4	.85	1 1/2
25	9F18B5	.85	1 1/2
30	9F18B6	.85	1 1/2
40	9F18B7	.85	1 1/2
50	9F18B8	.85	1 1/2
60	9F18B9	.95	1 1/2
75	9F18B10	.95	1
100	9F18B11	.95	1
125	9F18B12	1.20	1 1/2
150	9F18B13	1.20	1 1/2
200	9F18B14	1.20	1 1/2
250	9F18B15	1.45	3
300	9F18B16	1.45	3

### Disconnecting Blades

Copper Disconnecting Blades with Notched Ends Formed Up and Insulated with Herkolite Sleeve

No.	Each	For Cutouts of Present Design, or for Cutouts of Superseded Design Having Notched Fuse Carriers, Model No.
9218955G1	\$.45	9F2 (D or E) 2, 7, 10, 11, 27, 9F2D5, D9
9218955G2	.60	9F2 (D or E) 3, 8, 12, 13, 26
9218955G3	.80	9F2D4, 9F2D15

### For Cutouts of Superseded Design

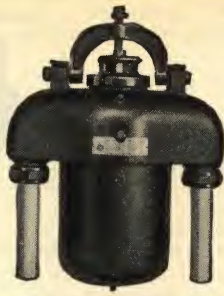
2576194G1	\$1.00	9F2 (A or C) 2, 7, 10, 11, 27
2576194G4	1.50	9F2 (A or C) 5, 9
2576194G2	1.25	9F2 (A or C) 3, 8, 12, 13, 26
2576194G3	1.50	9F2 (A or C) 4, 15



## G-E Oil Fuse Cutouts



**Pole Type**  
5000 Volts, 100 to 200  
Amperes; 7500 Volts, 100  
Amperes



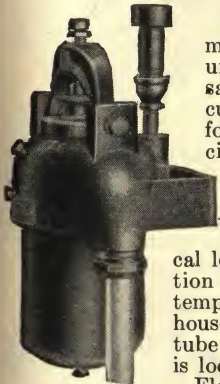
**Subway Type**  
5000 Volts, 100 and 200  
Amperes; 7500 Volts, 100  
Amperes



**Pothead Type**  
100 and 200 Amperes



**No. 73X705 Expansion  
Chamber for Subway Type  
Cutouts**



**No. 294258  
Subway-Type  
Cutout with  
Pellet Vent**

The G-E oil fuse cutout is completely metal-enclosed, with a fusible element under oil, by which the circuit is broken safely and rapidly. Standard oil fuse cutouts are available in three designs for pole, subway, or pothead service on circuits up to 7500 volts and 300 amperes.

The U-shaped universal fuse links consist of laminated-metal terminal strips, forming the vertical legs and supporting a horizontal section of fusible alloy having a low melting temperature. This horizontal section is housed in a specially formed expulsion tube of insulating material. Fuse carrier is locked in place before circuit is closed.

Flame from arc is confined within housing, and prevents ignition of explosive gases and external damage.

Fuse link is under oil—this prevents deterioration from oxidation or electrolysis.

Gases are released, but oil is confined. Subway fuse cutouts have operated for years wholly submerged in water.

Fuse links are quickly and easily replaced. Oil level can be maintained without removing cutouts from service.

Heavy self-aligning contacts make possible repeated opening under load.

Cutouts may be fused closely to load, providing simultaneously, protection against overload and heavy short circuits.

G-E oil fuse cutouts are particularly applicable for subway service, for replacement of potheads, and for installations where high current-interrupting ability is required and where high-speed operation is essential. Other locations in which they can be used to advantage are:

Where quiet operation is desirable.

Where the cutouts are exposed to smoke, corrosive fumes, salt-air, explosive gases, or inflammable dust. All indoor installations.

Where it is desired to have no exposed live parts, whether the cutout is in the open or the closed position.

They are ideal for indoor industrial applications. As no flame is expelled, and as all live parts are completely enclosed, the oil fuse cutout best meets the requirements of the National Electrical Code.

## Pole Type

Model No.	Each	*Volts	Rated Capacity Amperes	Interrupting Cap., Amp., at 60 Cycles with Universal Fuse Links	SHIPPING WEIGHT POUNDS	Oil
9F2E2	\$37.00	4330	100	6000	62	9
9F2E3	49.00	4330	200	11000	113	21
9F2D4	110.00	4330	300	11000	205	31
9F2D5	110.00	5000	300	10000	200	31
		7500	100	3750		

## Subway Type

9F2E7	\$50.00	4330	100	6000	70	9
9F2E8	68.00	4330	200	11000	127	21
9F2D15	149.00	4330	300	11000	200	26
9F2D9	149.00	5000	300	10000	200	26
		7500	100	3750		

## Pothead Type

9F2E10	\$44.00	4330	100	6000	64	9
9F2E11		5000	100	5000		
9F2E12	58.00	4330	200	11000	116	21
9F2E13		5000	200	10000		

\*The 2500-volt cutouts are suitable for operation on 4000-volt Y-connected circuits with dead grounded neutral. In all cases, two cutouts are required between lines.

†For interrupting ratings when used with superseded plain or reactive links, refer to Bulletin GEA-732.

‡The bushings on Model Nos. 9F2D9 and 9F2D15 cutouts are not the separable-sleeve type, but are designed for connection to the cables using standard splicing material.

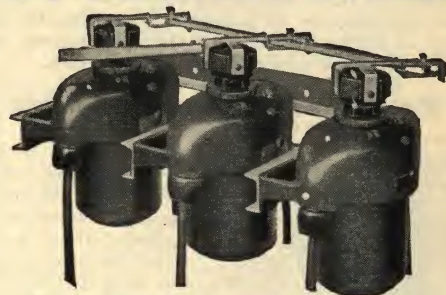
§With right-hand subway sleeve bushings.

¶With left-hand subway sleeve bushings.

||**Venting.** Subway-type cutouts usually require accessories for venting, either by means of an expansion chamber or pellet vent. Prices above do not include venting accessories which should be selected as follows:

No. 73X705 Expansion Chamber, for Use Where Complete Submersion Is Possible.....	each \$8.00
No. 294258 Pellet Vent, for Use Where Cutouts Are Not Subjected to Flooding.....	each 4.00

## Gang Operation of G-E Oil Fuse Cutouts



**Pole-Type Cutouts Arranged for Three-Phase Operation**

A simple and low cost, gang operated, three-phase assembly of standard G-E oil fuse cutouts can readily be made by the addition of a mounting rack and lever-operated mechanism for safely opening or closing the full-rated current on all three phases simultaneously.

## For Pole or Pothead Type Cutouts

RACK AND MECHANISM ONLY			FOR CUTOUTS		
No.	Each	Ship. Wt. Lb.	Model No.	Amperes	Volts
79X789	\$19.75	50	9F2E2	100	5000
79X790	23.00	60	9F2E3	200	5000
79X809	35.00	75	9F2D4	300	5000

## For Subway Type Cutouts

79X5	\$26.00	50	9F2E7	100	5000
79X6	30.00	60	9F2E8	200	5000
79X7	45.00	75	9F2D15	300	5000

Send for Bulletin GEA-732 for Complete Description



**G-E 30,000-Volt 0.5-KVA. Portable Oil Testers**

This oil tester affords a compact, convenient, and accurate means for testing oil in the field, as it combines in a single unit, a step-up transformer, a means for gradually raising the test voltage, a voltmeter to measure breakdown values, an automatic circuit breaker, and an oil-testing receptacle.

The successful operation of high voltage oil-insulated apparatus requires that the dielectric strength of the oil be maintained at a high value. Assurance that the oil is always satisfactory dielectrically is possible only by testing oil regularly.

All live parts of the equipment are enclosed and complete safety features assure full protection to the operator.

Furnished complete with 15 feet of 3-conductor attaching cord and plug.

No.	Each	Supply Voltage	Frequency Cycles	Shipping Weight Pounds
63G402	\$300.00	115	50 to 140	100
63G404	385.00	115	25 to 60	100
63G403	315.00	230	50 to 140	100
63G405	400.00	230	25 to 60	100

Send for Bulletin GEA-2935 for complete information.

**G-E No. 10-C Oil**

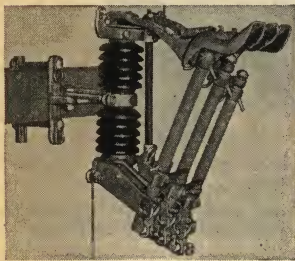
G-E No. 10-C Oil is a specially prepared insulating and cooling oil for use in transformers, feeder voltage regulators, and oil fuse cutouts.

The development of this oil and the attainment of proper characteristics and uniform quality have required the closest cooperation for many years between G-E engineers and oil refiners and involves a careful selection of proper crude oil, as well as the use and control of special refining processes applicable only to insulating oil.

Refined from selected grades of crude oil by refiners experienced in producing oil for this highly special application, this oil has the characteristics which provide both the cooling and insulating factors essential to transformer operation; it does not affect the transformer insulation, and is unaffected by these insulating materials. An important quality in transformer oil is long service life, the inherent resistance to sludge formation. Only oil known to have such properties should be used for this purpose.

**Matthews Reclosing Fuswitches**

Rating, 100 Amperes, 7500 to 15000 Volts



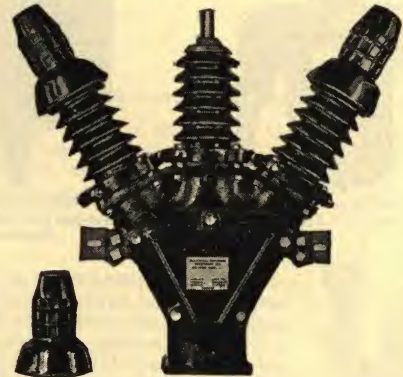
Three-shot, repeating rural line type cutout designed to give long, trouble-free service on branch lines or other locations where uninterrupted service is required. Can be mounted on pole or cross arm. When one fuse link melts from overload due to lightning, transient, short circuit, or any other cause, the first fuse holder drops

down to indicating position and second fuse holder comes into circuit in approximately 40 cycles. Service is quickly restored and Fuswitch is ready for two more operations.

No. 1810, 100 Amperes, 7500 Volts.....each \$112.00  
No. 1820, 100 Amperes, 15000 Volts.....each \$133.00

**Three-E Potheads****Indoor Types**

A complete line of Three-E indoor potheads is available in both open bushing and capnut styles. Aerial lugs, pothead bodies and entrance flanges can be supplied in all shapes and sizes to fit almost every installation requirement. Furnished as standard in 1, 2, 3, and 4 conductor units in all commercial ratings. Special potheads are also available.

**Disconnect Potheads**

Disconnect heads and dummy caps and studs are available as standard units to fit Three-E Capnut style Potheads shown.

Flexibility of these disconnect heads in fitting standard pothead studs has proved to be a very economical means of converting regular potheads into the disconnect type.

**Outdoor Capnut Potheads**

Suitable for either indoor or outdoor service these potheads feature one piece bodies with clamped bushings and front inspection plate. Construction is air and oil tight. Can be supplied as standard with many body styles and various types of entrance fittings to fit all requirements.

**Outdoor Open Bushing Potheads**

Available in 1, 2, 3, and 4 conductor units in voltages of from 2300 to 34,500.

Bushings inverted for full weather protection. Ideal for pole mounting.



## G & W Potheads

Unusually high factors of safety, generous clearances, liberal designs and accurate fit of separate parts are general characteristics of G & W Potheads.



Type T Capnut

**Type T Capnut Style** is a logical choice for general installations—indoors as well as outdoors. The positive seal against entrance of moisture also prevents leakage of compound and cable impregnating oil. Capnut potheads will withstand appreciable internal pressure and will provide the necessary protection to paper insulated cables. Available as standard for all voltages and conductor sizes, single and multiple conductor. Specify Type T for outdoors and Type NT for indoors.

**Type ES** is used wherever the disconnecting feature will add to the convenience of system operation. Inasmuch as all live parts are enclosed in porcelain, indoors or outdoors. This pothead provides hermetically sealed protection to single and multiple conductor cables. Available in three ampere ratings, 100, 250, and 500; and in three voltage ratings, 5,000, 7,500, and 15,000. Gang operated disconnecting potheads are a further convenience for quick isolation of circuits.



Type ES Disconnecting



Type N Straight Through

**Types N, P, and L** are for varnished cambric and rubber insulated cables; these are straight through style potheads and can be used indoors (or outdoors up to 600 volts). The conductors pass through the pothead without splicing and no sealing connectors are used. Hence, this style should not be used on paper insulated cables if there is an appreciable static pressure head, because taped up bushings and asphalt base compound will not seal cable oil under pressure.



Type P Porcelain Lid, 6600 Volts Indoor



Type L, 600 Volts Outdoor



Type C Flexible Band Cable Support



Type T



Type ES



Type A

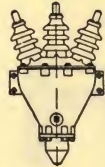


Type B

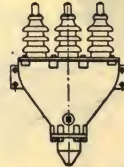
### Control Cable Heads

With or without conduit fittings on top end. Bakelite lids are furnished with proper number and size of holes for conductors. Also suitable for motor connections.

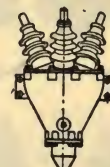
### Standard Shapes of Multiple Conductor Potheads



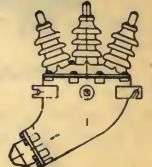
Shape B



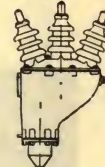
Shape C



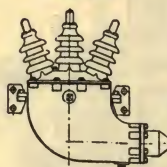
Shape D



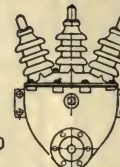
Shape BY



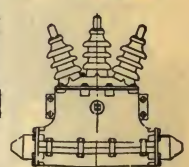
Shape BW



Shape BK



Shape BU



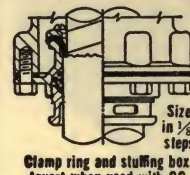
Shape BT

When ordering potheads, specify type of pothead (and whether outdoor or indoor); No. of conductors and size of conductors; voltage rating of pothead (or circuit voltage); shape of pothead, if multiple conductor; cable diameters (also style of base fittings); and whether G & W Novoid compound is wanted.

### Interchangeable Base Fittings



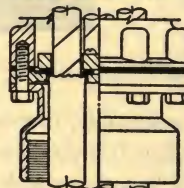
Wiping Sleeve—"WS"



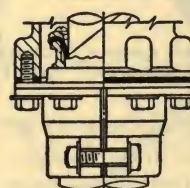
Clamp ring and stuffing box. Invert when used with CC. Symbol—"CR-SB"



Plain stuffing box. Can be drilled on job to cable size. Uses cord packing. Symbol—"SB"



Symbol—"PB" & conduit coupling "CC"



Symbol—"CR-SB" & armor clamp "AC"

Conduit couplings and armor clamps are separate fittings for attachment when required.



Conduit Bell for Closing Top of Conduit and Supporting Cables



Type D Straight Splice Boxes

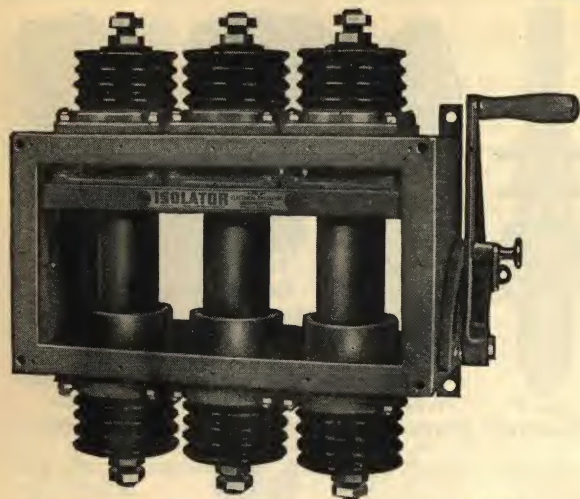


Type D 3-Way (Tee) Splice Boxes

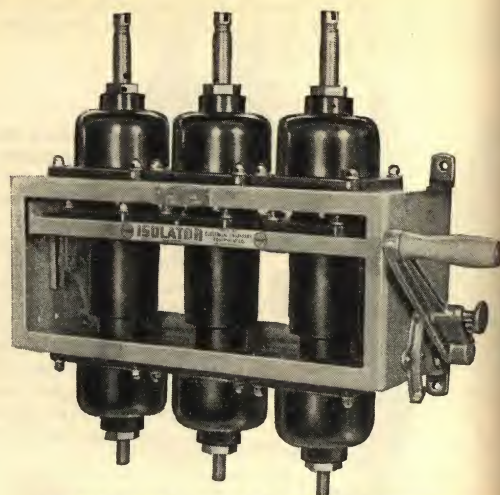
Information regarding complete line of G & W Specialties furnished on request.



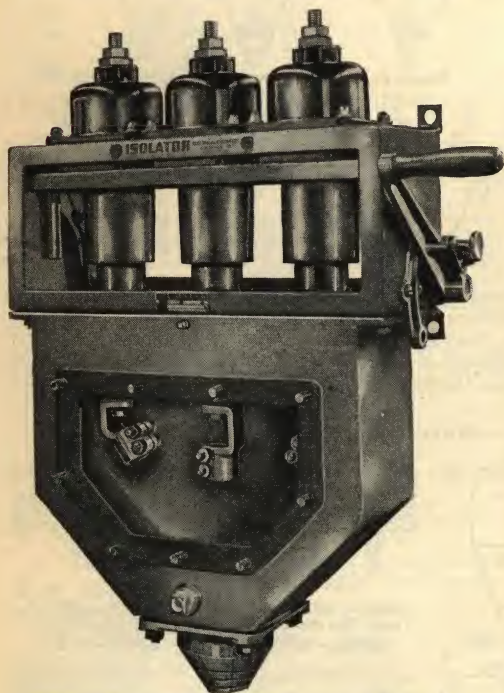
## Three-E Isolators



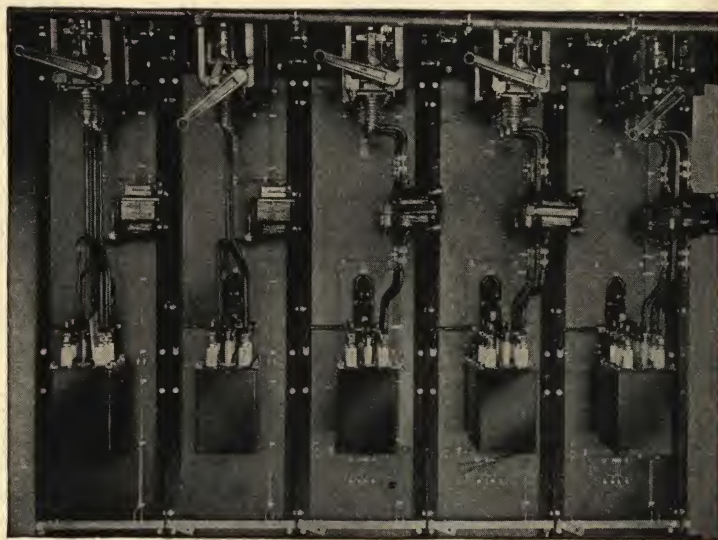
3-Phase Single Throw, 600 Ampere, 7.5 Kilovolt Isolator



3-Phase Single Throw 400 Ampere, 5 Kilovolt Load Interrupter Isolator



3-Phase Single Throw, 200 Ampere, 5 Kilovolt Cable Isolator



Rear View of Switchboard Equipped with Isolators

Three-E Isolators are essentially disconnect switches with current carrying parts enclosed in insulation. After terminal connections are made and tapped, it is a true safety-first device since it is not possible to come in contact with live parts.

The unique design of the Isolators gives them a compactness which permits of space saving in steel inclosures and bus structures, without sacrificing any proper engineering requirements.

When an Isolator is combined with a pothead body, it forms the Cable Isolator, which is an ideal device for terminating and disconnecting lead covered power cables.

Isolators and Cable Isolators have been further improved by building them with interrupter units, enabling them to open light loads and magnetizing currents.

All types of Isolators are made in voltage ratings of 5, 7.5, and 15 kilovolts, and for ampere ratings 200, 400, 600, 1200, and 2000.



### Three-E Indoor Type Disconnecting Switches

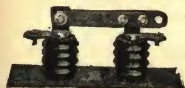
The double blade type of construction is used throughout, giving the advantages of low temperature rise, self-aligning contacts, etc. The clips are cast copper.

Built for voltages from 110 to 34,500 and ampere capacity from 100 to 5,000.

Switches can be supplied in all combinations of front and back connection, of the single throw, double throw, and transfer types with or without blade locks, for flat or pipe mounting on steel, slate, marble, ebony asbestos and alberene stone.

Insulating barriers, blade stops, and terminals can be supplied for all switches.

#### Single Throw and Double Throw Types



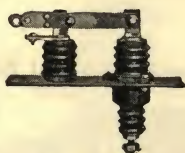
Type W-1



Type W-2



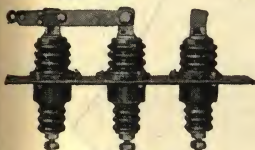
Type W-5



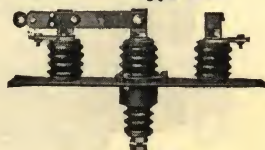
Type W-6



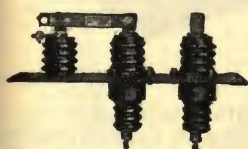
Type W-7



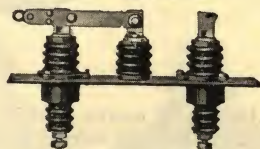
Type W-25



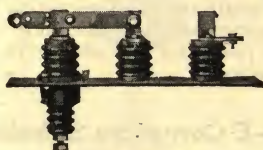
Type W-26



Type W-27



Type W-28



Type W-29

#### Transfer Types



Type W-30



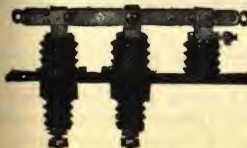
Type W-31



Type W-32



Type W-33



Type W-34



Type W-35

Ask for Bulletin Giving Complete Information

### Three-E Outdoor Disconnects



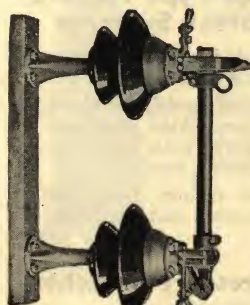
Available in single and double throw. Tandem transfer and double blade transfer in upright, vertical and underhung mountings, rating from 400 to 2000 amperes, and 7500 to 69,000 volts.

Equipped with horn type locks and N.E.M.A. standard insulators.

Distribution and Rural Line Disconnects are furnished in standard sizes of 200 to 400 amperes and from 7.5 to 15 K.V.

The 400 and 600 ampere Line Suspension Switches for all spans supplement a very complete and high quality line of Three-E Outdoor Disconnects.

### Three-E Outdoor Fuse Disconnects



Type F.V.H.

Available as expulsion Fuses or arranged for use with S & C liquid fuses.

Furnished in all standard ratings and mountings for stick operation.

Features simplicity and easy fuse replacement.

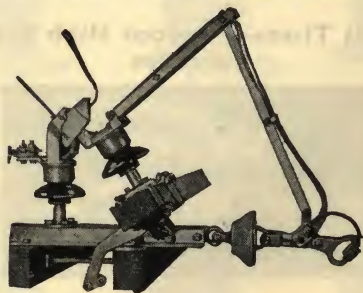
### Three-E Indoor Fuses and Fuse Mountings



Available in disconnect type as shown or in permanent mounting styles.

Furnished in all standard ratings and mounting—Styles with or without locks.

### No. 8900-L Type Three-E Air Break Switches

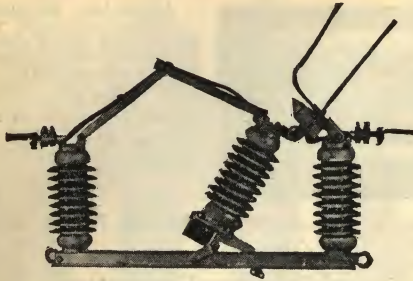


A rural line switch for pole top mounting features ease and flexibility of mounting. Arranged for cross arm or steel structure mounting and equipped with forged rings for strain insulators.

Used with Wood or steel shafts and Pivot sleet hoods for easy operation 7500 to 34,500 volts sizes in 3 and 4 pole units.



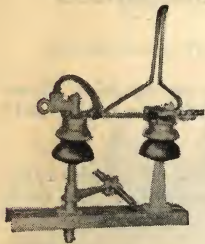
## No. 8900-U Type Three-E Air Break Switches



Same as No. 8900-L Type except supplied with three insulators per pole. Features simplicity of design, high quality materials, and careful construction. Pivot sleet-hoods, snap-break arcing horns, double clamp terminals furnished as standard equipment.

Available from 7500 to 34,500 volts.

## No. 6600 Type Three-E Sidebreak Switches

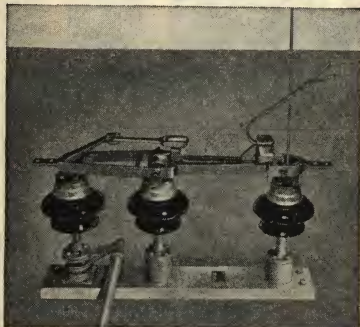


Furnished for rural service as pole units or for stations.

Pivot sleethoods standard on station types. Also available in No. 6200 style with three insulators and double break.

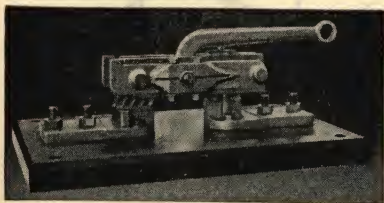
Standard ratings from 200 to 1200 amperes, and voltages to 161,000.

## No. 8400 Three-E High Pressure Switches



Features balanced high pressure. Unusually fine design remarkably easy to operate in all weather conditions. Pressure is predetermined and does not vary. Contact surfaces are self-cleaning. Patented limiting sleeve removes 90% of the strain on current carrying parts. A long-life switch for heavy duty service at low maintenance cost. Operated by hand or motor mechanism. Ratings to 161 K.V. standard.

## Type PH Three-E Indoor High Pressure Switches

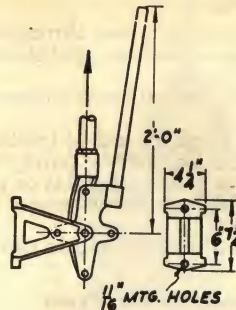


A simple yet dependable pressure switch for stick operation individually or in gangs. Uses left and right hand threaded stud principle to establish high pressure.

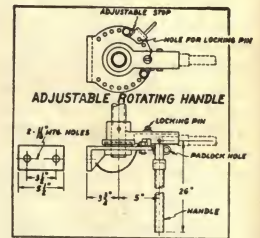
Contacts are self-cleaning.

Furnished in ratings of 1200 to 6000 amperes from 5 to 15 K.V. Also available in outdoor types for stick or gang operation.

## Three-E Hand Control Mechanisms



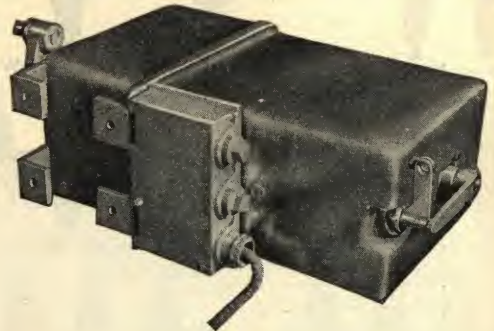
Reciprocating



Torsional

Hand operating mechanisms for remote control of switches are available in rotating or reciprocating types and furnished with locking pins. These handles are very flexible in design and can be used to advantage wherever remote control is desired.

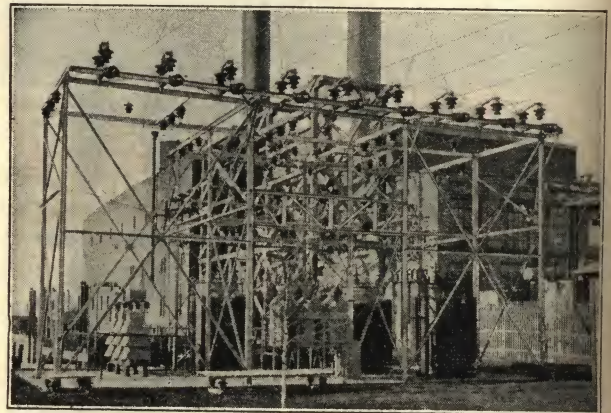
## Three-E Motor Control Mechanisms



Automatic motor control of either torsional or reciprocating action for correct operation of all Three-E gang operated switches is available in the OM-100 motor mechanism.

Equipped with auxiliary hand operating handle and completely sealed against dust and moisture. Internal heating unit keeps inside parts dry and always in condition for instantaneous operation.

## Three-E Complete Substations



More than thirty years of designing and building substations of all sizes and types, both indoor and outdoor, have equipped Three-E engineers to give you the utmost in modern, correct substations that will prove to be economical and require a minimum in the way of maintenance costs.

Three-E engineers are always available to help you with your designing, building, or operation problems.



## Three-E Outdoor Bus Supports



Type BFU



Type AFU



Type HFU



Type BPU



Type APU



Type MPU



Type HPU



Type RPU



Type FPU



Type MFU



Type RFU



Type FFU

The Three-E line of Outdoor Bus Supports is complete in every respect. It includes upright and underhung types for carrying flat bars in vertical or horizontal positions or round conductors. Fittings are available for pipe mounting. Adjustable adaptors can be supplied to permit 90° adjustment on bus clamps. Three-E Bus Supports use outdoor insulating units which meet N.E.M.A. Standards for dimensions and performance, supplied in all ratings to 69,000 volts.

## Three-E Form A-1 Indoor Bus Supports

### For Flat Vertical Bus Bar



Type HF



Type HP

All bus supports illustrated are the Form A-1. Heavy pressed steel mounting bases are used on this form of bus support.

These supports are available for voltages from 5000 to 34,500 and the cantilever strength at insulator cap. of 6000 inch pounds.

Indoor bus supports are also furnished in what is known as Form A. This form uses heavy cast malleable bases.



Type AF



Type AP

### For Round Busses



Type RF



Type RP

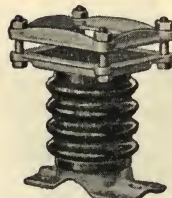


Type FF

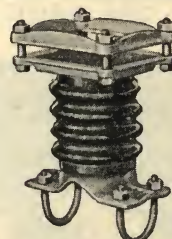


Type FP

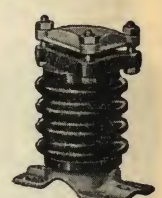
### For Flat Horizontal Bus Bar



Type MF



Type MP



Type BF



Type BP



Type TF



Type TP

Ask for Bulletin Giving Complete Information



**Three-E Clamp Insulator Supports**

**Type CIL**  
Pipe Mounting



**Type CIL**  
Flat Mounting



**Type MIL**  
Flat Mounting

Consists of porcelain spools held by metal clamps. The lower half is made of heavy pressed steel and the top half of heavy pressed non-ferrous metal. Also available with a heavy cast malleable base instead of pressed steel.

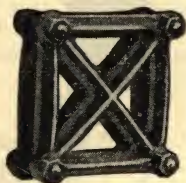
Can be used on either a.c. or d.c. service. Available for conductor sizes ranging from  $\frac{3}{16}$  to  $3\frac{1}{2}$  inches.

**Three-E Bus Clamps****Heavy Duty**

Available for all sizes of bus bars used commercially. The extra heavy duty type is recommended where a large number of bars is used to carry currents of high amperage.



**Type AD**



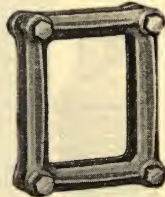
**Type HD**

**Medium Duty**

For average conditions in central station and industrial plant work. Both heavy and medium duty clamps are available for a.c. or d.c. service. Type of service should be specified when ordering.



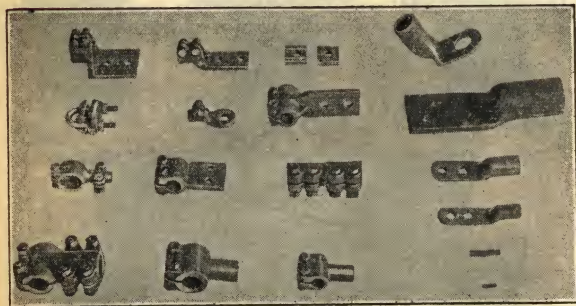
**Type AM**



**Type HM**

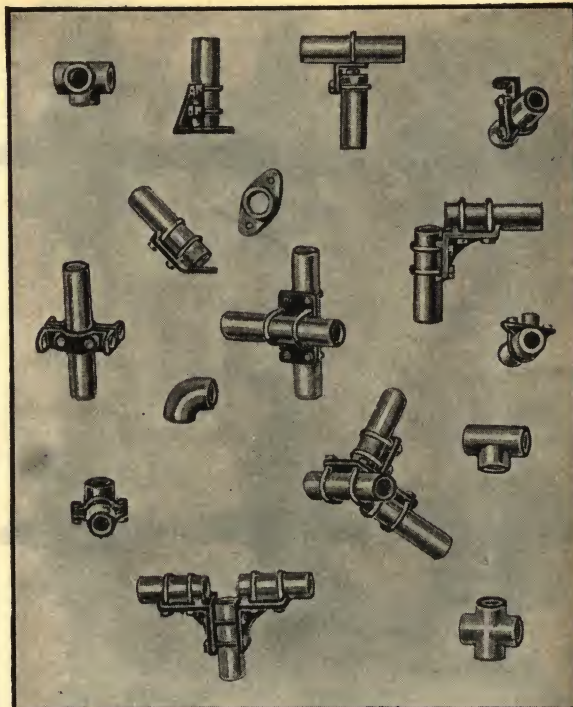
**Three-E Electrical Copper Fittings**

For Wire, Cable, Rod, Tubing and Bar



Only a very small portion of the Three-E line of copper fittings is shown in the above illustration. Clamp and solder types are available to meet practically every requirement in connecting wires, cables, rods, tubing and bars.

Only the best grade of electrolytic copper is used in Three-E connectors and careful machining is a major feature.

**Three-E Iron Pipe Fittings**

The above illustrations show but a small portion of the Three-E line of pipe fittings. Fittings can be supplied for the commercial pipe sizes in all manner of shapes to meet most any condition.

Ask for Bulletin Giving Complete Information

## GRAYBAR INSULATING MATERIAL

**ASBESTOS**

Tapes, Sleeveings, Cloth

**CAMBRICS**

Straight and Bias Cuts, black and yellow, standard widths and thicknesses

**CORDS**

Lacing and Binding

**COTTON**

Tapes, Webbing, Sleeveings

**ENAMELS**

Insulating, Air Drying

**MICA**

Block, Plate, Moulding, Segment, Tapes, Sheets, Etc.

**PAPERS**

Varnished, Insulating, Fish

**SLEEVEINGS**

Varnished, Saturated, Asbestos, Cotton, Fibre Glass, Lead

**TAPES**

Varnished cambric, Plastics, Adhesives, Linen

**TUBING**

Plastic, Varnished, Varnished Fibre Glass, Asbestos

**VARNISHES**

Air Drying, Baking

**WEDGES**



## POLES

WESTERN RED • NORTHERN WHITE  
DOUGLAS FIR

The National Pole & Treating Co., Division of Minnesota and Ontario Paper Company, supplier of Graybar poles for more than twenty-five years, has a well earned reputation for furnishing a quality product.

It maintains, at the treating plants, both a graduate chemist and a graduate timber pathologist, who are charged with treating operations, oil analyses, yard sanitation and research—all important essentials in the manufacture of quality poles.

It also maintains, at its concentrating yards, trained workmen, who, for a small extra charge, roof, gain and stain poles to specifications.

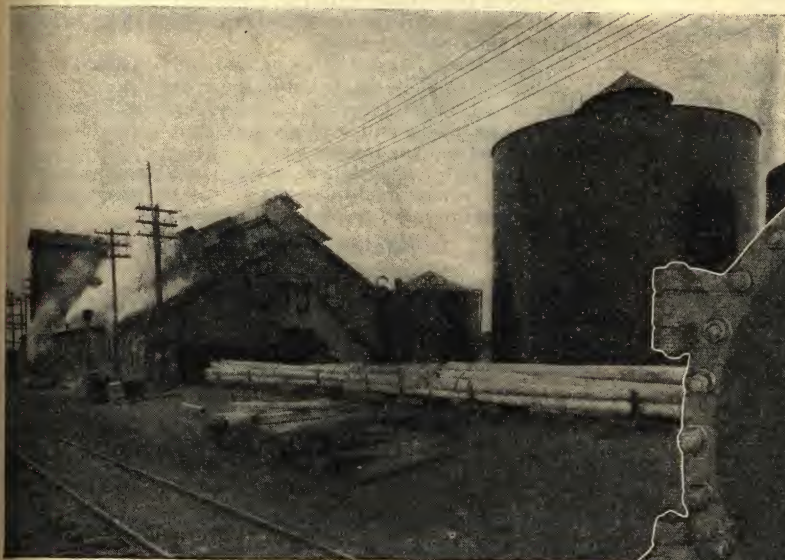
PRESSURE TREATED DOUGLAS  
FIR POLES

FULL LENGTH PRESSURE  
TREATED SUPER-CEDAR  
POLES

BUTT TREATED  
CEDAR POLES

All poles comply with A.S.A. current standard specifications, and all treatments comply fully with American Wood Preservers' Association specifications.

Treating plants are located at Minnesota Transfer, Minnesota and Hillyard, Washington.



Butt and Pressure  
Treated Poles

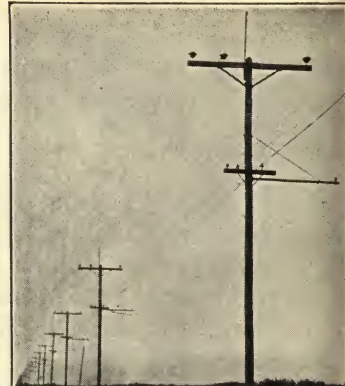
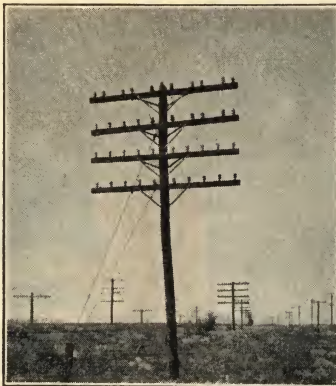


Specifications, prices, and full information will be furnished on application to the nearest:

GRAYBAR ELECTRIC COMPANY OFFICE AND WAREHOUSE



## International Creosoted Pine Poles



Old Lines of International Creosoted Pine Poles  
In Above Lines—6712 Poles— $\frac{1}{2}$  of 1 Per Cent Replaced in 25 Years of Service

## General

Graybar Electric Company brings to the utility trade the highest quality in creosoted pine poles and offers for support of this statement the fact that its supplier has more long-time service records of poles without failures than any creosoting concern. Low annual cost, reliability, the fact that in times of financial stress or weather hazard the utility company *needs lines that will stand without failure*, all of these have dominated us in our creosoted pine pole policy.

## International As A Supplier

Our supplier, International Creosoting and Construction Company, organized in 1875 and one of the largest commercial creosoting concerns in the business, has an outstanding record and a dominant place in the treating industry. We call special attention to the records of old and new lines cited in this concern's photographs here shown. They are typical, and a few of the many available.

Operating in one of the finest timber-producing areas in the South-West, International has added to its advantages of location and natural resources the skill of graduate chemical engineers and treating operators whose work is conducted in modern plants and well equipped laboratories. Pioneered and trained by a background of 72 years of experience, International timbermen select the cream of the timber area (surpassing even the quality of the lumber logging operations) for the manufacture of Graybar-International poles. This production moves to conditioning yards at the treating plants by means of a highly developed and well organized concentrating system. The yards themselves have been built in conformity with Government seasonal recommendations.

Always advocating pure coal tar creosote and the best grade only in the treatment of its poles, and standing against every tendency towards departures in quality or reduction in quantity of the preservative that would make of the user's line an experimental laboratory, Graybar-International creosoted pine poles have gone to almost every state of the Union and without exception have given outstanding service.

## Reasons For The Standing Of The International Pine Pole

- |                    |                     |
|--------------------|---------------------|
| 1—Long Life        | 5—Cleanliness       |
| 2—Low Annual Cost  | 6—Fire Resistant    |
| 3—Great Strength   | 7—Bird Resistant    |
| 4—Lasting Strength | 8—Termite Resistant |

The utilities of the United States use more creosoted pine than all other treated poles put together. Only briefly need their qualifications be given to account for this preference. The tall straight pine trees of the South are natural poles. They grow with a gradually tapering stem, practically without branches, and when sheared of their bark and browned as the result of treatment, they present a stately appearance in the line. Their wood is the strongest of the poles commonly used in line construction. Fortunately pine is a wood into which creosote goes very deeply during the course of scientifically controlled and proper treating operation, and the depth of this protection is the reason for the exceedingly long life of the pine pole. It is the explanation also of pine's resistance to termite attacks, for the checks which open in

every wood and expose it to the ravages of these insects do not go past the deep creosote penetration in the pine pole. Modern methods and advances in the science of wood preservation now makes available the creosoted pine pole so well manufactured in appearance, and with surface so clean that they are in use on the streets of New York, Detroit, Los Angeles, St. Louis, Baltimore, Boston, San Francisco, and thousands of other cities.

American Standards Association  
Specifications for Southern Pine Poles

Approved June 20, 1931



## Introduction

These specifications cover southern pine poles which are to be given a preservative treatment. The poles are to be classified in accordance with the American Standard Dimensions of Creosoted Southern Pine Poles (05e2-1931), which is a part of these specifications.

The length and class of poles wanted and full details of the framing desired shall be stated in the orders.

The details of any marking, including length and class marks, to be placed on the poles shall be in accordance with instructions from the purchaser.

Complete detailed instructions shall be given the supplier in all cases where modifications are to be made in these specifications to meet special requirements.

## 1.—Material Requirements

## 1.1—Species

All poles shall be cut from live southern pine timber: Longleaf Pine (*Pinus palustris*), Shortleaf pine (*Pinus echinata*), Loblolly Pine (*Pinus taeda*), Slash Pine (*Pinus caribaea*), and Pond Pine (*Pinus rigida serotina*).

## 1.2—Prohibited Defects

All poles shall be free from decay, red heart, cracks, plugged holes, and bird holes. Nails, spikes, and other metal shall not be present in the poles unless specifically authorized by the purchaser.

## 1.3—Permitted Defects

1.31 BLUE SAP STAIN.—Blue sap stain that is not accompanied by softening or other disintegration of the wood (decay) is permitted under these specifications.

1.32 HOLLOW PITH CENTERS.—Hollow pith centers in the tops or butts of poles and in knots are permitted.

## 1.4—Limited Defects

1.41 CHECKS.—The top and side surfaces of poles shall be free from injurious checks.

1.42 SHAKES.—Shakes in the butt surface extending over not more than one-quarter ( $\frac{1}{4}$ ) of the circumference are permitted provided they are at least one (1) inch distant from the edge of the butt. Shakes extending over more than one-quarter ( $\frac{1}{4}$ ) of the circumference are permitted when they are inside of a circle whose center corresponds to the center of the butt surface and whose diameter equals one-half ( $\frac{1}{2}$ ) of the average butt diameter.



## International Creosoted Pine Poles



New Lines of International Creosoted Pine Poles  
In Above Lines—4026 Poles—No Replacements in 18 Years of Service

## Specifications for Southern Pine Poles

Continued

Shakes in the top surface whose width does not exceed one-sixteenth ( $\frac{1}{16}$ ) of an inch are permitted provided they do not extend over more than one-half ( $\frac{1}{2}$ ) of the top circumference.

**1.43 SPLITS.**—Splits are prohibited in the top surfaces of poles. Splits in butt surfaces are permitted provided that their height from the butt along the side surfaces does not exceed two (2) feet.

**1.44 GRAIN.**—No pole shall have more than one (1) complete twist of grain in any twenty (20) feet of length.

**1.45 INSECT DAMAGE.**—Insect damage consisting of holes less than one sixteenth ( $\frac{1}{16}$ ) of an inch in diameter is permitted.

**1.46 KNOTS.**—The diameter of any single knot or knot cavity, or the sum of the diameters of all knots and knot cavities in any one (1) foot section shall not exceed the limits set up in the following table. Knots and knot cavities one-half ( $\frac{1}{2}$ ) of an inch or under in diameter shall be ignored in applying the limitations for sum of diameters.

Limitations of Knot Size

Length of Pole	MAXIMUM SIZES PERMITTED, INCHES		
	DIAMETER OF ANY SINGLE KNOT OR KNOT CAVITY	Sum of Diameters of All Knots and Knot Cavities in Any 1 Foot Section	
	Classes 1-3	Classes 4-10	All Classes
45 Ft. and Under	4	3	8
50 Ft. and Over	5	5	10

Knots one (1) inch or over in diameter, showing discoloration or softness of fibre, indicating possible decay, shall be neatly gouged to a depth of not more than one-fifth ( $\frac{1}{5}$ ) of the diameter of the pole at the point where the knot is located, to permit determination of the character and extent of decay. The gouging shall be done without unnecessary removal of sound wood, and in such a manner as to insure drainage of water from the hole when the pole is set. Where such gouging does not completely remove the decay (heart rot), the pole shall be rejected.

Knots under one (1) inch in diameter need not be gouged unless after trimming the presence of decay is revealed and upon further examination the decay is found to extend to a depth of more than two (2) inches.

When more than one (1) cavity is present in a pole, the sum of the depths of all cavities in the same six (6) inch longitudinal section of the pole shall not exceed one-third ( $\frac{1}{3}$ ) of the mean diameter of that section.

**1.47 SCARS.**—No pole shall have a turpentine face or other scar located within two (2) feet of the ground line.

In other sections of the pole, scars which have been smoothly trimmed so as to remove all bark and all surrounding or overhanging wood that is not completely intergrown with the wood of the body of the pole are permitted, provided

(a) that such trimming does not result in abrupt changes in the contour of the pole surface and that trimmed scar does not have a depth of more than one (1) inch, except that where the diameter of the pole at the location of the scar is more than ten (10) inches the depth may be one-tenth ( $\frac{1}{10}$ ) of the diameter; and

(b) that the circumference of the pole at any point on trimmed surfaces located between the butt and a point two (2) feet below the ground line is not less than the circumference of the pole at the ground line.

**1.48 SHAPE.**—Poles shall be free from short crooks.

A pole may have sweep subject to the following limitations:

(a) Where sweep is in one (1) plane and one (1) direction only, a straight line joining the surface of the pole at the ground line and the edge of the pole at the top shall not be distant from the surface of the pole at any point by an amount greater than one (1) inch for each six (6) feet of length between these points.

(b) Where sweep is in two (2) planes (double sweep) or in two (2) directions in one (1) plane (reverse sweep), a straight line connecting the mid-point at the ground line with the mid-point at the top shall not at any intermediate point pass through the external surface of the pole.

## 2.—Dimensions

## 2.1—Length

Poles under fifty (50) feet in length shall not be over three (3) inches shorter or six (6) inches longer than nominal length. Poles fifty (50) feet or over in length shall not be over six (6) inches shorter or twelve (12) inches longer than nominal length.

Length shall be measured between the extreme ends of the pole.

## 2.2—Circumference

Poles shall be classified in accordance with the American Standard Dimensions of Creosoted Southern Pine Poles. Minimum allowable circumferences at six (6) feet from the butt (except for Classes 8, 9, and 10), and at the top, for each length and class of pole listed, are shown in this standard. Poles having circumferences which are greater, at the same points of measurement, than those shown for the length and class desired, shall be acceptable, provided that the six (6) foot from butt circumference is less than the minimum given for the second larger class pole of the same length. The top dimensional requirement shall apply at a point corresponding to the minimum length permitted for the pole.



# International Creosoted Pine Poles Specifications for Southern Pine Poles

Continued

## Dimensions of Creosoted Southern Pine Poles

Lgth. of Pole Ft.	Dist. from Butt Feet	CLASS									
		MINIMUM TOP CIRCUMFERENCE, INCHES					MINIMUM CIRCUMFERENCE AT 6 FEET FROM BUTT, INCHES				
		1	2	3	4	5	6	7	*8	*9	*10
		27	25	23	21	19	17	15	18	15	12
16	3½	....	....	....	....	21.5	19.5	18.0	....	....	....
18	3½	....	....	26.5	24.5	22.5	21.0	19.0	....	....	....
20	4	31.5	29.5	27.5	25.5	23.5	22.0	20.0	....	....	....
22	4	33.0	31.0	29.0	26.5	24.5	23.0	21.0	....	....	....
25	5	34.5	32.5	30.0	28.0	26.0	24.0	22.0	....	....	....
30	5½	37.5	35.0	32.5	30.0	28.0	26.0	24.0	....	....	....
35	6	40.0	37.5	35.0	32.0	30.0	27.5	25.5	....	....	....
40	6	42.0	39.5	37.0	34.0	31.5	29.0	27.0	....	....	....
45	6½	44.0	41.5	38.5	36.0	33.0	30.5	28.5	....	....	....
50	7	46.0	43.0	40.0	37.5	34.5	32.0	29.5	....	....	....
55	7½	47.5	44.5	41.5	39.0	36.0	33.5	....	....	....	....
60	8	49.5	46.0	43.0	40.0	37.0	34.5	....	....	....	....
65	8½	51.0	47.5	44.5	41.5	38.5	....	....	....	....	....
70	9	52.5	49.0	46.0	42.5	39.5	....	....	....	....	....
75	9½	54.0	50.5	47.0	44.0	....	....	....	....	....	....
80	10	55.0	51.5	48.5	45.0	....	....	....	....	....	....
85	10½	56.5	53.0	49.5	....	....	....	....	....	....	....
90	11	57.5	54.0	50.5	....	....	....	....	....	....	....

\*No butt requirement on Classes 8, 9 and 10.

## 3.—Manufacturing Requirements

### 3.1—Bark Removal

Outer bark shall be completely removed from all poles.  
No patch of inner bark left on the pole surface shall be more than one quarter (¼) of an inch in width or more than four (4) inches long.

### 3.2—Sawing

All poles shall be neatly sawed at the butt along a plane which shall not be out of square with the axis of the pole by more than two (2) inches per foot of diameter of the sawed surface. Beveling at the edge of the sawed butt surface not more than one-twelfth (1/12) of the butt diameter in width, or an equivalent area unsymmetrically located, is permitted.

### 3.3—Trimming

Branch stubs, partially overgrown knots, and completely overgrown knots rising more than one (1) inch above the pole surface shall be trimmed close. Completely overgrown knots less than one (1) inch high need not be trimmed.

### 3.4—Framing

All poles shall be framed in accordance with the terms of the order before they are subjected to the preservative treatment.

Gains on poles showing sweep or curvature shall be located on the concave side in the plane of the greatest curvature.

All gains on the same pole shall be cut so that their flat surfaces are approximately parallel. Conformance to this requirement may be tested by placing straight edges thirty (30) inches long on the faces of the finished gains so that the ends of the straight edges extend fifteen (15) inches on either side of the center line of the pole. The straight edges in any two (2) gains, when sighted in the direction of the longitudinal axis of the pole, shall not be out of parallel at their ends by more than one-sixteenth (1/16) of an inch. Bolt holes shall be bored perpendicular to the faces of the gains.

## 4.—Storage and Handling

### 4.1—Storage

When it is necessary for any reason to hold in storage poles offered under these specifications, they shall be stacked on creosoted or non-decaying skids of such dimensions and so arranged as to support the poles without producing noticeable distortion of any of them. Poles shall be piled in such a manner as to permit free circulation of air and they shall be supported at all points at least one (1) foot above the general ground level, or any vegetation growing thereon. No decayed or decaying wood shall be permitted to remain underneath stored poles.

### 4.2—Handling

Pole tongs, cant hooks, and other pointed tools capable of producing indentations of more than one (1) inch in depth shall not be used on poles furnished under these specifications.

## 5.—Definitions of Terms

The following definitions shall apply in these specifications:

### 5.1—Fungous Defects

5.11 BLUE SAP STAIN.—Blue sap stain is a bluish coloration in the sapwood, caused by the action of certain molds and fungi, that is not accompanied by softening or other disintegration of the wood.

5.12 DECAY.—Decay is disintegration of wood substance due to the action of wood-destroying fungi. Rot and Dote mean the same as Decay.

5.13 RED HEART.—Red heart is the incipient stage of a destructive heart rot caused by *Trametes pini* that occurs in the living tree. It is characterized by a reddish or brownish color in the heartwood.

### 5.2—Insect Defects

5.21 INSECT DAMAGE.—Insect damage is the result of boring in the pole by insects or their larvae. Scoring or channeling of the pole surface is not classed as insect damage.

### 5.3—Timber Defects

5.31 CHECKS.—Checks are lengthwise separations of the wood in a generally radial direction.

Heart checks are checks which extend from the pith center of the pole toward but not to the periphery of the pole.

5.32 CRACKS.—Cracks are breaks or fractures across the grain of the wood.

5.33 SCARS.—Scars or cat faces are depressions in the surface of the pole, generally elliptical in shape, resulting from wounds where healing has not re-established the normal cross section of the pole.

5.34 SHAKES.—Shakes are separations of the wood, generally parallel with the annual rings.

5.35 SPLITS.—Splits are separations between the fibers of the wood extending from surface to surface through the pole.

### 5.4—Shape

5.41 SHORT CROOK.—A short crook is a localized deviation from straightness which, within any section of five (5) feet or less in length, is more than one-half (½) the mean diameter of the crooked section. (See Diagram 3 of the subsidiary drawing entitled "Measurement of Sweep and Short Crook in Poles.")

5.42 SWEEP.—Sweep is the deviation of a pole from straightness. (See diagrams 1 and 2 of the subsidiary drawing entitled "Measurement of Sweep and Short Crook in poles.")

### 5.5—Miscellaneous

5.51 KNOT DIAMETER.—The diameter of a knot is its diameter on the surface of the pole measured in a direction at right angles to the lengthwise axis of the pole.

5.52 LIVE TIMBER.—Live timber is that cut from a tree which was standing and living at the time of cutting.

## 6.—Subsidiary Drawing

The following drawing is subsidiary to the text of these specifications:

Measurement of Sweep and Short Crook in Poles.

## 7.—Subsidiary Standard

The foregoing dimension table is subsidiary to the text of these specifications: It is designated as:

American Standard Dimensions of Creosoted Southern Pine Poles (05e2-1931).



### International Creosoted Pine Poles

#### Measurement of Sweep and Short Crook in Poles

Diagram 1—Measurement of Sweep in One Plane and One Direction

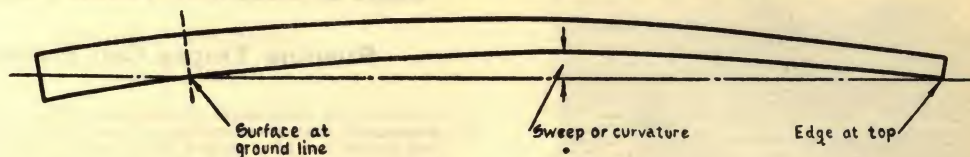
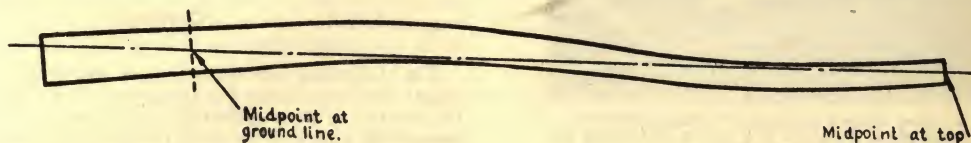


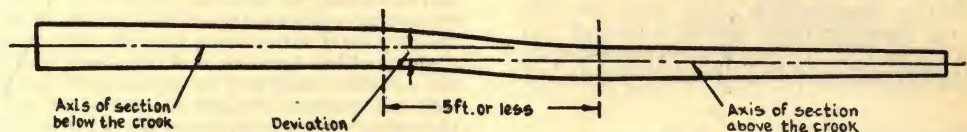
Diagram 2—Measurement of Sweep in 2 Planes (Double Sweep) or in 2 Directions in One Plane (Reverse Sweep)



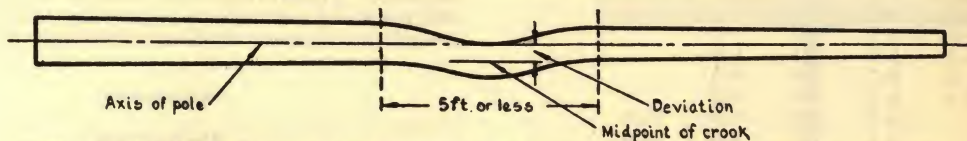
NOTE: Diagram No. 2 applies to the measurement of double sweep in Western Red Cedar and Southern Pine

Poles. For measurement of double sweep in Northern White Cedar and Chestnut Poles, see text.

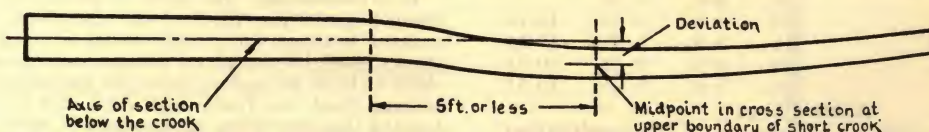
Diagram 3—Measurement of Short Crook (Three Cases Shown)



Case 1—Where the Reference Axes are Approximately Parallel



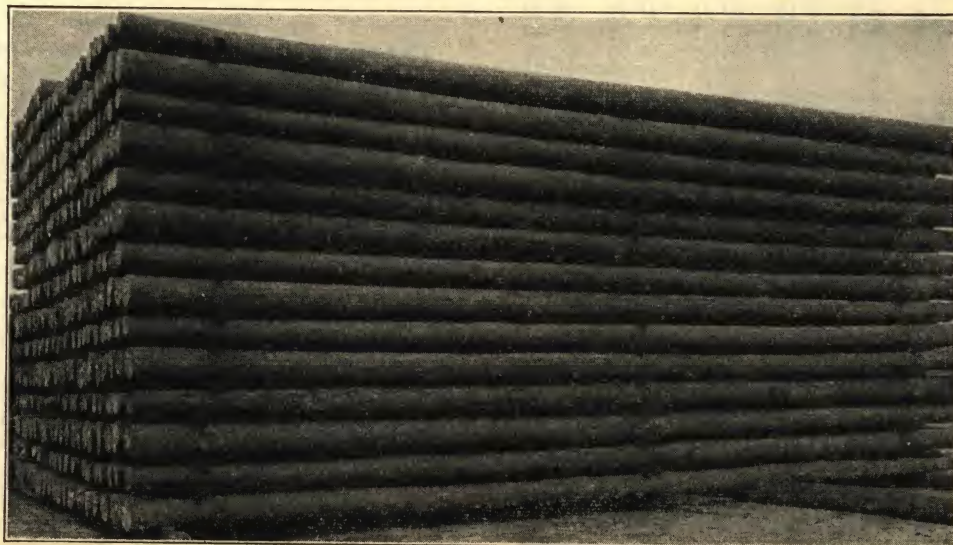
Case 2—Where Axes of Sections above and below the Crook Coincide or are Practically Coincident



Case 3—Where Axis of Section above Short Crook is not Parallel or Coincident with Axis below the Crook

NOTE: The three cases shown under Diagram 3 are typical and are intended to establish the principle of meas-

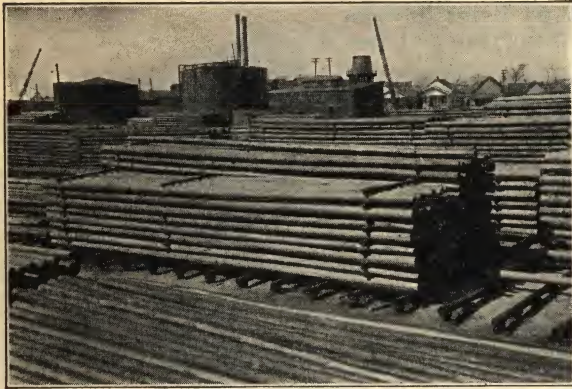
uring short crooks. There may be other cases not exactly like those illustrated.



International Pine Poles have the Straightness and Symmetry of a Machined Product



## International Creosoted Pine Poles



Stacks Such as Here Shown on One of International's Conditioning Yards Make Possible Our Quick Shipment of Quality Creosoted Pine Poles

## Top Dimension Poles

Top dimension poles conform in all respects to American Standards Association Specification poles, with the sole difference that top diameter poles specify minimum top diameter only; whereas A. S. A. Specification poles specify both minimum top circumference and circumference six feet from the butt.

Length Feet	TOP DIAMETER IN INCHES*						
16	4-5	5-6	6-7	...	...	...	...
18	4-5	5-6	6-7	...	...	...	...
20	4-5	5-6	6-7	7-8	...	...	...
25	4-5	5-6	6-7	7-8	8-9	...	...
30	...	5-6	6-7	7-8	8-9	...	...
35	...	5-6	6-7	7-8	8-9	...	...
40	...	...	6-7	7-8	8-9	9-10	...
45	...	...	6-7	7-8	8-9	9-10	...
50	...	...	...	7-8	8-9	9-10	...
55	...	...	...	7-8	8-9	9-10	...
60	...	...	...	7-8	8-9	9-10	10-11
65	...	...	...	7-8	8-9	9-10	10-11
70	...	...	...	7-8	8-9	9-10	10-11
75	...	...	...	7-8	8-9	9-10	10-11

## Anchor Logs

Anchor logs conform in all respects to the specification for top dimension poles.

3	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
4	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
6	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
7	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
8	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
9	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
10	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
11	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
12	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
13	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
14	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
15	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13

\*Note: Top diameter is determined by placing a tape around the circumference of the pole at the base of the roof.

## What an Order Should Show

To avoid delays and prevent the possibility of error, an inquiry or an order for International poles should contain the following information:

- 1.—Name of consignee.
- 2.—Destination of shipment.
- 3.—Date shipment is desired.
- 4.—Number of poles required.
- 5.—Length and minimum top diameter.
- 6.—Number of pounds of creosote required per cubic foot of wood.
- 7.—Type of framing desired. A blue print or sketch is preferable. Poles can be framed more economically at a treating plant than in the field at point of installation. Insofar as possible therefore complete framing instructions are desirable.

## \*Specification for the Preservative Treatment of Southern Yellow Pine Poles

## Rueping Empty Cell Process

\*Note: A descriptive specification only. It must be recognized that specifications do not guarantee quality, and should not be regarded as adequate protection to the buyer. In any treated wood, the all important factor is the source of supply.

## General

The following specification is intended to obtain an empty cell treatment for the poles; and if the material to be treated is in a different condition as to moisture and seasoning, material for each retort charge shall be selected as to condition of moisture so that there will be no great difference in degree of seasoning in any one charge. Only perfectly sound poles shall be treated. The treating plant shall be equipped with indicating and recording gauges and other necessary apparatus for accurately observing and recording the treating process. Above the level of the creosoting cylinder there shall be an overhead drum for the purpose of determining that the cylinder is full of preservative and free from air and the gauge reading indicating a full cylinder shall not be taken until the preservative is seen to overflow through the valve on top of this drum; there shall also be a sap drum below the level of the cylinder by means of which sap and condensation shall be removed regularly. The treating plant must have all the necessary chemicals, a laboratory and laboratory apparatus to enable the quality of preservative to be determined.

## Seasoning

## Air-Seasoning

In air-seasoning, the poles shall be stacked in such a manner as to provide free air circulation and minimum contact between individual pieces in each stack. These stacks shall be placed on treated or otherwise permanent skids at least six inches above the ground on a well drained storage yard free from vegetation and decaying wood, so located that prevailing winds strike it freely, and each layer shall be separated by creosoted strips. Alleys between the stacks shall be wide, continuous and straight. The material shall remain until in the judgment of the inspector it is sufficiently seasoned to obtain the maximum benefit from the treatment.

## Seasoning By Steam

When time for air-seasoning is not available, steam seasoning shall be used. Live, saturated steam shall be admitted to the treating cylinder taking care that all air is swept from the cylinder before the outlet valve is closed. Pressure shall then be raised gradually to the maximum temperature desired, this maximum being determined by the treating inspector. It should not be less than 254° F., not more than 259° F. The duration of the steaming process is dependent upon the degree of seasoning of the poles in the cylinder charge but shall in no case be carried to such an extent as to injure the timber.

## Initial Vacuum

After the steaming process has been completed the steam shall be blown off and the treating cylinder exhausted as quickly as possible to as high a vacuum as possible, which must be at least twenty-four inches at sea level or proportionately less at higher altitudes. This vacuum shall be maintained for at least one hour or for whatever longer period is necessary, so that the wood may be as dry and free from air as practicable. During the exhaustion process the temperature within the treating cylinder shall be maintained by means of steam under pressure in the closed coils. The cylinder shall be relieved of sap and condensation continuously.



## International Creosoted Pine Poles

## Specification for the Preservative Treatment of Southern Yellow Pine Poles

## Seasoning—Continued

## Initial Air Pressure

In the case of air-seasoned poles, Initial Air Pressure is the first step in the treating process. With steam-seasoned poles this step immediately follows the Initial Vacuum.

The poles shall be subjected to air pressure of sufficient intensity and duration (usually 40 lbs. to 100 lbs.) to provide under a quick high vacuum the ejection of surplus preservative, and to insure a retention and proper distribution of the stipulated number of pounds of preservative per cubic foot of wood.

## Treatment

The creosote shall be introduced between 170° F. and 210° F., the cylinder pressure being maintained constant until the cylinder is filled. The oil must be seen by the inspector to flow from the overhead drum on top of the treating cylinder, thus assuring him that the cylinder is completely filled with the preservative. The pressure shall then be gradually raised to and maintained at a minimum of 150 lbs. per square inch until there is obtained the largest gross absorption that can be reduced to the stipulated final retention, calculation being based on readings of the working tank gauges and the weight of the creosote at 100° F. The quantity of oil for final retention shall be based on the cubic content of wood in the treating cylinder as determined by actual measurement of the top and butt of each pole in each charge. Under no conditions may shortage of oil in one charge be offset by overage in another; the minimum final retention in each case must be 100 per cent of the quantity of creosote specified.

## Final Vacuum

After pressure is completed and the cylinder is emptied of oil a sufficient vacuum shall be promptly created and maintained until the timber can be removed from the cylinder free from dripping oil.

## Penetration

The treating processes shall be directed toward complete sapwood penetration with the preservative.

## Preservative

For preservative see Creosote Specification.

Note: A final retention of 8, 10 or 12 pounds of creosote per cubic foot are most frequently used. Of these, the 8-pound treatment is specified in the great majority of cases.

Standard Specifications for Creosote Oil  
American Wood Preservers Association

## Grade 1

- 1.—The oil shall be a distillate of coal-gas tar or coke-oven tar.<sup>1</sup> It shall comply with the following requirements:
- 2.—It shall not contain more than three per cent of water.
- 3.—It shall not contain more than 0.5 per cent of matter insoluble in benzol.<sup>2</sup>
- 4.—The specific gravity of the oil at 38° C., compared with water at 15.5° C., shall be not less than 1.03.
- 5.—The distillate, based on water-free oil, shall be within the following limits:
  - Up to 210° C., not more than 5 per cent.
  - Up to 235° C., not more than 25 per cent.
- 6.—The residue above 355° C., if it exceeds 5 per cent shall have a float test of not more than 50 seconds at 70° C.
- 7.—The oil shall yield not more than 2 per cent of coke residue.
- 8.—The foregoing tests shall be made in accordance with the standard methods of the American Wood-Preservers' Association. (See Manual—Creosote, Analysis.)

<sup>1</sup>Owing to the complexity of the chemical composition and physical properties of coal-tar creosote oil, and to the fact that some of the same compounds and properties which characterize coal-tar creosote are found in certain petroleum derivatives, the determination of the purity of creosote is difficult. When there is not certain assurance that the oil is a pure product, the following tests will aid in arriving at an opinion as to its coal-tar origin:

A.—Fraction distilling between 210° and 235° C. is usually solid or contains some solids when cooled to 25° C.

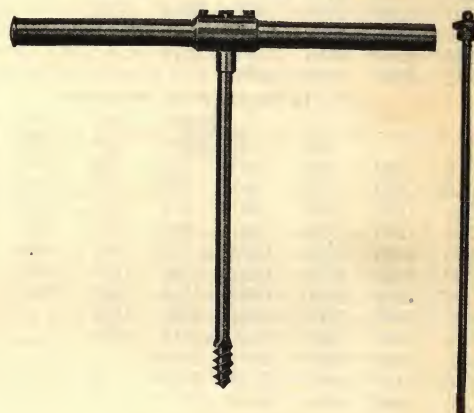
B.—All of the fractions up to 315° C. contain tar acids in varying amounts, usually at least 1 per cent calculated on the amount of the fraction tested. (See Manual—Creosote, Analysis, Tar Acids.)

C.—The specific gravity of the fraction between 235° and 315° C. is usually not lower than 1.025 and specific gravity of the fraction between 315° and 355° C. is usually not lower than 1.085 at 38° C. compared with water at 15.5° C. However, some pure coal-tar distillates fall slightly below these limits.

If the oil does not comply with at least one of the foregoing tests it is undoubtedly not a pure coal-tar creosote.

<sup>2</sup>Samples of oil taken from working tanks may show an increase in matter insoluble in benzol due to treating operations. Such increases provided they do not exceed by 1 per cent the specification limits should not serve to cause rejection of the oil for non-conformity with specifications if it can be shown that the original fresh oil was of specified quality.

## Depth of Creosote Penetration



Increment Borer

The increment borer shown here is used for extracting sections of wood from poles to determine how deeply the preservative has penetrated into the wood.

The use of this instrument is recommended as one means by which the buyer can gauge the quality of the product he receives. It does not damage the pole and the only precaution is that a creosoted wood plug be driven into the hole after the boring has been extracted.

For adequate protection it is essential that creosote penetrates wood deeply (see discussion on penetration later in this section).

Prices for increment borers, on request.

## Machine Trimming

All International poles are now being machine trimmed for their entire length. The machines are the most modern type that has been developed, and the depth of cut is uniform from top to butt. Only a light shaving is made to remove the knots and other protuberances. The grading into classes is done after the trimming.

Machine trimming has many advantages. The freshly trimmed surface facilitates seasoning. Unnecessary cutting into the body of the pole by hand trimming and gouging is eliminated. The appearance of the pole is greatly improved and bleeding is further reduced.



International Creosoted Pine Poles  
Estimated Weights of Poles

American Standards Association Specification Poles

Top Dimension Poles

Length Pole Feet	8 Pounds Final Retention									
	ESTIMATED WEIGHTS IN POUNDS									
	A.S.A. SIZE GROUP									
	1	2	3	4	5	6	7	8	9	10
16	....	....	....	....	254	212	179	240	179	122
18	....	....	....	363	301	263	216	277	212	141
20	635	555	479	418	353	310	259	315	235	169
25	898	808	686	602	508	423	362	423	324	221
30	1241	1076	921	780	672	573	489	541	423	...
35	1603	1410	1213	996	865	733	616	682	...	...
40	1974	1734	1499	1260	1048	884	761	...	...	...
45	2369	2087	1772	1528	1250	1062	921	...	...	...
50	2820	2435	2068	1777	1476	1246	1081	...	...	...
55	3220	2801	2411	2077	1739	1481	...	...	...	...
60	3798	3187	2750	2298	1988	1683	...	...	...	...
65	4362	3628	3163	2646	2265	...	...	...	...	...
70	4874	4145	3502	2947	2538	...	...	...	...	...
75	5429	4644	3892	3285	...	...	...	...	...	...

Length Pole Feet	8 Pounds Final Retention							
	ESTIMATED WEIGHTS IN POUNDS							
	TOP DIAMETER, INCHES							
	4-5	5-6	6-7	7-8	8-9	9-10	10-11	
16	113	164	226	....	....	....	....	....
18	146	207	277	....	....	....	....	....
20	160	226	306	400	....	....	....	....
25	226	316	418	536	672	....	....	....
30	...	408	541	686	855	....	....	....
35	...	522	682	855	1058	....	....	....
40	...	...	857	1048	1278	1537	....	....
45	...	...	1011	1255	1523	1824	....	....
50	...	...	...	1485	1791	2129	....	....
55	...	...	...	1734	2082	2463	....	....
60	...	...	...	2012	2402	2825	3285	....
65	...	...	...	2312	2740	3210	3722	....
70	...	...	...	2636	3111	3628	4188	....
75	...	...	...	2989	3511	4075	4686	....

10 Pounds Final Retention										
16	....	....	....	....	262	218	184	247	184	126
18	....	....	422	364	310	272	223	286	218	146
20	655	572	495	432	364	320	267	325	243	175
25	926	834	708	621	524	437	373	437	335	228
30	1280	1111	951	805	694	592	504	558	437	...
35	1654	1455	1251	1028	892	757	635	703	...	...
40	2037	1790	1547	1300	1082	912	786	...	...	...
45	2444	2153	1828	1576	1290	1096	951	...	...	...
50	2910	2512	2134	1833	1523	1285	1116	...	...	...
55	3322	2891	2488	2144	1795	1528	...	...	...	...
60	3919	3288	2837	2372	2052	1736	...	...	...	...
65	4501	3744	3264	2731	2338	...	...	...	...	...
70	5029	4278	3613	3041	2619	...	...	...	...	...
75	5602	4792	4016	3390	...	...	...	...	...	...

10 Pounds Final Retention										
16	116	169	233	....	....	....	....	....	....	....
18	150	213	286	....	....	....	....	....	....	....
20	165	233	315	412	....	....	....	....	....	....
25	233	325	431	553	693	....	....	....	....	....
30	...	421	558	708	882	....	....	....	....	....
35	...	538	703	882	1091	....	....	....	....	....
40	...	...	873	1081	1319	1586	....	....	....	....
45	...	...	1043	1295	1571	1882	....	....	....	....
50	...	...	...	1532	1848	2197	....	....	....	....
55	...	...	...	1789	2148	2541	....	....	....	....
60	...	...	...	2076	2478	2915	3390	....	....	....
65	...	...	...	2386	2827	3312	3841	....	....	....
70	...	...	...	2720	3210	3744	4321	....	....	....
75	...	...	...	3084	3623	4205	4835	....	....	....

12 Pounds Final Retention										
16	....	....	....	....	270	225	190	255	190	130
18	....	....	435	375	320	280	230	295	225	150
20	675	590	510	445	375	330	275	335	250	180
25	955	860	730	640	540	450	385	450	345	235
30	1320	1145	980	830	715	610	520	575	450	...
35	1705	1500	1290	1060	920	780	655	725	...	...
40	2100	1845	1595	1340	1115	940	810	...	...	...
45	2520	2220	1885	1625	1330	1130	980	...	...	...
50	3000	2590	2200	1890	1570	1325	1150	...	...	...
55	3425	2980	2565	2210	1850	1575	...	...	...	...
60	4040	3390	2925	2445	2115	1790	...	...	...	...
65	4640	3860	3365	2815	2410	...	...	...	...	...
70	5185	4410	3725	3135	2700	...	...	...	...	...
75	5775	4940	4140	3495	...	...	...	...	...	...

12 Pounds Final Retention										
16	120	175	240	....	....	....	....	....	....	....
18	155	220	295	....	....	....	....	....	....	....
20	170	240	325	425	....	....	....	....	....	....
25	240	335	445	570	715	....	....	....	....	....
30	...	435	575	730	910	....	....	....	....	....
35	...	555	725	910	1125	....	....	....	....	....
40	...	...	890	1115	1360	1635	....	....	....	....
45	...	...	1075	1335	1620	1940	....	....	....	....
50	...	...	...	1580	1905	2265	....	....	....	....
55	...	...	...	1845	2215	2620	....	....	....	....
60	...	...	...	2140	2555	3005	3495	....	....	....
65	...	...	...	2460	2915	3415	3960	....	....	....
70	...	...	...	2805	3310	3860	4455	....	....	....
75	...	...	...	3180	3735	4335	4985	....	....	....

Characteristics of Quality Pine Poles

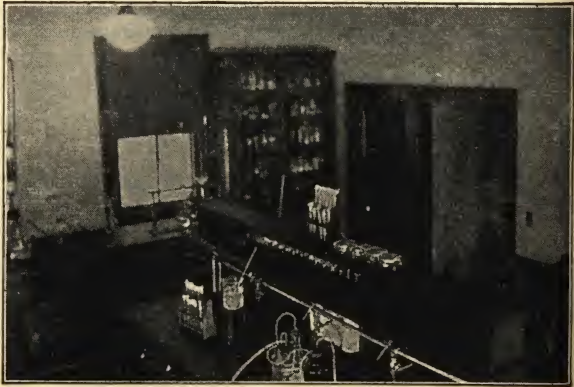
Status of Pine Poles

During a period covering the last several years, more treated pine poles have been used than all other treated poles put together. The utility that uses this commodity therefore is using the most generally accepted pole of the utility field. Important lines that must stand up under greatest stress and for the longest period of time are well built when built with quality-creosoted pine poles. Every sleet storm brings a further degree of proof of this fact. Bearing in mind the salvage value even of an abandoned line of creosoted pine poles, the costliness of individual pole failures, and creosoted pine's comparatively low annual cost, it seems difficult to think of any line not sufficiently important to justify their use.

Life of Creosoted Pine Poles

Whole lines of creosoted pine poles furnished by our supplier 25 and 30 years ago are still in use with practically no replacements, and are obviously good for many years to come. Many estimates have been made of the life to expect, and the Pennsylvania Electric Association, as the result of a study, estimated 35 years. This figure seems conservative with so many International creosoted pine lines now approaching that age and still in good condition. The

oldest lines still standing, and differences in climatic conditions, make it impossible to forecast definitely just what life to expect from the creosoted pine pole.



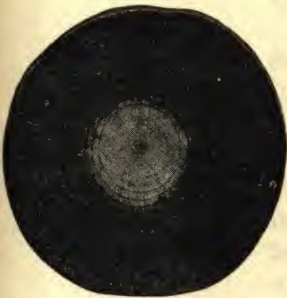
Section of the Chemistry Laboratory  
Scientific Control Is Essential



## International Creosoted Pine Poles Characteristics of Quality Pine Poles

Continued

### Value of Penetration



Uniform Penetration  
Is a Criterion of Good  
Treatment



Deep Penetration  
Means Long Life  
For the Poles

While several factors are important, and particularly the grade of preservative is important, no single factor has such bearing on the life and the quality of creosoted pine poles as the depth of creosote penetration and the uniformity of creosote penetration. Untreated wood of any kind commonly used for poles will decay eventually, and the only preventive is to have the penetration of the preservative deep and uniform and of proper grade. This is accomplished only when skilled technicians analyze the creosote and apply the treating process.

### Strength

The standard for ultimate fiber stresses for the commonly used pole woods has been developed by the Sectional Committee on Wood Poles under the sponsorship of the Telephone Group, American Standards Association. These ultimate fiber stresses quoted verbatim are tabulated below.

Northern White Cedar.....	3600 lbs. per sq. in.
Western Red Cedar.....	5600 lbs. per sq. in.
Chestnut.....	6000 lbs. per sq. in.
Southern Yellow Pine (Creosoted)....	7400 lbs. per sq. in.

### Fire Resistance

Fires that rage across the dry cane fields of Cuba crack insulators, melt steel, and burn untreated wood to ashes, but creosoted pine poles stand the flames. Such is the actual experience. Along almost every railroad right-of-way fire gangs burn the weeds each fall and it is a matter of common record that while untreated posts burn completely, creosoted pine poles are undamaged. Under these severe conditions the creosoted pine pole may take fire and smolder and smoke for a while, but finally the fire smothers itself out, leaving a practically undamaged pole. The action is analogous to a burning oil lamp wherein the wick though it forms the support for the flame is itself consumed very slowly.

### Appearance and Cleanliness

Early in the history of the development of creosoted pine poles some question was raised as to their use on city streets. It was feared that the bleeding of some of the poles might cause trouble if the clothing of pedestrians rubbed against them. No longer are these objections heard either in protest or propaganda. International's care in timber selection, the skill of its production and manufacturing forces, and advances in the science of timber treatment all have contributed to relegate these objections to the background and to give to the business district and the residential street the security and economy of the creosoted pine pole. Graybar-International poles are in use in the business and residential districts of the largest cities of the United States, and in thousands of the smaller ones. The present-day pole is a clean pole. It is smooth and shapely and stands with the appearance of tapered wrought-iron pipe, rather than that of processed trees.

### Termites

Termites are attracting more and more attention because of their attacks on poles. Formerly termites lived in the forests, but as the forests become depleted they seek shelter elsewhere and find their way into untreated structural wood. Untreated pole lines have been accused of acting as termite highways by means of which they could fly from pole to pole and then to residence; infesting new areas. It is a fact that termites have now been found in all but three states of the United States.

Creosoted pine poles are practically immune to termite attack. Even though checks in the wood may form, they do not go deep enough to expose untreated interior wood that would afford shelter for these insects.

### Improved Roof



The illustration shows a new type of pole roof that many of the utility companies are standardizing upon. It is a one-way roof, cut at an angle of 15°. It is to be recommended. The advantages of this roof are:

#### 1. Reduces Checking

A roof cut in this manner leaves a minimum of wood along the center line, the natural cleavage point of the pole. This invites checking. The one-way roof eliminates this disadvantage.

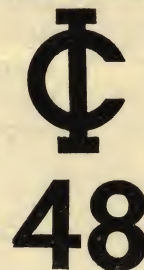
#### 2. Provides Better Drainage

As the roof of a pole weathers, the springwood rings of any species being softer than the summerwood, weather faster, causing the summerwood to stand out in ridges. On the two-way roof these ridges form retaining cups for rain water while on the one-way roof they drain.

#### 3. Conserves the Preservative

Evaporation is a surface phenomenon. There is less surface on a one-way than on a two-way roof.

### Marked Poles



Above is the mark by which Graybar-International poles are identified wherever found. This appears as a date-brand on the side ten feet from the butt of the pole; and is supplemented by an identifying brand on the top and the butt of each pole. These marks are conclusive evidence of our confidence in the quality of the product and the desire to be permanently identified with it.

Beware of unmarked poles. If in a few years they begin to fail, the experience is that it is impossible to tie them definitely to the source of supply. On the other hand when a company consistently uses high grade materials and good preservative treatment which result in long-time dependable service, the company willingly and permanently attaches its name to the product.



## UNION MONOTUBE POLES

For Transmission and  
Distribution Service

**M**ONOTUBE steel poles are the product of a manufacturer who has specialized in steel pole design and construction for over forty years.

Monotube steel poles are designed to be used for the same purpose as wood, structural steel, or sectional tubular poles.

Made of high grade, open hearth steel, their tensile strength and elastic limit are increased still further by the exclusive Union Metal cold rolling process. The result is a stronger, longer lived, and more rugged steel pole than produced by any other process.

In the manufacture of Monotube steel poles, variable strength requirements are met by increasing the diameter of the pole or utilizing heavier steel plate. Available in 11 gage, 7 gage, 3 gage, and 0 gage steel with ground line diameters ranging from 6 to 14 inches.

Monotubes are available in two designs, plain round or fluted. Both types are generally preferred equipped with a steel anchor base which is bolted directly to the concrete foundation; the plain round type, however, can also be furnished for embedment directly into the concrete.

Because of its continuous taper and one-piece construction, a pole of uniform quality and improved appearance results. Furthermore, the extraordinary strength of the Monotube eliminates the need for several sets of poles. There are many installations which successfully combine such services as power and light circuits, street lighting, trolley span wire suspension, fire and police alarm circuits, and other municipal services—thus eliminating the necessity for several sets of poles.

### *Monotube Advantages*

Economy of Installation and Maintenance

Great Strength with Light Weight

One-Piece Tapered Construction

Attractive Appearance

Flexibility

Complete information, prices and delivery on Union Metal Poles is available from your nearby Graybar office and warehouse.



## Union Monotube Steel Floodlighting Poles

### For Nighttime Sports

Meets the demand for tall floodlighting poles to provide adequate lighting, combined with a pleasing appearance, for all night sports.

A standardized line, streamlined in appearance and engineered to provide maximum strength and durability, that will withstand a 100-mile an hour wind when mounting the maximum number of floodlights indicated in the head arrangement selected.

Poles can be completely wired, and the lights mounted and positioned on the ground before erection.

Made of cold rolled steel in nominal heights of 40, 60, 80, and 100 feet. This standardization of heights results in lower cost, permits stock to be carried, and makes prompt shipment of poles possible. These advantages would be lost if the poles had to be tailor made for each installation.

Does not require guying. Anchored to concrete foundations.

Designed for underground wiring service.

Furnished with supports for mounting service platform, transformers, primary cutouts, and distribution boxes together with all necessary wire and cable inlets and outlets, handhole, etc.

The mounting frames are provided with slotted holes for bolting floodlights in position, and the pole comes complete with climbing steps.

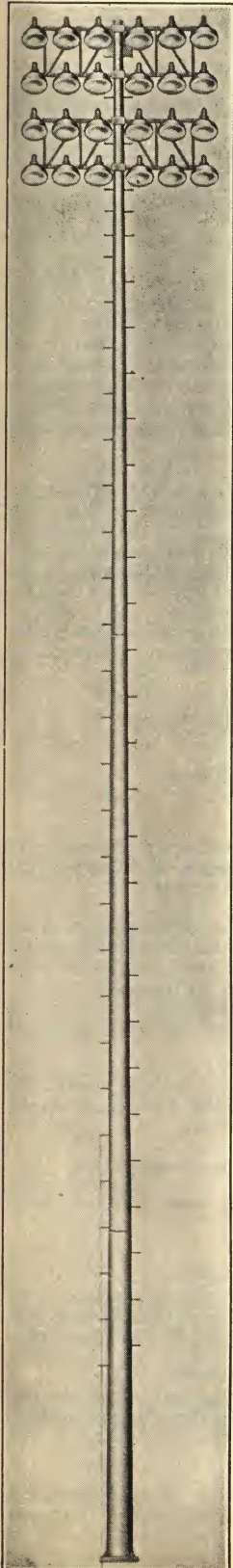
Other features are an all welded safety service platform, etc., for the convenience of the owner, contractor, and service men.

Available in the following light groups: 2 lights; 4 to 8 lights; 10 to 12 lights; 14 to 16 lights; and 18 to 24 lights.

Pole and equipment are given one coat of rust resisting paint inside and out before shipment.

The 40 and 60-foot poles are shipped in one piece and the 80 and 100-foot poles are shipped in two sections. Upper and lower sections are shop fitted before shipment and are properly marked for field identification. The taper assures a tight field joint when the two sections are forced together. No welding is necessary.

For additional information write for catalog.





## Rainier Crossarms

RAINIER

The indispensable characteristics in a crossarm are strength and durability. Strength to carry the dead load of conductor, sleet and wind, and to withstand shock within any combination of these two duties that may be imposed upon the arm in service. Durability is just as necessary as strength because the arm is intended for many years of service and the cost to replace an arm in the line is many times the price of the arm itself.

Lightness in weight is also important. The lighter arms are less costly to transport and install and of course they place a lesser burden on the pole structures.

Rainier fir crossarms meet all of these requirements. They are carefully graded with the strength reducing defects eliminated. They are seasoned to approximately equilibrium moisture content which adds further to the strength. They are seasoned slowly and under such control that from the start to the finish of the seasoning process, the moisture content of the interior is substantially the same as at the surface of the arm. Even microscopic as well as visible checking is held to a minimum, so that the finished arm is sound and solid. It will not readily soak up moisture nor admit decay fungi to the interior of the arm.

The largest factory is at Chehalis, Washington, where the finest dry kilns and kiln control equipment are located. The dry kiln operations are supervised by men who are specialists and experts in the drying of crossarm sizes of Douglas fir. Carload orders can be shipped economically from Chehalis to all parts of the United States.

Minimum Carload Weight—Fir from Pacific Coast Mills, 44,000 pounds. Small cars are scarce and weight of at least

50,000 pounds should be figured on. Cars to contain as high as 90,000 pounds can be had.

For the benefit of customers who desire LCL quantities of crossarms, particularly with drillings of non-standard sizes or specially spaced, and to provide immediate delivery of any quantities in emergencies, factories are maintained at Chicago, Illinois; Kansas City, Missouri; Newark, New Jersey; and Texarkana, Texas. These factories are fully provided with manufacturing equipment and are heavily stocked with crossarm lumber which permits prompt attention to the needs of users in all parts of the country. Kiln drying at these factories is not economical due to the cost of fuel, but each point carries a reasonable stock of blanks, kiln dried on the West Coast, for customers who ask for kiln dried arms. All these factories have well designed drying sheds in which the ventilation is controlled. All of these plants are equipped with precision instruments for checking the character of drying while the lumber is being conditioned, and in all of them the highest standards of lumber grading are followed.

Southern yellow pine when properly graded is rated equal in strength to Douglas fir. With proper care before treatment, then with pressure treatment under the recognized standards with high grade creosote oil, there can be no question of such arms lasting as long as any other part of the line structure. Pine arms are considerably heavier than fir, but are preferred in a good many localities, due to shorter distances from the source of supply and consequent saving in freight rates. Creosoted yellow pine crossarms are produced at Texarkana, Texas.

## Rainier Clear Douglas Fir Crossarm Specifications

## General

This specification covers clear Douglas fir crossarm in sizes 5x6-inch cross-section and smaller.

**Dimensions.** All arms furnished shall conform to the design and dimensions specified by the purchaser. Allowable variations shall be within the limits shown on the drawing included herewith. Where allowable variations are not shown approximate conformity to the dimensions given, consistent with good commercial practice, is required.

**Seasoning.** The average moisture content of any lot of arms shall be not less than 12% nor more than 20% of the oven dry weights. The difference between the moisture content of a section one-half the width and one-half the height of the arm, cut from the center, and the slabs surrounding such section shall not be more than 5%.

**Annual Rings.** Not less than 8 annual rings per inch on either end of the piece, except that arm having 33 $\frac{1}{3}$ % summerwood may have not less than 6 rings per inch.

**Checks, Shakes and Splits.** No arm shall contain shakes or splits. On top of arm, no checks more than 6 inches long. No checks anywhere shall measure more than one-third the length of the arm nor more in depth than one-fifth the distance to the opposite face.

**Grain.** Except in deviations at knots and pitch pockets, arms shall be free from spiral or diagonal grain with a slope of more than 1-inch in 12 inches.

**Knots.** No knots in clusters. No knot exceeding 1 inch in the middle half and no knot exceeding 1 $\frac{1}{4}$  inches in any part of the arm. No 6-inch section in the middle half shall contain plurality of knots of which the diameters added together exceed 1 inch and no 12-inch section elsewhere shall contain knots of which the diameters added together exceed 1 $\frac{1}{4}$  inches.

No knot exceeding  $\frac{1}{2}$  inch shall intersect any pin or bolt hole, and no knot exceeding  $\frac{3}{4}$  inch shall be closer than its own diameter to any hole bored for a wood pin.

Loose knots and knot holes that show no evidence of decay shall not be cause for rejection, provided their diameters are within the maximum limits for knots, and will drain water when the arm is in its normal position on the pole.

The size of any knot shall mean its measurement across the smallest diameter.

**Pitch Pockets.** Shall not exceed  $\frac{3}{4}$  inch in depth. No pitch pocket on top of an arm more than 4 inches in length, nor more than 8 inches in length elsewhere.

**Sapwood.** Not over  $\frac{1}{3}$  the girth of any cross-section.

**Loose Heart or Boxed Heart.** No loose heart nor heart centers.

**Rot.** No stain, rot or decay.

**Wane.** No wane within  $\frac{1}{4}$  inch of pin or bolt hole or on more than one edge. No wane surface more than  $\frac{3}{4}$  inch wide within 12 inches of the middle bolt hole, or 1 $\frac{1}{2}$  inches elsewhere.

**Warp.** A straight edge laid lengthwise on the concave surface of an arm shall show no offset for the arm greater than  $\frac{1}{16}$ -inch per foot of length. No arm shall be twisted or bent in more than one direction.

**Finish.** Arms shall be planed smooth on all 4 sides, cut accurately to length, ends coated with transparent but moisture-resistant gloss oil compounds, bored and roofed as ordered.



## Rainier Structural Douglas Fir Crossarm Specifications

**General.** This specification covers Rainier Structural Douglas Fir Crossarms made from dense select structural fir lumber in sizes 5x6-inch cross-section and smaller.

**Dimensions.** All arms furnished shall conform to the design and dimensions specified by the purchaser. Allowable variations shall be within the limits shown on the drawing included herewith. Where allowable variations are not shown, approximate conformity to the dimensions given, consistent with good commercial practice, is required.

**Seasoning.** The average moisture content of any lot of untreated arms of cross-section not exceeding 4x5 inches shall be not less than 12% nor more than 20% of the oven dry weights. The difference between the moisture content of a section one-half the width and one-half the height of the arm, cut from the center and the slabs surrounding such section shall not be more than 5%.

**Dense Material.** All crossarms shall be manufactured from lumber containing not less than six annular rings per inch on either one end or the other of a piece and in addition one-third or more summerwood (the dark portion of the annual ring) on either one end or the other. The contrast in color between summerwood and springwood shall be distinct.

Coarse grained pieces excluded by this rule are accepted as dense if they average one-half or more summerwood.

**Checks.** On top of arm. No checks more than 6 inches long. No checks anywhere shall measure more than one-third the length of the arm nor more in depth than one-fifth the distance of the opposite face.

**Grain.** Except in case of deviations at knots and pitch pockets, the grain, meaning the direction of the longitudinal wood fibers, shall throughout the central one-third portion of the arm, not depart from parallelism with the axis of the crossarm by more than 1 inch in 15 inches (approximately 4 degrees).

**Knots.** No knots in clusters. No knot exceeding  $\frac{1}{2}$  inch in its smallest diameter intersecting pin or bolt holes. In the middle half of the arm no knot exceeding  $\frac{3}{4}$  inch in diameter shall be closer than its own diameter to any hole bored for wood pins.

Otherwise any number of knots in any location may appear as follows:

Face.....inches 3-4  $4\frac{1}{4}$ -6  
Diam. between Center and Brace Bolt Holes in. 1  $1\frac{1}{4}$   
Diam. between Brace Bolt Holes and Ends in.  $1\frac{1}{4}$   $1\frac{1}{2}$

Loose knots and knot holes that show no evidence of decay shall not be cause for rejection provided their diameters are within maximum limits for knots, and will drain water when the arm is in its normal position on the pole.

Knots shall be measured across smallest dimension.

**Pitch Pockets.** Shall not exceed  $\frac{3}{4}$  inch in depth. No pitch pocket on top of an arm more than 4 inches in length, nor more than 8 inches in length elsewhere.

**Sapwood.** Bright sapwood permitted on not more than one-third the girth.

**Loose Heart or Boxed Heart.** No arms shall contain loose heart nor the exact pith center of the log.

**Rot.** Rot, dot or red heart will not be permitted.

**Wane.** Wand shall not be present within  $\frac{1}{4}$  inch of pin or bolt hole or on more than one edge of an arm. The width of the wane surface shall not exceed  $\frac{3}{4}$  inch within 12 inches of the middle bolt hole and  $1\frac{1}{2}$  inch elsewhere.

**Warp.** A straight edge laid lengthwise on the concave surface of an arm shall show no offset for the arm greater than one-tenth or an inch per foot of length. No arm shall be twisted nor bent in more than one direction.

**Finish.** Arms shall be planed smooth on all four sides, cut accurately to length, ends coated with transparent but moisture-resistant gloss oil compound, bored and roofed as ordered. All workmanship of highest commercial quality.

## Dimensional Tolerances



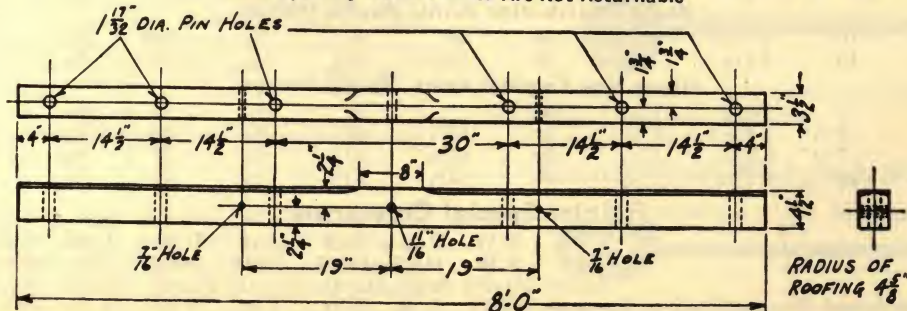
## Allowable Variations

Dimensions.....	c	d	e	bd
Over.....inches	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{4}$	0
Under.....inches	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{8}$

## Size of Hole Unless Otherwise Ordered

For Steel Bolt or Pin					
Size.....	inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Hole.....	inches	$\frac{1}{16}$	$\frac{9}{16}$	$\frac{11}{16}$	$\frac{13}{16}$
For Wood Pin					
Size.....	inches	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	
Hole.....	inches	$1\frac{9}{32}$	$1\frac{17}{32}$	$1\frac{25}{32}$	

Particular Care Should Be Taken in Ordering Arms with Special Borings or Spacing of Holes  
Arms Specially Manufactured Are Not Returnable



Written on the Order as Follows: 8 Ft.  $3\frac{1}{2} \times 4\frac{1}{2}$  Fir (6 Pin  $1\frac{17}{32}$ -In. Diam.). Pin Spacing 30-In. Center Pins (or Simply C),  $14\frac{1}{2}$ -In. Side Pins (S), 4-In. End Pins (E)— $\frac{1}{16}$ -In. Brace Bolt Holes (B.B.) 38 Inches Apart—Center Bolt (C.B.)  $1\frac{1}{16}$  In. Diameter.

Unless Otherwise Noted, All Arms Will Be Roofed or Rounded on Top to Shed Water



## Rainier Wood Crossarms

Pony Arms, 2 $\frac{3}{4}$ x3 $\frac{3}{4}$  Inches

No.	Per 100 Arms	Length		PIN HOLES			Diameter Center Bolt Hole Inches	*BRACE BOLT HOLES, IN.—		Wt., LB. PER 100 ARMS	
				Diameter Inches	Center	Sides		Distance Apart	Diam.	Douglas Fir	S.Y.P. Creo- soted 8 #
RA101	\$20.00	2'	2 Pin	1 $\frac{9}{32}$	17	....	3 $\frac{1}{2}$	1 $\frac{1}{16}$	25	540	800
RA102	25.00	2' 6"	2 Pin	1 $\frac{9}{32}$	23	....	3 $\frac{1}{2}$	1 $\frac{1}{16}$	25	675	1000
RA103	30.00	3'	2 Pin	1 $\frac{9}{32}$	29	....	3 $\frac{1}{2}$	1 $\frac{1}{16}$	25	810	1200
RA104	40.00	3' 6"	4 Pin	1 $\frac{9}{32}$	16	9 $\frac{1}{2}$	3 $\frac{1}{2}$	1 $\frac{1}{16}$	28	945	1300
RA105	60.00	5' 2"	6 Pin	1 $\frac{9}{32}$	16	9 $\frac{3}{4}$	3 $\frac{1}{2}$	1 $\frac{1}{16}$	28	1395	2000
RA106	70.00	6' 10"	8 Pin	1 $\frac{9}{32}$	16	9 $\frac{3}{4}$	3 $\frac{1}{2}$	1 $\frac{1}{16}$	28	1845	2600
RA107	90.00	8' 6"	10 Pin	1 $\frac{9}{32}$	16	9 $\frac{3}{4}$	4 $\frac{3}{8}$	1 $\frac{1}{16}$	28	2295	3200
RA108	100.00	10'	12 Pin	1 $\frac{9}{32}$	16	9 $\frac{5}{8}$	3 $\frac{7}{8}$	1 $\frac{1}{16}$	28	2700	3800

Electric Light Arms, 3 $\frac{1}{4}$ x4 $\frac{1}{4}$  Inches

RA110	\$39.375	3'	2 Pin	1 $\frac{17}{32}$	28	....	4	1 $\frac{1}{16}$	25	1062	1500
RA111	52.50	4'	4 Pin	1 $\frac{17}{32}$	16	12	4	1 $\frac{1}{16}$	28	1416	2100
RA112	65.625	5'	4 Pin	1 $\frac{17}{32}$	18	17	4	1 $\frac{1}{16}$	28	1770	2600
RA113	78.75	6'	4 Pin	1 $\frac{17}{32}$	22	21	4	1 $\frac{1}{16}$	32	2124	3100
RA114	78.75	6'	6 Pin	1 $\frac{17}{32}$	16	12	4	1 $\frac{1}{16}$	32	2124	3100
RA115	105.00	8'	6 Pin	1 $\frac{17}{32}$	18	17 $\frac{1}{2}$	4	1 $\frac{1}{16}$	32	2832	4100

Light Distribution Arms, 3 $\frac{1}{4}$ x4 $\frac{1}{4}$  Inches

RA120	\$52.50	3' 2"	2 Pin	1 $\frac{17}{32}$	30	....	4	1 $\frac{1}{16}$	28	1120	1600
RA121	78.75	5' 7"	4 Pin	1 $\frac{17}{32}$	30	14 $\frac{1}{2}$	4	1 $\frac{1}{16}$	38	1976	2900
RA122	105.00	8'	6 Pin	1 $\frac{17}{32}$	30	14 $\frac{1}{2}$	4	1 $\frac{1}{16}$	38	2832	4100
RA123	131.25	9' 2"	8 Pin	1 $\frac{17}{32}$	30	12	4	1 $\frac{1}{16}$	38	3245	4700

New England Arms, 3 $\frac{1}{4}$ x4 $\frac{1}{4}$  Inches

RA130	\$39.375	3'	2 Pin	1 $\frac{17}{32}$	30	....	3	1 $\frac{1}{16}$	33	1062	1500
RA131	78.75	5' 6"	4 Pin	1 $\frac{17}{32}$	30	13 $\frac{1}{2}$	4 $\frac{1}{2}$	1 $\frac{1}{16}$	36	1947	2800
RA132	105.00	7' 9"	6 Pin	1 $\frac{17}{32}$	30	13 $\frac{1}{2}$	4 $\frac{1}{2}$	1 $\frac{1}{16}$	36	2743	3950
RA133	131.25	10'	8 Pin	1 $\frac{17}{32}$	30	13 $\frac{1}{2}$	4 $\frac{1}{2}$	1 $\frac{1}{16}$	36	3540	5100

Pacific Arms, 3 $\frac{1}{4}$ x4 $\frac{1}{4}$  Inches

RA140	\$39.375	3'	2 Pin	1 $\frac{17}{32}$	28	....	4	1 $\frac{1}{16}$	32	1062	1500
RA141	65.625	5'	4 Pin	1 $\frac{17}{32}$	28	12	4	1 $\frac{1}{16}$	32	1770	2600
RA142	91.875	7'	6 Pin	1 $\frac{17}{32}$	28	12	4	1 $\frac{1}{16}$	32	2478	3600
RA143	118.125	9'	8 Pin	1 $\frac{17}{32}$	28	12	4	1 $\frac{1}{16}$	42	3186	4600
RA144	144.375	11'	10 Pin	1 $\frac{17}{32}$	28	12	4	1 $\frac{1}{16}$	42	3894	5610

Telephone Arms, 3 $\frac{1}{4}$ x4 $\frac{1}{4}$  Inches

RA150	\$78.75	6'	6 Pin	1 $\frac{9}{32}$	16	12	4	1 $\frac{1}{16}$	25	2124	3100
RA151	118.125	8' 6"	10 Pin	1 $\frac{9}{32}$	16	9 $\frac{3}{4}$	4	1 $\frac{1}{16}$	42	3009	4300
RA152	131.25	10'	10 Pin	1 $\frac{9}{32}$	16	12	4	1 $\frac{1}{16}$	42	3540	5100
RA153	131.25	10'	10 Pin	1 $\frac{9}{32}$	32	10	4	1 $\frac{1}{16}$	42	3540	5100

Telegraph Arms, 3 $\frac{1}{4}$ x4 $\frac{1}{4}$  Inches

RA160	\$78.75	6'	6 Pin	1 $\frac{9}{32}$	19	11 $\frac{1}{4}$	4	1 $\frac{1}{16}$	36	1980	2900
RA161	131.25	10'	10 Pin	1 $\frac{9}{32}$	22	11 $\frac{1}{4}$	4	1 $\frac{1}{16}$	36	3300	4800
RA162	131.25	10'	10 Pin	1 $\frac{9}{32}$	33	10	3 $\frac{1}{2}$	1 $\frac{1}{16}$	37	3300	4800

Medium Distribution Arms, 3 $\frac{1}{2}$ x4 $\frac{1}{2}$  Inches

RA170	\$59.37	3' 2"	2 Pin	1 $\frac{17}{32}$	30	....	4	1 $\frac{1}{16}$	28	1266	1900
RA171	59.37	4'	2 Pin	1 $\frac{17}{32}$	40	....	4	1 $\frac{1}{16}$	32	1600	2400
RA172	89.06	5' 7"	4 Pin	1 $\frac{17}{32}$	30	14 $\frac{1}{2}$	4	1 $\frac{1}{16}$	38	2233	3400
RA173	118.75	8'	6 Pin	1 $\frac{17}{32}$	30	14 $\frac{1}{2}$	4	1 $\frac{1}{16}$	38	3200	4800
RA174	148.44	9' 2"	8 Pin	1 $\frac{17}{32}$	30	12	4	1 $\frac{1}{16}$	38	3666	5500

Rural Distribution Arms, 3 $\frac{1}{2}$ x4 $\frac{1}{2}$  Inches

RA180	\$59.37	4'	1 Pin	1 $\frac{1}{16}$	..	....	4	1 $\frac{1}{16}$	38	1600	2400
RA180A	89.06	5' 7"	2 Pin	1 $\frac{1}{16}$	59	....	4	1 $\frac{1}{16}$	38	2233	3400
RA181	118.75	8'	2 Pin	1 $\frac{1}{16}$	88	....	4	1 $\frac{1}{16}$	38	3200	4800

## Rural Transmission Arms

RA182	\$166.67	10'	2 Pin	1 $\frac{1}{16}$	112	....	4	1 $\frac{1}{16}$	38	4660	7000
RA183	166.67	10'	2 Pin	1 $\frac{1}{16}$	112	....	4	1 $\frac{1}{16}$	60V	4660	7000

Heavy Distribution Arms, 3 $\frac{3}{4}$ x4 $\frac{3}{4}$  Inches

RA190	\$166.67	10'	4 Pin	1 $\frac{3}{16}$	38	36	5	1 $\frac{3}{16}$	60V	4660	7000
RA191	166.67	10'	8 Pin	1 $\frac{1}{32}$	30	13 $\frac{5}{8}$	4 $\frac{1}{8}$	1 $\frac{1}{16}$	38	4660	7000

Heavy New England Arms, 3 $\frac{3}{4}$ x4 $\frac{3}{4}$  Inches

RA200	\$50.00	3'	2 Pin	1 $\frac{17}{32}$	30	....	3	1 $\frac{1}{16}$	33	1398	2100
RA201	100.00	5' 6"	4 Pin	1 $\frac{17}{32}$	30	13 $\frac{1}{2}$	4 $\frac{1}{2}$	1 $\frac{1}{16}$	36	2563	3700
RA202	133.33	7' 9"	6 Pin	1 $\frac{17}{32}$	30	13 $\frac{1}{2}$	4 $\frac{1}{2}$	1 $\frac{1}{16}$	36	3612	5400
RA203	166.67	10'	8 Pin	1 $\frac{17}{32}$	30	13 $\frac{1}{2}$	4 $\frac{1}{2}$	1 $\frac{1}{16}$	36	4660	7000

## Rainier Special Crossarms

No.	RA1	RA2	RA3	RA4	RA5	RA6	RA7	RA8	RA9
Per Lineal Foot.....	\$ .10	.13125	.13125	.14844	.16667	.20	.18594	.25	.40
Size.....inches	2 $\frac{3}{4}$ x3 $\frac{3}{4}$	3x4 $\frac{1}{4}$	3 $\frac{1}{4}$ x4 $\frac{1}{4}$	3 $\frac{1}{2}$ x4 $\frac{1}{2}$	3 $\frac{3}{4}$ x4 $\frac{3}{4}$	3 $\frac{3}{4}$ x5 $\frac{3}{4}$	4x5	4 $\frac{1}{4}$ x5 $\frac{3}{4}$	5 $\frac{1}{4}$ x7 $\frac{1}{4}$
Douglas Fir: Wt. per Lineal Ft.....pounds	2.70	3.30	3.54	4.00	4.66	6.00	5.20	7.50	12.00
Southern Yellow Pine Creosoted 8 #: Wt. per Lineal Ft.....pounds	3.80	4.80	5.10	6.00	7.00	9.00	7.80	11.30	18.00

\*Brace bolt holes marked V drilled through the arm vertically; all others drilled horizontally.



## Soil Classification

The term soil classification indicates a basis by which you may estimate the amount of holding power an anchor of given size or design may be expected to have.

Soil classification is perhaps the most difficult factor to set up in a manner that can be interpreted fairly equally by all those concerned with anchor installations in all sections of the country. Attempts to classify soils by name, even generally, were misleading because of the numerous mixtures encountered in field conditions which, while they seemed to closely resemble each other, exhibited widely ranging strengths. Mixture of red and blue clay to one man was hardpan and to another was moist clay, etc. . .

A review of a large number of tests, however, revealed that moisture content and its effect on the soil in question, rather than a fine division of soils, was more of a determining factor provided the moisture content varied sufficiently to allow easily determined division points. Such a set-up did present itself and anchor holding powers estimated on this basis were much closer than those attempting to analyze the soil content. This set-up is offered as a suggested classification of soils for anchor installation.

### Class 1. Hard Rock (solid).

**Class 2. Shale, Sandstone,** (solid or in adjacent layers).

**Class 3. Hard, Dry,** (hardpan. Requires use of digging bar. Usually found under a Class 4 strata. Resembles soft rock.)

**Class 4. Crumbly, Damp,** (usually clay predominates. Insufficiently moist to pack into a ball when squeezing by hand. Particles crumble off).

**Class 5. Firm, Moist,** (usually clay predominates. Other soils commonly present. When squeezed by hand will form into a firm ball. Most soils in well drained areas will fall into this classification).

**Class 6. Plastic, Wet,** (usually clay predominates as in Class 5. Due to unfavorable moisture conditions such as areas subjected seasonally to heavy rainfall, sufficient water is present to penetrate the soil to appreciable depth and though the area is fairly well drained, the soil during such seasons becomes plastic and when squeezed will readily assume any shape. This soil is not uncommon in fairly flat terrain).

**Class 7. Loose, Dry,** (found in arid regions usually sand or gravel predominates. Filled in or built up areas in dry regions fall into this class. As the term implies, there is very little bond to hold the particles together).

**Loose, Wet,** (same as Loose Dry for holding power. High in sand, gravel, or loam content. Holding power at some seasons good, but during rainy seasons absorbs excessive moisture readily with resultant loss of holding power. Predominate in poorly drained areas).

**Class 8. Swamps and Marshes** (includes areas that are marshes only seasonally).

As pointed out before, most soils will vary some in their classification during a calendar year. Fortunately this variation is not too great in most cases due to the excellent drainage of the land or due to the presence of a water-shedding layer of clay or hardpan above the anchor. In some cases though, prolonged rains and melting snows have converted firm soils into a wet soft mass that flows about the anchor allowing it to work upward if the anchor loading is too heavy.

## Chance Never-Creep Anchors

### Without Rods



This anchor pulls against solid undisturbed earth; none of the holding area is wasted.

Easy to handle and easy to install. To install, bore the hole, drive rod into hole, and hang plate on rod.

Consists of a rod and a plate. Rod is drop-forged steel with thimble-eye head and pointed Never-Creep knob on lower end. Plate is a certified malleable casting.

Order the rod separately.

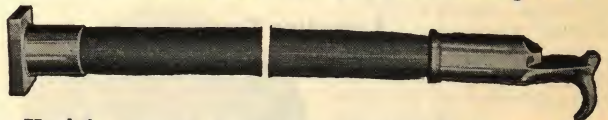
### Steel

No.	Size of Anchor Inches	Area Sq. In.	Rod, INCHES Diam.	INCHES Lgth.	SOIL HOLDING STR. LB.					Wt. Lb per 100
					Soil Classification					
					3	4	5	6	7	
617	6x17	102	$\frac{5}{8}$	84	21500	18500	14500	11500	7500	904
622	6x22	132	$\frac{3}{4}$	96	25000	21500	17500	13500	9500	1180
822	8x22	176	$\frac{3}{4}$	96	30000	26000	20500	16000	11500	1689
827	8x27	216	$\frac{3}{4}$	108	34000	29000	23500	18500	13500	1935

### Malleable

835	8x35	280	1	108	41000	34500	27500	22000	16500	2750
1040	10x40	400	1	120	50000	43000	34000	27500	21000	4761

## No. 15 Chance Never-Creep Installing Bars



Used for placing the plate in position in the hole; the opposite end is for tamping. Length, 10 feet. Net weight, 9 pounds.

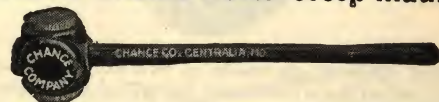
## Chance Expanding and Tamping Bars



Fits over rod. Used to expand anchor and tamp loose dirt.

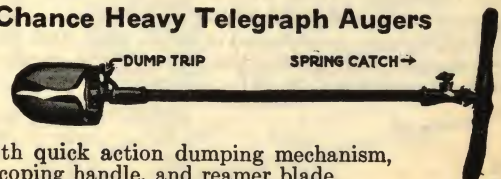
No.	Length	Net Weight	Regular		Heavy	
			10	12	10H	12H
	feet		10	12	10	12
	pounds		21	28	25 1/2	33 1/2

## No. 16 Chance Never-Creep Mauls



Used especially for driving Never-Creep Rods. Has two wood faces and two iron faces. Net weight, 12 pounds.

## Chance Heavy Telegraph Augers



With quick action dumping mechanism, telescoping handle, and reamer blade.

No.	812	610
Diameter of Holes Bored.....inches	8-12 3/4	6 1/2-8 1/2
Net Weight.....pounds	28	26



Chance Steel Expanding Anchors

Without Rods



The Chance Steel Expanding Anchor will withstand the most severe punishment without danger of breakage. It is fool-proof in construction and powerful in pull.

Easily installed in any position. Nut retainer prevents riding up the rod during expansion.

Size Anchor No.	Area Sq. In.	Rod, Diam.	INCHES Lgth.	SOIL HOLDING STR. LB.					Wt. Lb. per 100
				Soil Classification					
				*3	4	5	6	7	
62	50	1 1/2	84	13000	11000	9000	7000	4000	
64	70	1 1/2	84	16000	14000	11000	8500	5000	745
826	98	5/8	84	20000	17500	13500	10500	7000	1018
846	115	5/8	84	22000	19000	15000	11500	7500	1384
8410	130	3/4	84	24000	20500	16000	12500	8500	1567
841	130	1	84	24000	20500	16000	12500	8500	1583
1044	200	1	108	31000	26500	21000	16500	12000	2525
124	300	1	120	40000	34000	26500	21500	16000	4175

\*Not recommended for hard, dry soils.

Hubbard Hub-Anchors

Expanding Type

PATENT APPLIED FOR



Hubbard Anchors are made in two styles, two-way and four-way, and with various areas. Installation is accomplished by digging an 8-inch diameter hole (6-inch for No. 26050) at the proper angle for the guy, inserting the anchor and rod and applying any standard expanding tool until the anchor is fully expanded. Tamp dirt solidly after each three or four shovels-full, while back filling.

Hub-Anchors are constructed of heavy gage steel and will stand expansion into the hardest types of soil encountered without deformation.

No.	Per 100 Pcs.	Style	Area Sq. In.	Rod Diameter Inches	Approx. Ship. Wt. Lbs. per 100 Pcs.
26050	....	2-Way 6"	53	1 1/2 & 5/8	485
28090	....	2-Way 8"	94	5/8 & 3/4	965
48100	....	4-Way 8"	112	5/8 & 3/4	1350
48120	....	4-Way 8"	125	5/8 & 3/4	1400
48135	....	4-Way 8"	135	5/8 & 3/4	1500

Chance No-Wrench Screw Anchors

With Rods



This anchor has a large triple eye rod which admits a bar for a wrench to use in screwing the anchor down.

Easy to install. Hub is small and the blade is sharp and thin. Drill point aids dirt displacement and speeds installation.

Has extra holding power because of small hub and wide tapered blade. Drop-forged steel rod and anchor are securely welded together at both top and bottom of anchor blade.

No.	Size Anchor Inches	Area Sq. In.	Rod, INCHES Diam. Lgth.	SOIL HOLDING STR., LB.				No. In. Bdl.	Wt. Lb. per 100
				Soil Classification					
				4	5	6	7		
4345	4	12½	¾ 54	6000	4500	3000	1500	5	805
6346	6	28	¾ 66	8500	6500	5000	2500	5	1040
816	8	50	1 66	11000	8000	6500	3500	3	1900
10146	10	78	1¼ 66	13000	10000	8000	4500	1	3200
10148	10	78	1¼ 96	16000	12500	10000	6000	1	4100

Chance Swamp Screw Anchors

Without Pipe



The Chance Swamp Anchor is so constructed that the pipe wedges into the hub and becomes a part of the anchor.

Extra lengths of pipe may be added to attain the desired depth.

The triple eye nut accommodates 1, 2, or 3-guy strands.

No.	Size Anchor Inches	Area Sq. In.	Size Pipe In.	*SOIL HOLDING STR., LB. Soil Classification	No. In. Bdl.	Wt. Lb. per 100
8125-A	8	50	1 1/4	6000	2	1300
10150-A	10	78	1 1/2	9000	2	1600
122-A	12	113	2	12000	2	2670
152-A	15	176	2	15000	1	3675

\*These values are only typical figures for installations extending 8 feet into the plastic clay underneath the layer of mushy silt or quicksand. Because of the wide variations found in testing in swamps, a test set-up is recommended where extensive guying in a swampy area is contemplated. High loads can be sustained where these anchors are driven very deep.



## Chance Rock Anchors

### With Rods



Before Expansion

This anchor eliminates the necessity for carrying lead, concrete, or grouting equipment on the job.

Installed in a small hole bored with hand or mechanical rock drill. Expanded and wedged against the side of the hole by turning the rod.

When strain is applied the wedge becomes tighter.

This anchor does an excellent, safe, rock anchoring job.



After Expansion

No.	Size Anchor Inches	Rock Drill Size Inches	Rod, INCHES. Diam.	INCHES. Lgth.	SOIL ANCHOR ULTIMATE STR., LB. Soil Classification 1	Wt. Lb. per 100
R-315	1 3/4	2	3/4	15	Rod Strength	498
R-330	1 3/4	2	3/4	30	Rod Strength	678
R-353	1 3/4	2	3/4	53	Rod Strength	954

Set in holes drilled 2 inches in diameter and 12 inches deep in hard rock, these anchors will develop the full strength of the anchor rod.

## Chance Wrench Type Screw Anchors

### With Rods



This wrench type anchor has a socket and a square shank combined. A regular screw anchor wrench fits down over the square shank that is built up inside the socket.

There is no danger of splitting the wrench and no need for extra wrench fittings.

Anchor is shipped complete with threaded steel rods and thimble-eye nuts.

No.	Size Anchor Inches	Area Sq. In.	Rod, INCHES. Diam.	INCHES. Lgth.	SOIL ANCHOR ULTIMATE STRENGTH, POUNDS Soil Classification	No. In. Bdl.	Wt. Lb. per 100
1126-S	6	28	1 1/2	67	8500	5	988
1586-S	6	28	5/8	67	8500	5	1120
1588-S	8	50	5/8	67	11000	3	1680
1348-S	8	50	3/4	67	11000	3	1980
15810-S	10	78	5/8	67	13000	3	2170
13410-S	10	78	3/4	67	13000	3	2455

## No. 600 Chance Screw Anchor Wrenches

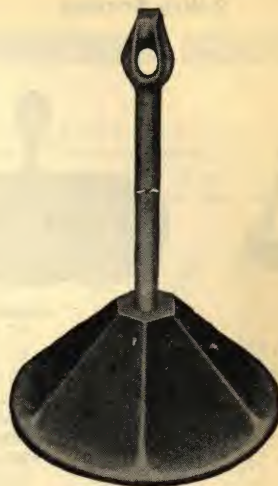


This wrench gives ample leverage for turning a screw anchor into the ground.

Net weight, 36 pounds.

## Chance Pyramid Cone Anchors

### Without Rods



The Chance cone anchor has flat opposing faces and flaring base, creating a wedging action that greatly increases holding power.

Nut retainer aids installation.

No.	Size Anchor Inches	Area Sq. In.	Rod, INCHES. Diam.	INCHES. Lgth.	SOIL HOLDING STR., LB. Soil Classification	Wt. Lb. per 100
8	8	63	5/8	84	Rod Strength	14000
10	10	104	5/8	84	Rod Strength	19000
12	12	132	3/4	96	Rod Strength	21500
16	16	239	3/4	108	Rod Strength	31000
19	19	336	1	120	Rod Strength	38500

\*In shale or stone, these anchors develop the strength of the rod.

## Everstick Cone Anchors

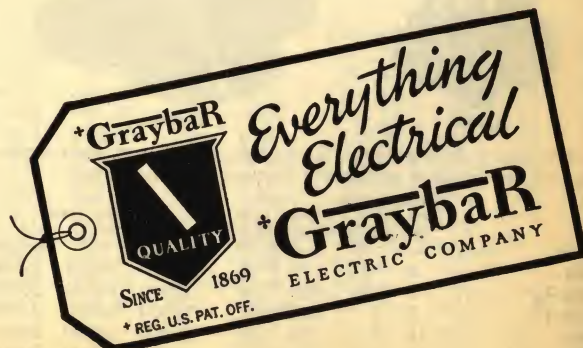


Used wherever rigid type anchor is required. Made of malleable iron with special ribbed construction which adds to its holding power and strength.

Everstick nut housing feature is used to assure a compact, tight connection between rod and anchor.

**HOLDING POWER.** In setting cone anchor, a sufficient amount of rock, dependent upon soil conditions, must be well tamped on top of anchor before back filled.

No.	Size Anchor and Hole.....in.	6-C	8-C	10-C	12-C	16-C	19-C	23-C
Each.....		6	8	10	12	16	19	23
Size Rod or Smaller.in.		5/8	3/4	3/4	1	1	1	1 1/4
Weight Anchor.lb.		2 1/2	5	10 1/2	14	20	40	54





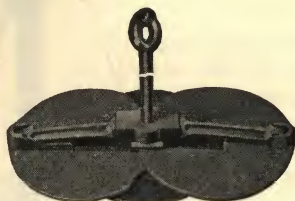
### Everstick Expanding Anchors

For All Types of Pole Line Construction

#### 2-Way Anchors



Open



Closed

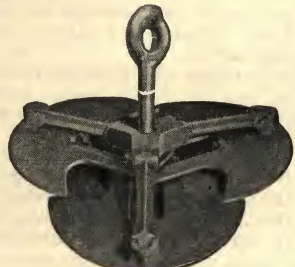
Sturdy anchor, easy to install.

No.	Each	Anchor Size Rod and Hole		Area Expanded Sq. In.	Wt. Anchor Lb.	HOLDING POWER, POUNDS		
		In.	or Smaller In.			Sand	Clay	Hardpan
62	....	6	5/8	55	7	3000	5000	7000
82	....	8	3/4	100	11	6000	11000	16000

#### 3-Way Anchors



Open



Closed

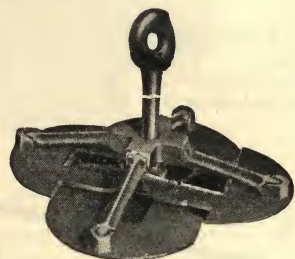
Ideal guy anchor for all around construction and maintenance. Easy to install. Simple to expand. Maximum holding power.

No.	Each	Anchor Size Rod and Hole		Area Expanded Sq. In.	Wt. Anchor Lb.	HOLDING POWER, POUNDS		
		In.	or Smaller In.			Sand	Clay	Hardpan
633	....	6	5/8	65	7 1/2	5000	8000	11000
834	....	8	5/8	90	11	6000	10000	14000
836	....	8	3/4	110	14	8000	13000	18000
8310	....	8	3/4	125	15	12000	18000	24000
8312	....	8	1	125	16	12000	18000	24000
10316	....	10	1	175	28	18000	32000	45000

#### 4-Way Anchors



Open



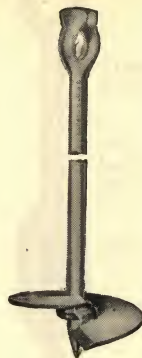
Closed

For heavy duty guying. Ease of expansion, super strength, and excess holding power are features of this anchor.

No.	Each	Anchor Size Rod and Hole		Area Expanded Sq. In.	Wt. Anchor Lb.	HOLDING POWER, POUNDS		
		In.	or Smaller In.			Sand	Clay	Hardpan
64	....	6	5/8	70	9	5000	8000	12000
84-3/4"	....	8	3/4	125	16	12000	18000	24000
84-1"	....	8	1	132	16	12000	18000	24000
104	....	10	1	210	30	20000	35000	50000
124	....	12	1 1/4	310	55	30000	50000	70000

### Hubbard Steelwing Anchors

Hot Galvanized



Anchor turns into the ground like a corkscrew and holds against a large area of undisturbed earth. It is easy to install or reclaim and the large Hubeye permits the insertion of a bar for leverage. The wing diameter is stamped on the rod (except Nos. 7542 and 7543) just under the eye as a permanent, above-ground record of its holding strength.

The No. 7524 Baby Steelwing, furnished with a 4-inch wing, is designed for permanent light guying or a temporary anchorage for heavier guys.

Nos. 7542 and 7543 are smaller sizes designed for anchoring fences, trees and other similar light work.

Hubeye		E.E.I. Eye		WING		Rod Diam. In.	Overall Lgth. Ft.	Wt. Lb. per 100
No.	Per 100	No.	Per 100	Diam. In.	Pitch In.			
....	....	*7542	....	2 3/4	1 3/8	1 1/2	1 1/2	130
....	....	7543	....	2 3/4	1 3/8	1 1/2	2 1/2	200
7524	....	†7524-A	....	4	1 3/4	3/4	4 1/2	800
7526	....	7526-A	....	6	1 1/2	3/4	5 1/2	1100
7527	....	7527-A	....	7	1 3/4	1	5 1/2	1750
7528	....	7528-A	....	8	2	1	5 1/2	2000
7530	....	7530-A	....	10	2 1/2	1 1/4	5 1/2	3200
7550	....	7550-A	....	10	2 1/2	1 1/4	8	4300

\*Open eye. †A. T. & T. Co. Std.  
Prices upon application.

#### Swamp Anchors

Consists of a steel wing and short shaft. Short shaft is threaded to take a 1 1/4-inch standard pipe coupling or 1 1/2 x 1 1/4-inch malleable iron pipe reducer.

The pipe coupling and reducer are not included but will be furnished if specified.

A special Hubeye nut, threaded to fit the pipe, is provided for the guy attachment.



No.	WING, INCHES		Rod Diam. In.	Overall Lgth. Ft.	Pipe Size In.	Wt. Lb. per 100
	Diam.	Pitch				
7548	8	2	1.66	*	1 1/4	† 920
7549	10	2 1/2	1.66	*	1 1/2	† 1370

Prices upon application.  
\*10 inches plus pipe.  
†Less pipe.

### No. 7546 Hubbard Rock Guy Bolts

Hot Galvanized



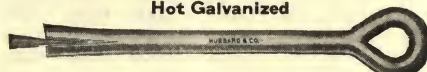
Used in solid rock formations or in stone or concrete walls.

Of 1-inch round steel, 18 inches over all, with standard drop forged oval eye (1 1/2 x 2 inches inside eye).

No. 7546, Ship. Wt. 660 Pounds..... per 100 \$237.98

### Hubbard Rock Guy Bolts

Hot Galvanized



Used in solid rock formations, in stone or concrete walls.

Has split bottom end and wedge that spreads end as bolt is driven against bottom of hole. Of one-inch round steel, 18 inches over all with standard drop forged oval eye (1 1/2 x 2-inch inside eye).

Shipping weight per 100, 665 pounds.

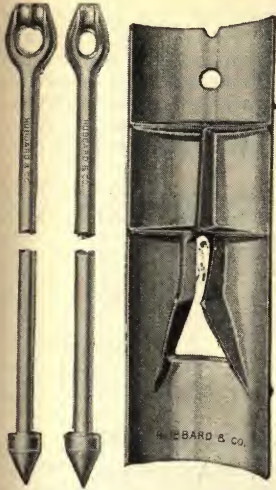
\*No. 7547, Eye Bolt and Wedge..... per 100 \$279.69

No. 7547-G, Hubeye Bolt and Wedge..... per 100 300.95

\*A. T. & T. Co. Std.



## Hubbard Plate Anchors and Anchor Rods



Hubbard plate anchors are made of malleable iron and are used with Hubeye plate anchor rods.

A hole is dug at right angles to the line of stress and the rod driven through to it. The anchor plate is then lowered by an installing tool and hooked over the conical end of the anchor rod. Tension is applied and the hole is filled.

## Plate Anchors

No.	Per 100	Approx. Area Sq. In.	ANCHOR SIZE, IN.— Width Length		Rod Diam. In.	Ship. Wt. Lb. per 100
2615	....	90	6	15	1/2-5/8	844
2618	....	110	6	18	5/8-3/4	969
2620	....	120	6	20	5/8-3/4	1075
2820	....	160	8	20	5/8-3/4	1650
2825	....	200	8	25	3/4	1950
2830	....	240	8	30	3/4	2875
2835	....	280	8	35	3/4-1	2750
1040	....	400	10	40	1	4761
1300	....		Installing Tool			900

## Plate Anchor Rods

Hubeye			Tu-Hubeye			Diam. Rod In.	Over- all Lgth. Ft.
No.	Per 100	Ship. Wt. Lb. per 100	No.	Per 100	Ship. Wt. Lb. per 100		
28405	\$143.68	390	....	....	....	1/2	5
28406	155.18	450	....	....	....	1/2	6
28407	167.30	510	....	....	....	1/2	7
28416	167.60	680	28516	\$217.42	688	5/8	6
28417	185.89	755	28517	255.00	763	5/8	7
28418	204.11	830	....	....	....	5/8	8
28426	236.60	960	28526	240.99	970	3/4	6
28427	263.00	1120	28527	267.39	1130	3/4	7
28428	289.41	1245	28528	293.79	1255	3/4	8
28429	315.83	1350	28529	320.19	1460	3/4	9
28430	342.36	1500	....	....	....	3/4	10
28437	460.62	2150	28537	467.31	2160	1	7
28438	509.43	2300	28538	514.65	2310	1	8
28440	607.39	2600	28540	611.14	2610	1	10
....	....	....	28542	707.63	2910	1	12

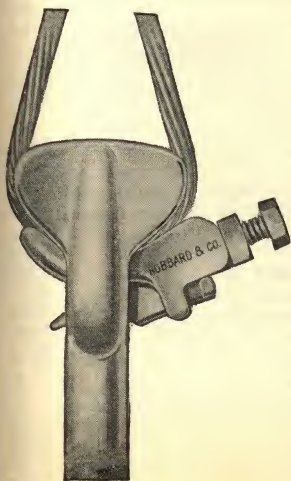
## No. 4243 Hubbard Bonding Clamps

Hot Galvanized

Affords a uniform contact area between the guy strand and the curve of the Hubeye.

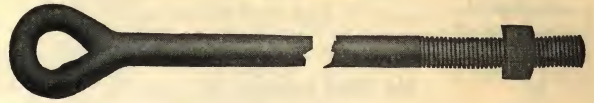
Weight per 100, 20 pounds.

No. 4243 . . . per 100 \$40.86



## Hubbard Anchor Rods

Hot Galvanized

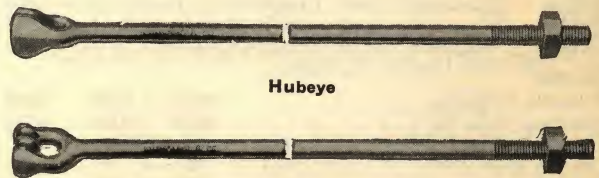


Standard oval eye anchor rod used to form the dead-man type of anchorage. The eye is drop forged and is stronger than the rod itself. Diameters of 3/4 inch or under have rolled threads, larger diameters have cut threads. All rods threaded 3 1/2 inches.

No.	Per 100	Diam. Rod In.	Overall Lgth. Ft.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. per 100
7355	\$107.75	1/2	5	1 1/4	1 1/2	350
7356	119.25	1/2	6	1 1/4	1 1/2	405
7357	130.79	1/2	7	1 1/4	1 1/2	510
7415	148.09	5/8	5	1 1/2	2	550
\$7416	166.41	5/8	6	1 1/2	2	650
†7417	184.70	5/8	7	1 1/2	2	750
\$7418	202.99	5/8	8	1 1/2	2	850
7426	230.57	3/4	6	1 1/2	2	910
7427	256.09	3/4	7	1 1/2	2	1060
†7428	281.61	3/4	8	1 1/2	2	1220
7429	308.68	3/4	9	1 1/2	2	1360
\$7430	335.92	3/4	10	1 1/2	2	1520
7438	490.70	1	8	1 1/2	2	2265
\$7440	587.27	1	10	1 1/2	2	2735
\$7442	683.84	1	12	1 1/2	2	3200
7444	1129.65	1 1/4	10	1 3/4	2 1/4	4500

## Hubbard Hubeye Anchor Rods

Hot Galvanized



Tu-Hubeye

Designed to provide a smooth curve with an ample radius for protection to the strand at the bend, thereby eliminating the use of a guy thimble. The strength of the Hubeye is greater than that of the rod.

The Tu-Hubeye, for two guys, is forged with the same generous radius as the Hubeye.

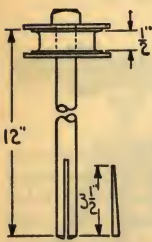
Hubeye			Tu-Hubeye			Diam. Rod In.	Overall Lgth. Ft.
No.	Per 100	Ship. Wt. Lb. per 100	No.	Per 100	Ship. Wt. Lb. per 100		
8405	\$117.33	370	....	....	....	1/2	5
8406	128.84	440	....	....	....	1/2	6
†8407	140.38	500	....	....	....	1/2	7
8415	157.68	550	8515	\$164.60	615	5/8	5
8416	176.00	654	8516	183.14	674	5/8	6
8417	194.29	758	8517	201.68	778	5/8	7
†8418	212.57	862	8518	219.71	882	5/8	8
8426	243.50	960	8526	245.31	1000	3/4	6
8427	269.03	1145	8527	272.38	1195	3/4	7
8428	294.55	1400	8528	299.45	1440	3/4	8
†8429	321.62	1460	†8529	325.16	1500	3/4	9
8430	348.86	1665	8530	352.38	1705	3/4	10
8437	461.03	2050	8537	466.76	2175	1	7
8438	508.67	2300	8538	514.11	2400	1	8
8439	556.32	2550	8539	561.41	2625	1	9
†8440	605.24	2800	†8540	610.59	2860	1	10
8442	701.80	3370	8540 1/2	707.06	3360	1	12
....	....	....	†8541	1173.41	4400	1 1/4	10
....	....	....	8542	1501.48	5230	1 1/4	12

†A. T. & T. Std. †A. R. A. Std. §E. E. I. Std.



## Hubbard Rock Guy Anchors

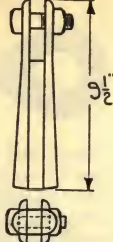
Hot Galvanized



No. 7544

Used in solid rock or in masonry. Installed at an approximate right angle to line of guy pull.

No. 7544 consists of a one-inch round steel bolt with a 1½-inch square head, 2 round washers and a round thimble. Bottom of bolt is split for a wedge which spreads end of anchor as it is driven against bottom of hole.



No. 7545

No. 7545 consists of two drop forged, wedge shaped sides, one shim and a ¾x2½-inch machine bolt. To install, a hole of the proper size is drilled and the two sides are placed in the hole. Shim is driven down between the two sides, expanding them against the sides of hole, and machine bolt is re-assembled. Anchor is then ready for use.

No. ....	*7544	*†7545
Per 100.....	\$442.59	215.29
Size Hole to Be Drilled..... inches	1	1¾
Length Overall..... inches	12¾	9½
Approx. Ship. Wt. per 100 Pieces... lb.	400	520

\*A.T.&T. Co. Std. †Western Union Std. ‡A.R.A. Std.

## Hubbard-Copperweld Alarm Box Grounders



No. 9335

The alarm-box grounder takes the place of the conduit and grounding wire previously used for connecting police and fire alarm boxes to ground. It makes a neat installation, which is quickly and easily installed, and will last a lifetime. Consists of a ¾-inch Copperweld rod with a bushing and a stranded copper lead wire for attachment to the alarm-box and internal mechanism.

The adapter type is for use on boxes with unthreaded holes. Copperweld staples for attachment to pole are also included. At bottom, it is connected to a ¾-inch ground rod with clamp No. 9492 or No. 9592.

Adapter Type No. ....	9235	9236	9237
Bushing Type No. ....	9335	9336	9337
Diameter Rod..... inches	¾	¾	¾
Length Rod..... feet	5	6	7
Ship. Weight per 100..... pounds	225	265	305

## Hubbard Steel Ground Rods

Hot Galvanized  
With Copper Wire

The wired rod has a length of No. 12 gage copper wire bonded firmly to upper end with five inches free for making ground wire connection.

All possibility of wire stripping loose is eliminated by the top turn being looped under itself, relieving the bond from carrying strain concentrated at that point. Special lengths of wire can be furnished.

No.	Per 100	Diameter Inches	Length Feet	Shipping Wt. Lb. per 100
*9505	\$94.76	1½	5	365
9506	107.70	1½	6	418
9516	148.46	1½	6	660
9538	477.93	1	8	2420

\*A. T. & S. Co. Std.

## Without Copper Wire

Ground rod without wire has a hole at the upper end for attaching ground wire. Hole is located 1 inch from the upper end of rod.

No.	Per 100	Diameter Inches	Hole Inches	Length Feet	Shipping Wt. Lb. per 100
9555	\$48.00	¾	1/8	5	203
9556	55.58	¾	1/8	6	245
9565	70.61	1½	5/32	5	346
9566	86.93	1½	5/32	6	415
9567	99.60	1½	5/32	7	484
9576	122.44	1½	3/16	6	650
9577	141.16	1½	3/16	7	750
9578	160.90	1½	3/16	8	850
9580	200.06	1½	3/16	10	1043
9582	239.79	1½	3/16	12	1251

## Hubbard Drive Head Steel Ground Rods

Hot Galvanized

Forged of high manganese steel with the ground wire clamp an integral part of the head. No bending allows large diameter wires to be attached. Chamfered head will not chip or flow when hammered. The reversible keeper used in two positions to accommodate wires from No. 00 to No. 4 and from No. 4 to No. 8. Both clamp and head are completely tinned.



No.	Per 100	Diameter Inches	Length Feet	Shipping Wt. Lb. per 100
25855	\$177.98	5/8	5	640
25856	195.87	5/8	6	745
25857	213.75	5/8	7	850
25858	231.64	5/8	8	955
25859	249.52	5/8	9	1060
25860	267.39	5/8	10	1165
25866	329.06	3/4	6	1040
25867	362.81	3/4	7	1190
25868	396.70	3/4	8	1340
25869	430.55	3/4	9	1490
25870	464.43	3/4	10	1640
25872	531.92	3/4	12	1940

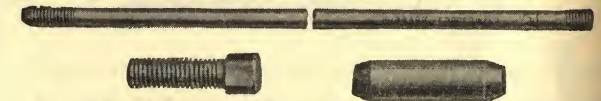
## Hubbard-Copperweld Ground Rods

Offers the permanence of copper plus the strength of steel. Made by molten weld process which assures a permanent bond between the copper and the steel.

¾-In. Diam.			¾-In. Diam.			¾-In. Diam.		
No.	Lgth. Ft.	Approx. Ship. Wt. Lb. per 100	No.	Lgth. Ft.	Approx. Ship. Wt. Lb. per 100	No.	Lgth. Ft.	Approx. Ship. Wt. Lb. per 100
9415	5	200	9442	12	1280	9458	18	2890
9416	6	240	9443	13	1390	9459	19	3045
9387	7	280	9443½	14	1500	9460	20	3100
9388	8	320	9444	15	1605			
½-In. Diam.			½-In. Diam.			1-In. Diam.		
9425	5	340	9656	16	1715	9466	6	1650
9426	6	410	9657	17	1825	9467	7	1925
9427	7	480	9658	18	1935	9468	8	2200
9428	8	550	9659	19	2045	9469	9	2475
9429	9	615	9660	20	2155	9470	10	2750
9430	10	685				9471	11	3025
9431	11	755	9445	5	775	9472	12	3300
9432	12	825	9446	6	930	9473	13	3575
9433	13	895	9447	7	1085	9473½	14	3850
9434	14	965	9448	8	1240	9474	15	4130
9434½	15	1035	9449	9	1395	9476	16	4405
			9450	10	1550	9477	17	4680
¾-In. Diam.			¾-In. Diam.			¾-In. Diam.		
9435	5	535	9451	11	1705	9478	18	4955
9436	6	640	9452	12	1860	9478½	19	5230
9437	7	750	9453	13	2015	9479	20	5500
9438	8	855	9454	14	2170	9691	25	6875
9439	9	960	9455	15	2425	9693	30	8250
9440	10	1070	9456	16	2580	9695	35	9625
9441	11	1180	9457	17	2735	9697	40	11000

Prices upon application.

## Hubbard-Copperweld Sectional Ground Rods



Consists of three parts, the rod, the coupling, and the driving stud. Couplings are made of bronze and studs are made of a special steel to withstand driving blows.

Available in ½, ¾, and 1-inch diameter. The size of the sectional rod is the diameter of the thread.

When ordering sectional rods, stock numbers may be specified by adding a number 2 before the stock number of the standard rod. Furnished in 10-foot lengths.

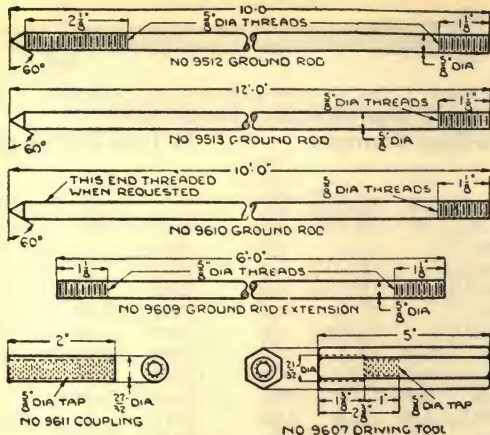
No.	Description	Wt. Lb. per 100
29430	½-Inch x 10-Foot Sectional Rod.....	685
29440	¾-Inch x 10-Foot Sectional Rod.....	1070
29450	1-Inch x 10-Foot Sectional Rod.....	1550
9533	½-Inch Bronze Coupling.....	18
9534	¾-Inch Bronze Coupling.....	30
9535	1-Inch Bronze Coupling.....	46
9537	½ to ¾-Inch Bronze Reducing Coupling.....	38
29533	½-Inch Driving Stud.....	15
29534	¾-Inch Driving Stud.....	23
29535	1-Inch Driving Stud.....	35

Prices upon application.



## Hubbard Sectional Ground Rods

Hot Galvanized



Used where deep grounding is desired.

Continuous sections may be coupled together with a No. 9611 coupling and driven to any desired depth.

For driving by hammer, No. 9607 driving tool is furnished, which screws securely over end threads of ground rod and will not jam or injure threads during driving.

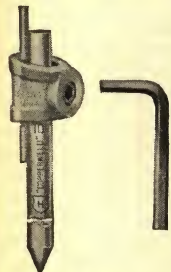
No.	Type	Diam. In.	Lgth. Ft.	Approx. Ship. Wt. Lb./100
9511	Hi-Carbon, Not Threaded.....	5/8	10	1043
9512	Hi-Carbon, Threaded.....	5/8	10	1043
9513	Hi-Carbon, Threaded.....	5/8	12	1251
9514	Hi-Carbon, Not Threaded.....	5/8	12	1251
9515	Hi-Carbon, Threaded.....	5/8	15	1564
9607	Heat Treated Driving Tool.....			156
9609	Hi-Carbon.....	5/8	6	626
9610	Threaded Ground Rod.....	5/8	10	1043
9611	Galvanized Coupling.....			15

## Hubbard-Copperweld Ground Wire Clamps

## Type A

The great strength and high elastic limit of this non-ferrous clamp enables it to maintain permanently low-resistance grounding connections.

Accommodates solid or stranded ground wires, and is furnished either with safety set-screw or square head set-screw.



No. 9492 with Safety Set-Screw

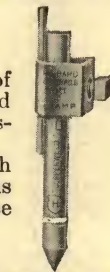
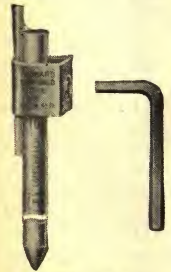
No. 9592 with Square Head Bolt

Safety Screw Type No.	Sq. Hd. Bolt Type No.	Rod Diam. In.	Wire Size	Approx. Shipping Wt. Lb. per 100
9490	9590	3/8	6 to 12 A.W.G. Solid.....	15
9491	9591	1/2	4 to 10 A.W.G. Solid.....	25
9492	9592	5/8	3/8-In. Strand to 8 A.W.G. Solid....	35
9493	9593	3/4	3/8-In. Strand to 8 A.W.G. Solid....	45
9495	9595	1	4/0 Strand to 4 A.W.G. Solid.....	50
9496	....	1 1/4	Pipe 4/0 Strand to 4 A.W.G. Solid...	120

## Type B

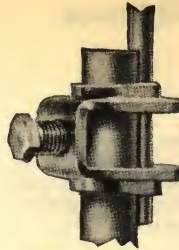
Designed to allow the use of Hubbard-Copperweld ground rods and clamps at a lower assembly cost.

Provides a permanent high pressure connection, which is made quickly without the use of solder.



With Safety Set-Screw				With Square Head Bolt	
6490	6590	$\frac{3}{8}$	6 to 14 A.W.G.		8
6491	6591	$\frac{1}{2}$	2 to 10 A.W.G.		15
6492	6592	$\frac{5}{8}$	2 to 8 A.W.G.		30
6493	6593	$\frac{3}{4}$	2 to 8 A.W.G.		40

## Reliable Ground Rod Clamps



Furnished with 1/2-inch hex head screw.

At 200-225 pounds pressure, corners become rounded.

Coating minimizes corrosion and galvanic action.

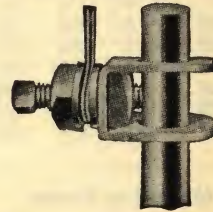
Furnished with hollow head set screws when specified.

One hexagon wrench included with each 50 clamps or less.

Bronze clamps are for copper and copperweld rods.

Galvanized steel clamps are for steel rods and pipes.

Bronze		Galv. Steel		Rod, INCHES		Wire A.W.G.		Std. Wt. Lb.		Ship.
No.	Per 100	No.	Per 100	Max.	Min.	Max.	Min.	Pkg.	per 100	
E48	\$18.60	S48	\$11.00	1 1/2	3/8	1	14	100	10	
E58	21.10	S58	13.20	5/8	1/2	3/0	14	100	17	
E68	24.30	S68	14.30	3/4	5/8	3/0	14	100	20	

Reliable Galvanized Steel Kling Klamps  
For Steel Rods and Pipes

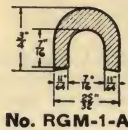
Heavily galvanized.

Furnished with tinned washers for use with copper or iron ground wires.

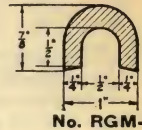
Cupped point bites into rod insuring good contact.

No.	Per 100	Rod, INCHES	Wire A.W.G.	Std. Pkg.	Ship. Wt. Lb. per 100
K48	\$11.00	1/2	3/8	2	14
K58	13.20	5/8	1/2	2	14

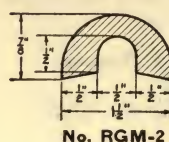
## Rainier Wood Ground Wire Moldings



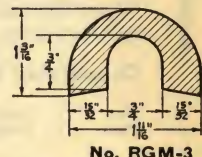
No. RGM-1-A



No. RGM-1



No. RGM-2



No. RGM-3

No.	RGM-1-A	RGM-1	RGM-2	RGM-3
Each.....				
Wt. per 1000 Lin. Ft.....lb.	100	120	180	310

## Staples

## For Ground Wire

Packed in standard kegs weighing 100 pounds.

Length.....	inches	1 1/2
Spread.....	inches	3/16
Galvanized Wire Gage No.....		9
Approximate Number in Keg.....		7200

Prices upon application.



## For Ground Wire Moulding

Hot dipped galvanized after cutting.

Packed in standard kegs weighing 100 pounds.

Length.....	inches	2	3
Spread.....	inches	1	1
Size Wire.....	inches	3/16	1/4
Approximate Number in Keg.....		2800	1200

Prices upon application.



## Hubbard U-Cable Guards and Straps

Hot Galvanized

When telephone or power cables enter the ground at the base of a pole or the side of a building, they are protected by U-cable guards. The guards are formed of No. 14 gage steel pressed to a U-shape which provides protection for pedestrians as well as providing stiffness for guard.

Nos. 7536 and 7537 have a 2½-inch inside diameter belled bottom to fit over ground conduit.

A. T. &amp; T. Co. Standard.

## U-Cable Guards

No.	Per 100	Length Feet	INSIDE DIAM. INCHES		Ship. Wt. Lb. per 100
			Top	Bottom	
7531	\$140.13	6	1 1/8	1 1/8	495
7531 1/2	.....	8	1 1/8	1 1/8	660
7532	200.46	5	2 3/16	2 3/16	825
7533	297.81	8	2 3/16	2 3/16	1408
7534	349.01	5	3 3/16	3 3/16	1210
7535	428.30	8	3 3/16	3 3/16	1925
7536	275.50	5	1 1/4	2 1/8	550
7537	437.54	8	1 1/4	2 1/8	875

## Mounting Straps

No.	Per 100	Size Steel Inches	Used with Cable Guard No.	Diam. Holes In.	Ship. Wt. Lb. per 100
7538	\$7.85	1/8x 3/4	7531	9/32	19
7539	9.49	1/8x 3/4	7532-3	9/32	23
7540	17.22	3/16x1	7534-5	1/32	61
7541	7.84	1/8x 3/4	7536-7	9/32	19

## Hubbard-Copperweld and Galvanized Staples

The larger sizes of Hubbard-Copperweld Staples are used for attaching ground wire moulding to the pole and the smaller sizes for insulated or bare ground wires.

Nos. 7521 and 7522 are used for standard one-inch moulding attachments.

## Copperweld Rolled Point Staples

No.	Per 100	Length Inches	Width Inside Inches	Thickness Inches	Approx. Shipping Wt. Lb. per 100
7493	.....	1 1/4	1/4	.114	1.0
7494	.....	1 1/2	5/16	.144	1.5
7495	.....	1 3/4	3/8	.144	2.0
7496	.....	2	1/2	.162	2.25
7497	.....	3	3/4	1/4	7.0
7498	.....	3	1 1/2	1/4	8.5
7499	.....	3 3/4	1 3/4	5/16	15.0
7521	.....	2	1 1/16	3/16	4.0
7522	.....	3	1	1/4	8.0
7523	.....	3 1/2	1 1/2	1/4	10.0

## Copperweld Cut Point (Fence) Staples

No.	Per 100	Length Inches	Width Inside Inches	Thickness Inches	Approx. Shipping Wt. Lb. per 100
7650	.....	2	1 1/2	.162	2.25
7651	.....	1 3/8	1 1/2	.162	1.75
7652	.....	1 1/2	3/8	.162	2.00
7653	.....	2	1 1/4	.162	2.25
7654	.....	1 1/4	3/16	.114	.75

## Galvanized Rolled Point Staples

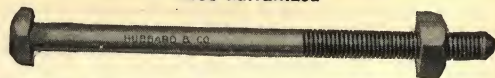
No.	Per 100	Length Inches	Width Inside Inches	Thickness Inches	Approx. Shipping Wt. Lb. per 100
8511	.....	1	3/8	1/8	.75
8512	.....	2	1 1/2	.162	2.25
8513	.....	2	1 1/16	3/16	2.80
8521	.....	3	3/4	1/4	6.65
8522	.....	3	1 1/16	1/4	7.00
8523	.....	3	1 1/2	1/4	7.75

## Galvanized Cut Point Staples

No.	Per 100	Length Inches	Width Inside Inches	Thickness Inches	Approx. Shipping Wt. Lb. per 100
8533	.....	1 1/2	3/16	.148	1.50
8535	.....	1 1/2	5/16	.148	1.75

## Hubbard Machine and Crossarm Bolts

Hot Galvanized



Bolts over 6 inches in length are drive pointed. Nuts are included; washers must be ordered separately.

## 3/8-Inch Diameter

No.	Per 100	Lgth. Lb. per 100	Lgth. Thrd. In.	Lgth. Lb. per 100
9601	.....	1	1	8.2
9601 1/4	.....	1 1/4	1 1/4	8.8
9601 1/2	.....	1 1/2	1 1/2	9.9
9602	.....	2	2	11.4
9602 1/2	.....	2 1/4	2 1/2	12.8
*9603	\$5.12	3	3	13.8
9603 1/2	5.35	3 1/2	3	16.8
*9604	5.71	4	3	18.4
9604 1/4	5.92	4 1/2	3	18.9
†9605	6.21	5	3	20.1
*9605 1/2	6.50	5 1/2	3	22.8
9606	6.72	6	3	23.5

## 1/2-Inch Diameter

No.	Per 100	Lgth. Lb. per 100	Lgth. Thrd. In.	Lgth. Lb. per 100
9701	.....	1	1	15.0
9701 1/4	.....	1 1/4	1 1/4	17.6
9701 1/2	.....	1 1/2	1 1/2	20.2
9702	.....	2	2	22.7
†9702 1/2	.....	2 1/2	2 1/2	24.6
9703	.....	3	3	27.3
9703 1/2	.....	3 1/2	3	29.7
†9704	.....	4	3	33.6
†9704 1/4	\$9.83	4 1/2	3	36.6
†9704 3/4	10.01	4 3/4	3	38.5
†9705	10.23	5	3	41.6
†9706	11.18	6	3	45.1
9707	15.81	7	3	51.9
9708	17.09	8	4	60.6
9709	.....	9	4	68.4
9710	19.24	10	4	76.2
9712	21.07	12	6	85.8
9714	23.20	14	6	91.6
9716	25.83	16	6	106.0
9718	28.21	18	6	121.0
9720	30.72	20	6	133.0

## 5/8-Inch Diameter

No.	Per 100	Lgth. Lb. per 100	Lgth. Thrd. In.	Lgth. Lb. per 100
9801 1/2	.....	1 1/2	1 1/2	37.0
9802	.....	2	2	41.0
9802 1/2	.....	2 1/2	2 1/2	45.0
9803	.....	3	3	49.0

†A.T. & T. Co. Std. \*Western Union Std. §E.E.I. Std.  
†A.R.A. Std.

## Hubbard Double Arming Bolts

Hot Galvanized



Furnished with full length thread and four nuts.

No.	Per 100	Diameter Inches	Length Overall Inches	Shipping Wt. Lb. per 100
9844	\$28.32	1 1/2	14	120
9846	30.02	1 1/2	16	129
9848	32.78	1 1/2	18	138
9850	34.40	1 1/2	20	146
9852	36.82	1 1/2	22	163
9854	38.48	1 1/2	24	172
†9864	53.05	5/8	14	194
†9866	55.50	5/8	16	200
†9868	59.31	5/8	18	218
†9870	61.83	5/8	20	235
†9872	65.77	5/8	22	253
†9874	68.30	5/8	24	271
9884	65.28	3/4	14	279
9886	69.31	3/4	16	301
9888	73.87	3/4	18	350
9890	78.15	3/4	20	372
9892	82.42	3/4	22	383
9894	86.95	3/4	24	427

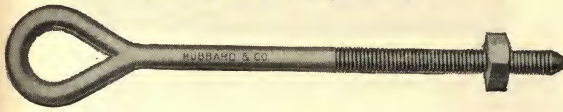
†A.T. & T. Co. Std. \*Western Union Std. §E.E.I. Std.  
†A.R.A. Std.



## Hubbard Eye Bolts

Hot Galvanized

## Standard Oval Eye Bolts



No.	Per 100	Diam. Rod Inches	Length Under Eye Inches	Width Eye Inches	Length Eye Inches	Shipping Wt. Lb. Per 100
39937	.....	1 1/2	6	1 1/4	1 1/2	82
39939	.....	1 1/2	8	1 1/4	1 1/2	94
39941	.....	1 1/2	10	1 1/4	1 1/2	107
39943	.....	1 1/2	12	1 1/4	1 1/2	120
39945	.....	1 1/2	14	1 1/4	1 1/2	134
39947	.....	1 1/2	16	1 1/4	1 1/2	147
39949	.....	1 1/2	18	1 1/4	1 1/2	160
39951	.....	1 1/2	20	1 1/4	1 1/2	172
§39956	\$51.33	5/8	6	1 1/2	2	131
39957	.....	5/8	7	1 1/2	2	138
§39958	53.94	5/8	8	1 1/2	2	145
39959	.....	5/8	9	1 1/2	2	157
§39960	56.69	5/8	10	1 1/2	2	169
§39962	59.20	5/8	12	1 1/2	2	179
§39964	61.81	5/8	14	1 1/2	2	192
§39966	64.46	5/8	16	1 1/2	2	205
§39968	67.20	5/8	18	1 1/2	2	229
§39970	69.79	5/8	20	1 1/2	2	242
39972	72.42	5/8	22	1 1/2	2	267
39974	75.04	5/8	24	1 1/2	2	280
39976	76.59	3/4	6	1 1/2	2	195
39977	.....	3/4	7	1 1/2	2	204
39978	81.12	3/4	8	1 1/2	2	213
39979	.....	3/4	9	1 1/2	2	222
39980	85.64	3/4	10	1 1/2	2	231
39982	90.29	3/4	12	1 1/2	2	248
39984	94.93	3/4	14	1 1/2	2	277
39986	99.60	3/4	16	1 1/2	2	308
39988	104.48	3/4	18	1 1/2	2	345
39990	109.35	3/4	20	1 1/2	2	374
39992	114.22	3/4	22	1 1/2	2	404
39994	119.10	3/4	24	1 1/2	2	434

§E.E.I. Std.

## Double Arming Eye Bolts

Furnished with three nuts and roll-threaded to 1 1/2 inches from the eye. Furnished with the standard E.E.I. eye.

29784	\$104.93	5/8	14	...	...	203
29786	108.04	5/8	16	...	...	253
29788	111.73	5/8	18	...	...	267
29790	115.42	5/8	20	...	...	286
29794	131.39	3/4	14	...	...	290
29796	135.92	3/4	16	...	...	360
29798	140.70	3/4	18	...	...	376
29800	145.48	3/4	20	...	...	411

## Hubbard Screw Eye Bolts

Hot Galvanized

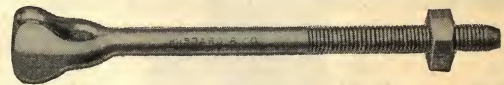


Supplied with either E.E.I. type eyes or Hubeye. Threads are gimlet point style.

No.	39929	39930	39931	39932
Per 100	\$50.78	61.42	83.29	105.80
Diameter.....inches	3/8	1/2	5/8	3/4
Length Under Eye.....inches	2 1/2	6	6 3/4	6 3/4
Shipping Weight.....per 100 pounds	20	77	112	183

## Hubbard Hubeye Bolts

Hot Galvanized



No. 9062



No. 9152

Hubbard drop forged straight and angle Hubeye bolts are designed to provide a smooth curve through the eye with a large radius for protection to the strand at the bend, thereby eliminating the use of guy thimbles.

The eyes of the angle Hubeye bolts are forged at a 45° angle to the shank.

One-inch sizes have cut threads, smaller sizes are roll-threaded.

All Hubeye bolts are drive pointed.

Straight		Angle		DIMENSIONS, INCHES			
No.	Per 100	No.	Per 100	Diam.	Lgth. Under Eye	Lgth. of Thread	Approx. Ship. Wt. Lb. per 100
9056	\$61.94	9149	\$67.41	5/8	6	4	110
9057	63.23	9149 1/2	68.74	5/8	7	6	121
9058	64.55	9150	70.06	5/8	8	6	132
9059	65.88	9150 1/2	71.35	5/8	9	6	143
9060	67.20	9151	72.67	5/8	10	6	154
9062	69.92	9152	75.41	5/8	12	6	176
9064	72.53	9153	78.00	5/8	14	6	198
9065	73.90	9153 1/2	79.27	5/8	15	6	209
9066	75.28	9154	80.53	5/8	16	6	220
9068	77.89	9155	83.39	5/8	18	6	242
9070	80.53	9156	86.11	5/8	20	6	264
9076	89.56	9159	96.38	3/4	6	4	179
9078	94.34	9160	101.14	3/4	8	4	204
9080	99.12	9161	105.90	3/4	10	6	229
9082	103.73	9162	110.55	3/4	12	6	255
9084	108.51	9163	115.45	3/4	14	6	280
9085	110.95	9163 1/2	117.82	3/4	15	6	306
9086	113.41	9164	120.19	3/4	16	6	319
9088	118.19	9165	124.97	3/4	18	6	344
9090	123.05	9167	129.73	3/4	20	6	369
9092	127.81	9168	134.49	3/4	22	6	395
9094	132.70	9169	139.25	3/4	24	6	420
8458	261.31	9170	275.42	1	8	6	400
8460	272.32	9171	287.02	1	10	6	448
8462	283.69	9172	298.39	1	12	6	497
8464	294.07	9173	309.90	1	14	6	546
8466	304.22	9174	320.78	1	16	6	594
8468	315.10	9175	332.53	1	18	6	642
8470	320.55	.....	.....	1	20	6	690



### Hubbard Carriage Bolts

Hot Galvanized



Used in attaching braces to crossarms. Furnished with standard heads, shoulders, nuts and rolled threads.

No.	Per 100	Diameter Inches	Length Inches	Length Thread Inches	Approx. Shipping Wt. Lb. per 100
9633	\$4.53	3/8	3	1 3/4	14.5
9633 1/2	4.84	3/8	3 1/2	1 3/4	16.5
†9634	5.12	3/8	4	1 3/4	18.3
†9634 1/2	5.37	3/8	4 1/2	1 3/4	20.0
§9635	5.62	3/8	5	1 3/4	21.1
9635 1/2	5.92	3/8	5 1/2	1 3/4	22.5
9636	6.15	3/8	6	1 3/4	23.3
9643	8.19	1/2	3	2 1/2	26.7
9643 1/2	8.60	1/2	3 1/2	3	29.2
9644	9.03	1/2	4	3	33.3
9644 1/2	9.45	1/2	4 1/2	3	36.7
9645	9.90	1/2	5	3	38.6
9645 1/2	10.34	1/2	5 1/2	3	41.2
9646	10.84	1/2	6	3	44.0
9647	13.16	1/2	7	3	50.0
9648	14.41	1/2	8	4	59.0
9650	17.37	1/2	10	4	72.0
9652	19.84	1/2	12	6	85.0
9654	21.94	1/2	14	6	99.0
9655	24.30	1/2	16	6	105.0

†A.T. & T. Co. Std. \*Western Union Std. §E.E.I. Std.  
†A.R.A. Std.

### Hubbard Lag Screws

Hot Galvanized



Fetter Drive

Gimlet Point

Unless otherwise specified, fetter drive lag screws will be furnished on all orders except for 1/4 and 5/16 inch diameters, which are furnished with gimlet point thread only.

No.	Per 100	Diameter Inches	Length Inches	Length Thread Inches	Approx. Shipping Wt. Lb. per 100
9721 1/2	.....	1/4	1 1/2	1 1/8	2.0
9722	\$3.24	1/4	2	1 5/8	3.5
9722 1/2	3.52	1/4	2 1/2	1 3/4	5.0
9723	3.80	1/4	3	2	6.5
9724	4.43	1/4	4	2 1/2	8.0
9732	3.75	5/16	2	1 3/4	5.2
9732 1/2	4.17	5/16	2 1/2	2	6.2
9733	4.53	5/16	3	2 1/4	7.5
9733 1/2	5.01	5/16	3 1/2	2 1/2	9.7
9734	.....	5/16	4	2 1/2	11.9
†9742 1/4	4.21	3/8	2 1/4	2	8.8
*9742 1/2	4.34	3/8	2 1/2	2	9.7
9743	4.53	3/8	3	2	11.0
9743 1/2	4.80	3/8	3 1/2	2 1/2	12.8
†9744	5.16	3/8	4	2 7/8	14.6
9744 1/2	5.35	3/8	4 1/2	3	16.4
9745	5.62	3/8	5	3	16.9
9746	6.19	3/8	6	3	19.9
9752 1/2	6.17	1/2	2 1/2	2	18.4
9753	6.72	1/2	3	2 1/2	20.9
9753 1/2	7.28	1/2	3 1/2	3	23.4
§9754	7.73	1/2	4	2 1/2	26.0
†9754 1/2	8.17	1/2	4 1/2	2 7/8	27.8
9755	8.84	1/2	5	3 1/4	32.1
9755 1/2	.....	1/2	5 1/2	3	33.9
9756	9.85	1/2	6	3	38.3
†9756 1/2	10.34	1/2	6 1/2	2 7/8	43.2
9757	10.83	1/2	7	3	46.4
9764	15.23	5/8	4	3	42.6
9764 1/2	15.88	5/8	4 1/2	3	46.0
§9765	16.53	5/8	5	3 1/2	50.6
9765 1/2	17.18	5/8	5 1/2	3	55.2
†9766	17.83	5/8	6	2 7/8	60.0
9770	.....	3/4	5	3	74.5
9771	.....	3/4	6	3 1/2	84.9
9772	.....	3/4	7	4	99.4
9773	.....	3/4	8	4 1/2	112.2

†A.T. & T. Co. Std. \*Western Union Std. §E.E.I. Std.  
†A.R.A. Std.

### Peirce Wood Screws

Hot Galvanized



Threads and screwdriver slot are kept clean and free of excess zinc.

No. ....	1051 1/2	1052 1/2	1053
Per 100 .....	\$3.88	4.66	5.40
Size No. ....	16	16	16
Length .....	1 1/2	2 1/2	3
Ship. Wt. per 100 .....	3.1	4.6	5.4

### Hubbard-Copperweld Nails

Used for attaching strain plates, or for locking pins and detachable pole steps, mounting conduit or cable guard straps and many other attachments where permanent safety from corrosion is necessary.

No.	Per 100	Nail Size	Length Inches	Shipping Wt. Lb. per 100
8252	.....	2d	1	1 1/8
8253	.....	3d	1 1/4	1 1/8
8254	.....	4d	1 1/2	1 1/4
8255	.....	5d	1 3/4	1 1/2
8256	.....	6d	2	1 3/4
8258	.....	8d	2 1/2	1 1/2
8259	.....	9d	2 3/4	1 3/8
8260	.....	10d	3	1 1/2
8262	.....	12d	3 1/4	1 3/4
8266	.....	16d	3 1/2	2 1/4
8270	.....	20d	4	3 1/4
8280	.....	30d	4 1/2	4 3/4
8290	.....	40d	5	6 1/4
8300	.....	50d	5 1/2	7 1/2
8310	.....	60d	6	10

### Hubbard Static-Proof Hardware

Static-proof hardware is a type of hardware that can be completely locked in place by using tapped washers and lock nuts and which offers larger areas of contact between the hardware and the structure.

Standard hardware on ordinary timber is subject to loosening by shrinkage of wood and vibration. If this fault is not corrected, it becomes necessary to retighten hardware regularly twice a year. This, in turn, results in an additional hazard due to the crushing of wood fibers each time the hardware is taken up, with consequent tendency to induce decay.

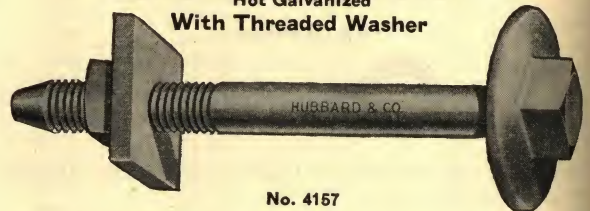
The design of static-proof hardware provides a bond between all metal parts. This bond is secured by thread washers and lock nuts and has the effect of making the hardware into a one-piece assembly.

All holes in arms or poles should be bored the same size as the bolt, assuring a drive fit. When ordering brace bolts, add 1/2-inch to standard lengths to allow for the use of tapped washers, and 1 inch to standard lengths for bolts where both standard nuts and washer nuts are to be used.

### Hubbard Washer Head Bolts

Hot Galvanized

With Threaded Washer



No. 4157

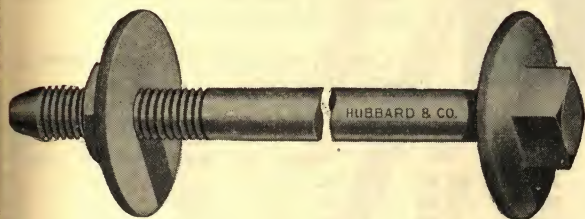
No.	Per 100	Diam. Head	Bolt Lgth.	Thread Lgth.	Approx. Ship. Wt. Lb. per 100
4157	\$29.33	3/8	4 1/2	1 3/4	35
4158	29.79	3/8	5	2 1/2	37
4159	47.59	1/2	6	3 1/4	87
4160	48.34	1/2	6 1/2	3 3/4	90



## Hubbard Washer Head Bolts

Hot Galvanized

With Threadless Washer



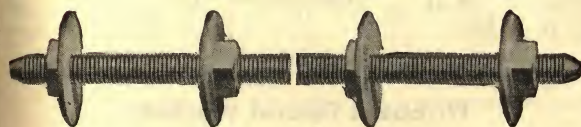
No. 4163

No.	Per 100	DIMENSIONS, INCHES				Approx. Ship. Wt. Lb. per 100
		Bolt Diam.	Head Diam.	Bolt Lgth.	Thread Lgth.	
4163	\$43.84	1/2	1 1/2	7	3	64
4164	45.27	1/2	1 1/2	8	4	69
4165	47.96	1/2	1 1/2	10	4	79
4168	73.80	5/8	2 1/2	8	4	163
4169	76.25	5/8	2 1/2	10	4	179
4170	78.69	5/8	2 1/2	12	6	193
4171	81.62	5/8	2 1/2	14	6	208
4172	84.02	5/8	2 1/2	16	6	223
4173	87.28	5/8	2 1/2	18	6	238
4174	91.92	5/8	2 1/2	20	6	253
4175	96.57	5/8	2 1/2	22	6	268
4176	101.21	5/8	2 1/2	24	6	283
4182	99.92	3/4	3	12	6	277
4183	103.49	3/4	3	14	6	300
4184	107.05	3/4	3	16	6	323
4185	112.17	3/4	3	18	6	346
4186	115.70	3/4	3	20	6	369
4187	119.21	3/4	3	22	6	392
4188	122.74	3/4	3	24	6	415

## Hubbard Double Arming Bolts

Hot Galvanized

With Washer Nuts



No. 29842

No.	Per 100	Approx. Ship. Wt. Lb. per 100				No.	Per 100	Approx. Ship. Wt. Lb. per 100			
		Diam. Bolt In.	Lgth. In.	Wt. Lb. per 100				Diam. Bolt In.	Lgth. In.	Wt. Lb. per 100	
29842	\$78.41	1/2	12	100		29884	\$195.42	3/4	14	347	
29844	80.20	1/2	14	109		29886	200.00	3/4	16	368	
29846	81.99	1/2	16	117		29888	204.57	3/4	18	389	
29848	84.89	1/2	18	126		29890	208.21	3/4	20	410	
29850	86.59	1/2	20	135		29892	214.95	3/4	22	431	
29852	89.12	1/2	22	143		29894	218.42	3/4	24	452	
29854	90.87	1/2	24	152		29902	.....	7/8	12	644	
29862	183.54	5/8	12	224		29903	.....	7/8	14	678	
29864	186.17	5/8	14	238		29904	.....	7/8	16	712	
29866	188.80	5/8	16	252		29905	.....	7/8	18	746	
29868	192.90	5/8	18	266		29906	.....	7/8	20	780	
29870	195.24	5/8	20	280		29908	.....	7/8	24	848	
29872	198.93	5/8	22	294		29911	.....	7/8	30	950	
29874	203.64	5/8	24	308		29914	.....	7/8	36	1052	
29882	190.85	3/4	12	326		29917	.....	7/8	42	1154	

## Hubbard Threaded Washers



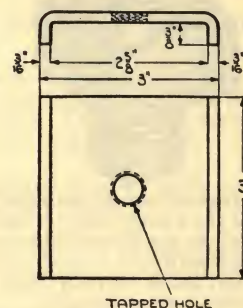
No.	Per 100	DIMENSIONS, INCHES				Approx. Ship. Wt. Lb. per 100
		Threaded Hole	Lgth.	Width	Thick-ness	
4110	\$11.77	1/4	1 1/4	1 1/4	1/4	11
4111	11.77	3/8	1 1/4	1 1/4	1/4	11
4112	17.23	1/2	3	1 3/4	1/4	37
4113	17.23	5/8	3	1 3/4	1/4	37
4114	17.23	3/4	3	1 3/4	1/4	37

## Hubbard Washer Nuts



No.	Per 100	DIMENSIONS, INCHES				Approx. Ship. Wt. Lb. per 100
		Bolt Diam.	Size of Square	Nut Diam.	Nut Thick-ness	
9192	.....	3/8	5/8	1 3/8	1 3/32	7
4193	\$15.56	1/2	1 1/16	1 1/2	1 1/2	12
4194	36.99	5/8	1 5/16	2 1/2	1 3/16	35
4195	39.62	3/4	1 7/8	3	1 3/16	50
4196	84.51	7/8	1 5/8	4 1/2	3 1/32	110

## Hubbard Threaded Flange Washers



Used on the arm end of wood brace attachments.

When a flanged washer is screwed against the arm with the flanges down, the brace slips over the bolt and is trapped by the flanges of the washer.

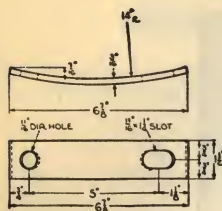
Flanges serve as a lock after installation and as a wrench hold for turning the washer tight.

No.	Per 100	DIMENSIONS, INCHES				Approx. Ship. Wt. Lb. per 100
		Threaded Hole	Lgth.	Width	Thick-ness	
5552	\$28.17	1/2	3	3	3/8	60
5553	28.17	5/8	3	3	3/8	60
5554	28.17	3/4	3	3	3/8	60
5555	28.17	7/8	3	3	3/8	60



## Hubbard Spring Washers

Hot Galvanized



No. 4629



No. 4538

Made of high quality spring steel. No locknuts need be used since the angle of the spring washer when compressed forms an effective lock.

No. 4629 is for use with pressed steel pole top pins. Mounted vertically on the back of the pole, No. 4629 locks the nuts on the pin mounting bolts.

No.	Per 100	Bolt Size	Hole Diam.	Steel Size	Overall Length	Approx. Ship. Wt. Lb. per 100
4629	\$26.57	5/8	1 1/16	3/16 x 1 1/2	6 7/8	56
4535	26.85	5/8	1 1/16	1/4 x 1 1/4	3 1/2	50
4536	.....	3/4	1 3/16	1/4 x 1 1/4	3 1/2	50
4538	16.47	3/8	7/16	5/32 x 1	2 7/16	25
4539	16.47	1/2	9/16	5/32 x 1	2 7/16	25
4540	34.57	5/8	1 1/16	1/4 x 1 3/4	3 1/2	100
4541	34.57	3/4	1 3/16	1/4 x 1 3/4	3 1/2	100
4542	34.57	7/8 and 1	1 1/16	1/4 x 1 3/4	3 1/2	100

## Hubbard Lock Washers

Hot Galvanized

Spring Washers

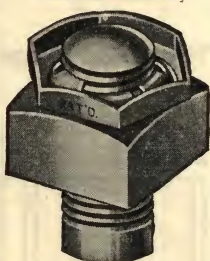
Used for locking nuts on metal surfaces.



No.	Per 100	Size In.	Hole Diam. In.	Bolt Diam. In.	Ship. Wt. Lb. per 100
5034	\$1.80	1/2 x 3/32	7/16	3/8	1.1
5035	1.64	1 1/2 x 1/8	9/16	1/2	2.4
5036	2.95	1 3/4 x 5/32	1 1/16	5/8	3.3
5037	4.15	1 1/2 x 3/16	1 3/16	3/4	5.5
5038	5.52	1 1/4 x 3/16	1 1/16	1	10.1

## Hubbard Palnuts

Hot Galvanized



Applied after the regular nut is completely tightened. By continued turning of the Palnut, after it has contacted regular nut, prongs of Palnut are drawn into root of bolt thread locking the nut permanently.

The resilient Palnut takes no load from the regular nut. Palnut grips like the jaws of a chuck.

No.	Per 100	Bolt Size	Hole Diam.	Steel Size	Overall Length	Approx. Ship. Wt. Lb. per 100
4530	\$1.95	1/2	1 1/16	3/16 x 1 1/2	6 7/8	56
4531	1.75	5/8	1 3/16	1/4 x 1 1/4	3 1/2	50
4532	2.36	3/4	1 3/16	1/4 x 1 1/4	3 1/2	50
4533	3.09	7/8	1 3/16	1/4 x 1 1/4	3 1/2	50
4534	5.09	1	1 3/16	1/4 x 1 1/4	3 1/2	50

## Hubbard M.F. Locknuts

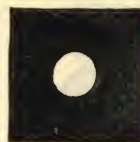
Hot Galvanized



No.	Per 100	Bolt Size	Hole Diam.	Steel Size	Overall Length	Approx. Ship. Wt. Lb. per 100
4510	\$1.95	3/8	1 1/16	3/16 x 1 1/2	6 7/8	56
4511	1.75	1/2	1 3/16	1/4 x 1 1/4	3 1/2	50
4512	2.36	5/8	1 3/16	1/4 x 1 1/4	3 1/2	50
4513	3.09	3/4	1 3/16	1/4 x 1 1/4	3 1/2	50
4514	5.09	7/8	1 3/16	1/4 x 1 1/4	3 1/2	50
4515	5.94	1	1 3/16	1/4 x 1 1/4	3 1/2	50

## Hubbard Square Washers

Hot Galvanized



Cleanly cut and smoothly galvanized. There are no irregularities of the zinc coating to interfere with the proper seating of bolt heads or nuts.

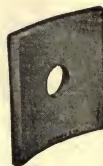
Can be supplied with nail holes at slight extra cost.

No.	Per 100	Size Inches	Diameter Hole Inches	Diameter Bolt Inches	Ship. Wt. Lb. per 100
7811	\$3.83	2 x 2 x 1/8	9/16	1/2	16
7812	3.83	2 x 2 x 1/8	1 1/16	5/8	16
7812 1/2	5.00	2 x 2 x 3/16	1 3/16	3/4	19
7813	5.98	2 1/4 x 2 1/4 x 3/16	1 1/16	5/8	25
7813 1/2	5.98	2 1/4 x 2 1/4 x 3/16	9/16	1/2	25
††\$7814	5.98	2 1/4 x 2 1/4 x 3/16	1 3/16	3/4	25
7816	10.00	3 x 3 x 3/16	1 3/16	3/4	53
††\$7817	13.01	3 x 3 x 1/4	1 3/16	3/4	69
7818	18.23	4 x 4 x 3/16	1 3/16	3/4	96
7819	24.08	4 x 4 x 1/4	1 3/16	3/4 & 7/8	127
7819 1/2	50.40	4 x 4 x 1/2	1 3/16	3/4	218
††\$7820	50.40	4 x 4 x 1/2	1 3/16	1	251
†\$7826	26.51	3 1/2 x 3 1/2 x 3/8	1 3/16	3/4 & 7/8	136
†7827	82.67	6 x 6 x 3/8	1 3/16	1	407

\*Western Union Std., †A. T. & T. Co. Std., ††A. R. A. Std. §E. E. I. Std.

## Hubbard Curved Washers

Hot Galvanized



Cleanly cut and smoothly galvanized. There are no irregularities of the zinc coating to interfere with the proper seating of bolt heads or nuts.

No.	Per 100	Size Inches	Diameter Hole Inches	Diameter Bolt Inches	Ship. Wt. Lb. per 100
7809 1/2	\$24.13	4 x 4 x 1/4	1 5/16	7/8	127
7810	13.27	3 x 3 x 3/16	1 3/16	3/4	46
7822	7.70	2 1/2 x 2 1/2 x 3/16	1 1/16	5/8	34
7823	13.58	3 x 3 x 1/4	1 3/16	3/4	66
7823 1/2	13.58	3 x 3 x 1/4	1 1/16	5/8	66
7824	21.86	3 x 3 x 3/16	1 1/8	1	94
*7825	16.95	3 1/4 x 3 1/4 x 1/4	1 3/16	3/4	85
*7829	28.41	3 1/2 x 3 1/2 x 3/8	1 3/16	3/4	120
*7830	28.41	3 1/2 x 3 1/2 x 3/8	1 1/8	1	120

\*A. R. A. Std.

## Hubbard Round Washers

Hot Galvanized



Cleanly cut and smoothly galvanized. There are no irregularities of the zinc coating to interfere with the proper seating of bolt heads or nuts.

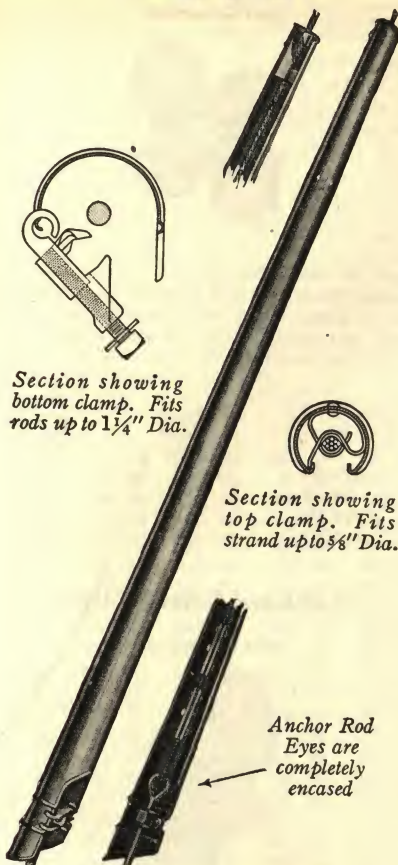
Can be supplied with nail holes at slight extra cost.

No.	Per 100	O.D. In.	Gage No.	Diameter Hole Inches	Diameter Bolt Inches	Ship. Wt. Lb. per 100
†\$7801	\$1.70	1	14	7/16	3/8	1.8
†\$7802	1.09	1 1/4	14	1 1/2	3/8	2.9
††\$7803	1.73	1 3/8	12	9/16	1/2	4.6
†\$7805	3.43	1 3/4	10	1 1/16	5/8	9.2
7805 1/2	3.43	1 3/4	10	1 3/16	3/4	9.2
7806	4.38	2	9	1 3/16	3/4	11.0
7808	7.35	2 1/2	8	1 1/16	1	19.0

\*Western Union Std. †A. T. & T. Co. Std. ††A. R. A. Std. §E. E. I. Std.



### Guy Wire Protectors Hot Galvanized



No. 7658 Loxfast-Light Type  
Loxfast Type

Top attachment accommodates strand up to 5/8-inch diameter. Bottom clamps are adjustable to fit rods up to 1 1/4 inches in diameter.

No.	Per 100	Overall Length Feet	DIAMETER, IN.		Steel Gage	Ship. Wt. Lb. per 100
			Inside Top	Inside Bottom		
7657	\$406.11	7	2	3 3/4	18	1100
7658	434.49	8	1 3/4	3 3/4	18	1200
<b>Loxfast-Heavy</b>						
27657	\$446.47	7	2	3 3/4	16	1400
27658	492.57	8	1 3/4	3 3/4	16	1550
<b>Half-Round</b>						

Clamping is accomplished by U-bolts which are designed to fit either strand, rod or clamp. The protector will not turn over on the wire.

No.	Per 100	Length Feet	Steel Gage	No. Bolts	Ship. Wt. Lb. per 100
7557	\$345.81	7	14	2	1100
7558	374.67	8	14	2	1200
7559	384.55	8	14	3	1300

### Peirce Pole Struts

Hot Galvanized

Pole can be made self-supporting or hog-guyed by means of pole struts.

Such trussed poles should be set in concrete, deeper than usual, and slack spans used on each side.

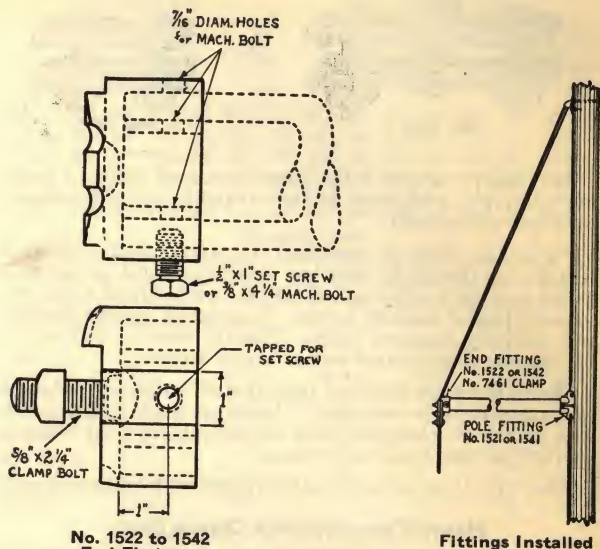
Made of heavy steel channel. May be sprung slightly during installation to fit variation in pole diameter. Three 1/2-inch lag screws attach them in position. Two struts are needed for each pole.

Braces are 1x1/2x1/8-inch channels for all sizes.

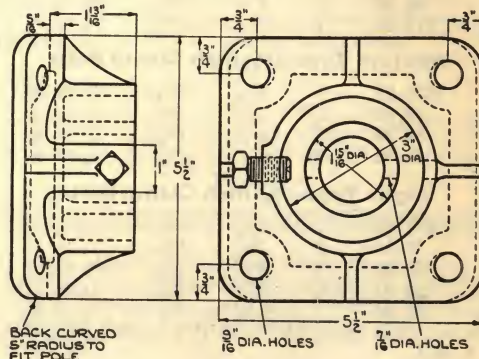
No.	1500	1518	1519
Per 100	\$498.28	\$518.57	678.51
Extension from Pole	11	18	24
Channel Horizontal Legs	2x3/16x3/16	2x3/16x3/16	2 1/2x3/8x3/16
Shipping Weight, Per 100	850	1050	1600

### Peirce Pipe Sidewalk Guy Arm Fittings

Hot Galvanized



No. 1522 to 1542  
End Fittings



Nos. 1521 to 1541 Pole Plates

Designed for two sizes of pipe, 2-inch and 2 1/2-inch. The smaller size fits over the central core and the larger size fits inside the outer shell. This arrangement is indicated by the top view of the end fitting diagram.

Assembly is secured by a set screw against the pipe or a machine bolt through the pipe.

A No. 7461 guy clamp is attached over the 5/8-inch stud which replaces the end bolt of the clamp.

### End Fittings for Sidewalk Guying

No.	Per 100	Furnished With	*Use Guy Clamp No.	Size of Pipe Inches	Approx. Ship. Wt. Lb. per 100
1522	\$193.79	Set Screw, 1/2x1-Inch	7461	2 & 2 1/2	337
1542	193.79	Mach. Bolt, 3/8x4 1/4-Inch	7461	2 & 2 1/2	355

\*Not included.

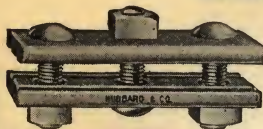
### Pole Plates for Sidewalk Guying

No.	Per 100	Furnished With	Size of Mtg. Holes In.	No. of Mtg. Holes	Approx. Ship. Wt. Lb. per 100
1521	\$232.36	Set Screw, 1/2x1-Inch	9/16	4	472
1541	232.36	Mach. Bolt, 3/8x4 1/4-Inch	9/16	4	490



Hubbard Guy Clamps

Hot Galvanized



No. 7461



No. 7402

Hot rolled to a 3/8-inch thickness from steel plates. Clamping principle employed is the straight, parallel groove, smoothly galvanized.

Particular care is exercised to keep clamp sections straight so that bolts will not be drawn tight on an area which may be warped out of contact with strand with consequent loss of holding power. Accurately spaced grooves and carefully centered holes. Cleanly sheared sections so that groove ends cannot cut or injure strand.

Clamp bolts are made of special steel to prevent elongation and eliminate stripping. Heads are made large to provide maximum clamping area and shoulders trap bolts to prevent turning while tightening.

Sizes with three or more bolts shipped with bolts reversed.

Heavy Type—5/8-Inch Clamp Bolts

No.	Per 100	No. of Bolts	Length Inches	Width Inches	Size Strand Inches	Shipping Wt. Lb. per 100
7460	\$194.76	3	6	2 1/8	3/8 to 5/8	397
†§7461	83.87	3	6	1 21/32	5/16 to 1/2	284
7462	56.59	2	4	1 21/32	5/16 to 1/2	186
7464	111.50	4	8	1 21/32	3/16 to 1/2	388

Medium Type—1/2-Inch Clamp Bolts

7447	\$30.95	1	17/16	1 9/16	1/4 to 3/16	64
*†7448	39.89	2	3 3/8	1 9/16	1/4 to 3/16	138
7449	56.34	3	4	1 9/16	1/4 to 3/16	188
*†7450	68.72	3	6	1 9/16	1/4 to 3/16	224

Light Type—1/2-Inch Clamp Bolts

7401	\$27.04	1	1 3/4	1 9/32	1/8 to 1/4	48
7402	37.19	2	3 3/4	1 9/32	1/8 to 1/4	106
7403	53.25	3	5 3/4	1 9/32	1/8 to 1/4	150
7404	68.83	4	7 3/4	1 9/32	1/8 to 1/4	210
7445	30.95	1	1 1/4	1 1/4	1/8 to 1/32	30

\*Western Union Std. †A. T. & T. Co. Std. ‡A. R. A. Std. §E. E. I. Std.

Hubbard Wire Rope Clips



No. 7486

Size Strand Inches	Malleable			Drop-Forged		
	No.	Per 100	Wt. Lb. per 100	No.	Per 100	Wt. Lb. Per 100
1/4	8480	\$8.00	14	7480	\$35.00	30
5/16	8481	9.00	16	7481	35.00	30
3/8	8482	12.00	22	7482	40.00	47
7/16	8483	15.50	28	7483	45.00	71
1/2	8484	18.50	40	7484	45.00	73
9/16	8484 1/2	24.50	52	.....	.....	...
5/8	8485	24.50	55	7485	55.00	101
3/4	8486	35.00	85	7486	70.00	157
7/8	8487	50.00	125	7487	85.00	242
1	8488	60.00	145	7488	100.00	264
1 1/8	8489	95.00	240	7489	125.00	332
1 1/4	8490	112.00	300	7490	150.00	448
1 3/8	8491	130.00	435	7491	175.00	488
1 1/2	8492	150.00	480	7492	200.00	544
1 3/4	.....	.....	...	7194	550.00	880

Hubbard Vise Clips

Hot Galvanized

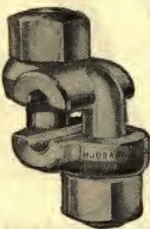


Consists of an assembly of two carriage bolts and two clamping members, which will provide a large gripping area. There are no sharp edges or corners to injure the strand. Bolt heads are prevented from turning by a shoulder trapped in the top and bottom members.

No.	Per 100	Size of Strand Inches	Diam. Carriage Bolts Inches	Approx. Ship. Wt. Lb. per 100
5447	\$35.00	1/4	3/8	45
5448	35.00	5/16	7/16	65
5449	40.00	3/8	7/16	95
5450	45.00	1/2	1/2	80

Hubbard Safety Clips

Hot Galvanized



No.	Per 100	Strand Size Inches	Approx. Ship. Wt. Lb. per 100
5470	\$35.00	1/4	25
5471	35.00	5/16	29.25
5472	40.00	3/8	36
5473	45.00	7/16	48
5474	45.00	1/2	57
5475	50.00	5/8	100

Hubbard Guy Thimbles

Hot Galvanized



No. 7593

Made from half oval steel, grooved to fit guy strand and bent to proper radius to prevent the strand from being sharply bent.

Furnished with open loop so it may be slipped over eyes.

No. ....	7593	7594	7595
Per 100. ....	\$9.58	12.93	17.96
Size Strand. .... inches	3/8	1/2	5/8
Size Guy Rod. .... inches	1/2 & 5/8	5/8 & 3/4	1
Ship. Wt. per 100. .... lb.	11	21	42

If desired thimble can be supplied in copper or bronze at special prices.



## Hubbard Drop-Forged Turnbuckles

Hot Galvanized



Eye and Shackle

Eye and Hook

Turnbuckle parts including bodies, hooks, eyes, and shackle, excepting plain stubs, are drop-forged from open hearth steel. Bodies are fitted with hexagonal ends so that turnbuckles may be taken up with a wrench at the end as well as with a lever at the center.

In the case of shackle assemblies, shackle bolts are furnished  $\frac{3}{8}$ -inch in diameter for the  $\frac{3}{8}$  and  $\frac{1}{2}$ -inch size turnbuckles;  $\frac{1}{2}$ -inch in diameter for the  $\frac{5}{8}$ -inch sizes;  $\frac{3}{4}$ -inch in diameter for the  $\frac{3}{4}$ -inch sizes;  $\frac{3}{4}$ -inch in diameter for the 1-inch sizes;  $1\frac{1}{8}$ -inch in diameter for the  $1\frac{1}{4}$ -inch sizes.

Stub and stub style is furnished for use where stubs are to be welded to tie rods and other similar types of construction. Special assemblies can be made to suit requirements.

Diam. and Takeup Inches	Eye and Eye Hook and Hook		Shackle and Eye		Shackle and Shackle	
	Galv. Per 100	S.C. Per 100	Galv. Per 100	S.C. Per 100	Galv. Per 100	S.C. Per 100
$\frac{1}{4} \times 4$	\$50.00	\$42.00	\$58.00	\$50.00	\$66.00	\$55.00
$\frac{1}{4} \times 4\frac{1}{2}$	55.00	45.00	64.00	54.00	72.00	60.00
$\frac{1}{4} \times 6$	72.00	60.00	74.00	64.00	88.00	78.00
$\frac{1}{2} \times 6$	96.00	80.00	110.00	95.00	130.00	115.00
$\frac{1}{2} \times 9$	145.00	120.00	170.00	140.00	190.00	155.00
$\frac{1}{2} \times 12$	170.00	140.00	200.00	160.00	230.00	185.00
$\frac{5}{8} \times 6$	115.00	95.00	130.00	110.00	150.00	125.00
$\frac{5}{8} \times 9$	175.00	145.00	200.00	170.00	230.00	190.00
$\frac{5}{8} \times 12$	210.00	170.00	240.00	200.00	270.00	220.00
$\frac{5}{8} \times 18$	260.00	220.00	310.00	260.00	350.00	290.00
$\frac{3}{4} \times 6$	150.00	125.00	175.00	145.00	200.00	165.00
$\frac{3}{4} \times 9$	230.00	190.00	270.00	220.00	300.00	250.00
$\frac{3}{4} \times 12$	270.00	220.00	310.00	260.00	350.00	290.00
$\frac{3}{4} \times 18$	360.00	300.00	420.00	350.00	470.00	390.00
$\frac{3}{4} \times 24$	420.00	350.00	490.00	410.00	550.00	460.00
$\frac{7}{8} \times 12$	340.00	280.00	390.00	320.00	450.00	370.00
$\frac{7}{8} \times 18$	430.00	360.00	500.00	420.00	575.00	470.00
$\frac{7}{8} \times 24$	525.00	440.00	625.00	510.00	700.00	575.00
1x6	240.00	200.00	276.00	230.00	318.00	265.00
1x12	420.00	350.00	480.00	400.00	550.00	460.00
1x18	550.00	450.00	650.00	525.00	725.00	600.00
1x24	675.00	550.00	800.00	650.00	875.00	725.00
1x36	850.00	700.00	1000.00	825.00	1150.00	925.00
$1\frac{1}{8} \times 12$	525.00	420.00	600.00	490.00	675.00	550.00
$1\frac{1}{8} \times 18$	675.00	550.00	800.00	650.00	875.00	725.00
$1\frac{1}{8} \times 24$	825.00	675.00	950.00	800.00	1050.00	875.00
$1\frac{1}{8} \times 36$	1050.00	850.00	1200.00	975.00	1350.00	1100.00
$1\frac{1}{4} \times 12$	725.00	600.00	900.00	750.00	1100.00	900.00
$1\frac{1}{4} \times 18$	900.00	750.00	1100.00	900.00	1300.00	1050.00
$1\frac{1}{4} \times 24$	1150.00	950.00	1300.00	1100.00	1500.00	1250.00
$1\frac{1}{4} \times 36$	1600.00	1300.00	1700.00	1400.00	1800.00	1500.00
$1\frac{1}{2} \times 12$	1100.00	900.00	1300.00	1050.00	1500.00	1200.00
$1\frac{1}{2} \times 18$	1350.00	1100.00	1575.00	1300.00	1800.00	1500.00
$1\frac{1}{2} \times 24$	1700.00	1400.00	2000.00	1650.00	2300.00	1900.00
$1\frac{1}{2} \times 36$	2200.00	1800.00	2600.00	2100.00	3000.00	2400.00
$1\frac{3}{4} \times 18$	2800.00	2300.00	3300.00	2700.00	3800.00	3000.00
$1\frac{3}{4} \times 24$	2200.00	1800.00	2800.00	2250.00	3300.00	2700.00
$1\frac{3}{4} \times 36$	2800.00	2300.00	3400.00	2800.00	3900.00	3200.00
$2 \times 36$	3600.00	3000.00	4200.00	3500.00	4800.00	3900.00
$2 \times 48$	4700.00	3800.00	5500.00	4400.00	6200.00	5000.00
2x24	4200.00	3500.00	5000.00	4100.00	5800.00	4700.00
2x36	5000.00	4000.00	5900.00	4800.00	6800.00	5500.00
2x48	6200.00	5000.00	7400.00	6000.00	8500.00	7000.00
$2\frac{1}{4} \times 24$	6000.00	5000.00	7400.00	6000.00	8500.00	7000.00
$2\frac{1}{4} \times 36$	6800.00	5500.00	8400.00	6900.00	10000.00	8200.00
$2\frac{1}{4} \times 48$	8600.00	7000.00	10500.00	8400.00	12500.00	9800.00
$2\frac{1}{2} \times 24$	8000.00	6500.00	For One Lock Nut Add 5 Per Cent			
$2\frac{1}{2} \times 36$	9300.00	7500.00	For Two Lock Nuts Add 10 Per Cent			
$2\frac{1}{2} \times 48$	11000.00	9000.00				

## Dimensions

Diam. Bolt In.	Open			Lgth. Opening In.	Diam. Bolt In.	Open			Lgth. Opening In.
	In.	In.	In.			In.	In.	In.	
$\frac{3}{8}$	17	11	6		$\frac{3}{4}$	19 $\frac{1}{4}$	13 $\frac{1}{4}$	6	
$\frac{1}{2}$	18	12	6		$\frac{3}{4}$	25 $\frac{1}{4}$	16 $\frac{1}{4}$	9	
$\frac{1}{2}$	24	15	9		$\frac{3}{4}$	31 $\frac{1}{4}$	19 $\frac{1}{4}$	12	
$\frac{1}{2}$	30	18	12		$\frac{3}{4}$	21 $\frac{1}{4}$	15 $\frac{1}{4}$	6	
$\frac{3}{8}$	19	13	6		$\frac{3}{4}$	33 $\frac{1}{4}$	21 $\frac{1}{4}$	12	
$\frac{3}{8}$	25	16	9		$1\frac{1}{4}$	29 $\frac{1}{4}$	17 $\frac{1}{4}$	6	
$\frac{3}{8}$	31	19	12		$1\frac{1}{4}$	35 $\frac{1}{4}$	23 $\frac{1}{4}$	12	

## Hubbard Forged Steel Turnbuckles

Hot Galvanized



Eye and Eye

Hook and Eye

Size Inches	Eye and Eye		Eye and Hook		Hook and Hook		Clevs and Hook		Clevs and Clevs		Stub and Stub	
	Eye and Eye Per 100	Eye and Hook Per 100	Eye and Clevs Per 100	Hook and Hook Per 100	Hook and Hook Per 100	Clevs and Hook Per 100	Clevs and Hook Per 100	Clevs and Clevs Per 100	Clevs and Clevs Per 100	Stub and Stub Per 100	Stub and Stub Per 100	Stub and Stub Per 100
$\frac{3}{8} \times 6$	\$71.00	\$71.00	\$73.00	\$71.00	\$73.00	\$73.00	\$83.00	\$56.00				
$\frac{3}{8} \times 9$	122.00	122.00	130.00	122.00	130.00	139.00	82.00					
$\frac{3}{8} \times 12$	162.00	162.00	191.00	162.00	191.00	221.00	104.00					
$\frac{1}{2} \times 6$	92.00	92.00	101.00	92.00	101.00	127.00	57.00					
$\frac{1}{2} \times 9$	141.20	141.00	174.00	141.00	174.00	190.00	89.00					
$\frac{1}{2} \times 12$	165.00	165.00	195.00	165.00	195.00	334.00	106.00					

## Dimensions

Lengths open and closed are given for hook and hook and eye and eye turnbuckles. Add two inches to sizes shown for stub and stub. In  $\frac{3}{8}$ -inch sizes only, add  $\frac{1}{2}$ -inch to sizes shown for clevs and clevs.

Size Inches	Closed Inches	Open Inches	Eye Width Inches	Eye Length Inches	OPENING, IN.	
					Hook	Clevs
$\frac{3}{8} \times 6$	11 $\frac{1}{2}$	17 $\frac{1}{2}$	$\frac{9}{16}$	1	$\frac{1}{2}$	$\frac{9}{16}$
$\frac{3}{8} \times 9$	14 $\frac{1}{2}$	23 $\frac{1}{2}$	$\frac{9}{16}$	1	$\frac{1}{2}$	$\frac{9}{16}$
$\frac{3}{8} \times 12$	17 $\frac{1}{2}$	29 $\frac{1}{2}$	$\frac{9}{16}$	1	$\frac{1}{2}$	$\frac{9}{16}$
$\frac{1}{2} \times 6$	12 $\frac{1}{2}$	18 $\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{5}{8}$	$\frac{5}{8}$
$\frac{1}{2} \times 9$	15 $\frac{1}{2}$	24 $\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{5}{8}$	$\frac{5}{8}$
$\frac{1}{2} \times 12$	18 $\frac{1}{2}$	30 $\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{5}{8}$	$\frac{5}{8}$

## Hubbard Alloy Arm Braces

Hot Galvanized

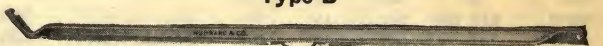
Used extensively on distribution lines in alleys or where obstructions make it necessary to support wires on one side of pole and at points where poles must be sent slightly out of alignment. Arm being off-set in this case makes it possible to avoid a slight angle in the line. Braces are attached to pole with  $\frac{1}{2}$ -inch lag screws and to arm with  $\frac{1}{2}$ -inch machine bolts. Furnished with steps.

## Type A

For side arm mounting.

No.	Per 100	Lgth. Ft.	Size Inches	Angle Inches	Wt., Lb. per 100	Ship. per 100
7972	\$424.45	6	$1\frac{3}{4} \times 1\frac{3}{4} \times \frac{3}{16}$	1750	7974	\$505.71
8			$1\frac{3}{4} \times 1\frac{3}{4} \times \frac{3}{16}$	1975		

## Type B



This is the standard brace for side arm mounting.

7979	\$345.73	5	$1\frac{3}{4} \times 1\frac{3}{4} \times \frac{3}{16}$	1240	7983	\$404.72	7	$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{16}$	1400	
7981	312.51	5	$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{16}$	1000	7984	426.99	7	$1\frac{3}{4} \times 1\frac{3}{4} \times \frac{3}{16}$	1660	
7982	382.03	6	$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{16}$	1200	7985	983.12	10	2	$x\frac{1}{4}$	3800

\*E. E. I. Std.

## Type C

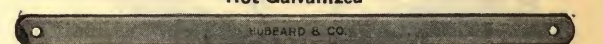


Can be used either under or on the side of the arm.

7996	\$386.36	6	$1\frac{3}{4} \times 1\frac{3}{4} \times \frac{3}{16}$	1796	7998	\$467.61	8	$1\frac{3}{4} \times 1\frac{3}{4} \times \frac{3}{16}$	2200
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## Hubbard Flat Crossarm Braces

Hot Galvanized



## Rounded Corner Style

Made from new open hearth steel punched for a  $\frac{1}{2}$ -inch through bolt or lag screw at the pole end and  $\frac{3}{4}$ -inch carriage bolts at the arm end. Ribbed braces. Clearance is allowed so that ribbed portion does not interfere with attachment to arm on either side.

All braces are furnished with rounded corners.

No.	Per 100	No.	Per 100	Size Steel Inches	Length Over All Inches	Wt. Lb. per 100	Ship. per 100
*8020	\$26.97	6620	.....	$\frac{1}{2} \times 1\frac{1}{2}$	20	156	
8022	29.28	6622	.....	$\frac{1}{2} \times 1\frac{1}{2}$	22	172	
8024	31.71	6624	.....	$\frac{1}{2} \times 1\frac{1}{2}$	24	187	
8026	34.79	6626	.....	$\frac{1}{2} \times 1\frac{1}{2}$	26	202	
†8028	36.52	6628	.....	$\frac{1}{2} \times 1\frac{1}{2}$	28	218	
*8030	38.93	6630	.....	$\frac{1}{2} \times 1\frac{1}{2}$	30	233	
8032	41.37	6632	.....	$\frac{1}{2} \times 1\frac{1}{2}$	32	249	
8120	33.12	8320	.....	$\frac{1}{2} \times 1\frac{1}{2}$	20	185	
8122	36.21	8322	.....	$\frac{1}{2} \times 1\frac{1}{2}$	22	201	
8124	39.14	8324	.....	$\frac{1}{2} \times 1\frac{1}{2}$	24	220	
8126	42.19	8326	.....	$\frac{1}{2} \times 1\frac{1}{2}$	26	238	
§8128	45.12	8328	.....	$\frac{1}{2} \times 1\frac{1}{2}$	28	256	
8130	48.29	8330	.....	$\frac{1}{2} \times 1\frac{1}{2}$	30	275	
8312	51.22	8332	.....	$\frac{1}{2} \times 1\frac{1}{2}$	32	293	

\*A.T.&amp;T. Co. Std.

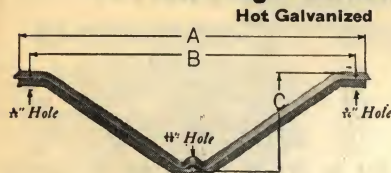
†A.R.A. Std.

‡Western Union Std.

§E.E.I. Std.



## Hubbard Angle Crossarm Braces



In the construction of heavy pole lines, the one-piece angle steel crossarm brace is in general use. It fastens under the arm with 1/2-inch machine bolts and to the pole with a 5/8-inch through bolt or lag screw. Special sizes supplied on request. When ordering, state size of angle, A, B, and C dimensions, and hole sizes.

No.	Per 100	Angle Size Inches	DIMENSIONS INCHES			Ship. Wt. Lb. per 100
			A	B	C	
7948	\$226.80	1 1/2 x 1 1/2 x 3/16	51	48	14	974
7950	196.65	1 1/2 x 1 1/2 x 3/16	40	37	12	781
7952	226.80	1 1/2 x 1 1/2 x 3/16	51	48	14 3/4	979
7953	309.73	1 3/4 x 1 3/4 x 3/16	63	60	18	1408
7954	343.58	1 3/4 x 1 3/4 x 3/16	69	66	20	1551
7955	364.30	1 3/4 x 1 3/4 x 3/16	75	72	18	1639
7956	413.16	2 x 2 x 3/16	75	72	22	1958

## E.E.I. Standard

No. 7940. For use with E.E.I., 7 foot, 2-pin medium voltage crossarm.

No. 7942. For use with E.E.I., 10 foot, 4-inch pin, medium voltage crossarm.

No. 7943. For use with E.E.I., special high voltage crossarms.

7940	\$212.51	1 1/2 x 1 1/2 x 3/16	45	42	12	858
7941	244.04	1 1/2 x 1 1/2 x 3/16	51	48	18	1067
7942	268.51	1 1/2 x 1 1/2 x 3/16	63	60	18	1210
7943	375.73	1 3/4 x 1 3/4 x 3/16	75	72	22	1716

## Hubbard Vertical Braces

Standard Type  
Hot Galvanized

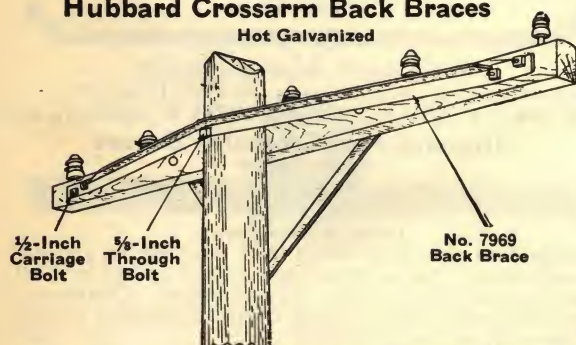


No.	Per 100	No. of Arms	Spacing Inches	Length Overall Inches	Size Angle Inches	Shipping Wt. Lb. per 100
7976	\$81.60	2	18	20	1 1/2 x 1 1/2 x 3/16	300
7977	141.28	3	18	38	1 1/2 x 1 1/2 x 3/16	620
7978	204.30	4	18	56	1 1/2 x 1 1/2 x 3/16	840
*7986	102.32	2	24	26	1 1/2 x 1 1/2 x 3/16	380
*7987	189.66	3	24	50	1 1/2 x 1 1/2 x 3/16	700
7988	268.63	4	24	74	1 1/2 x 1 1/2 x 3/16	1160

\*E. E. I. Std.

## Hubbard Crossarm Back Braces

Hot Galvanized



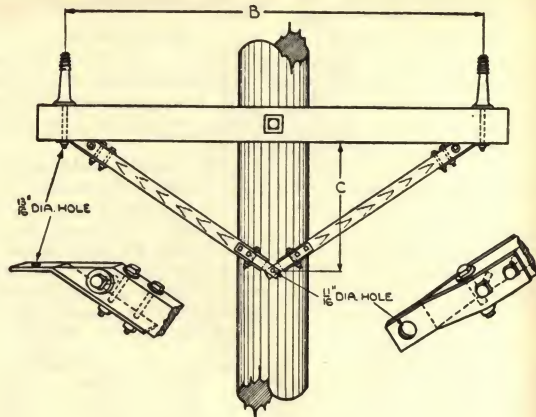
Used to reinforce crossarms at corners and terminal poles and in many cases eliminates the necessity for double arming.

The angles are made of open hearth steel and are attached to the arm by means of two 1/2-inch machine bolts at each end. If vertical brace is not used, crossarm attachment may be made by using 1/2-inch carriage bolts.

No.	Per 100	Angle Size Inches	Overall Length Inches	Shipping Wt. Lb. per 100
7964	\$205.39	1 1/2 x 1 1/2 x 3/16	48	500
7965	307.42	1 1/2 x 1 1/2 x 3/16	60	750
7966	378.38	1 1/2 x 1 1/2 x 3/16	72	1060
7967	477.68	1 3/4 x 1 3/4 x 3/16	94	1660
*7969	525.20	1 3/4 x 1 3/4 x 3/16	109	1825

\*A. T. & T. Co. Std.

## Hubbard Square 2-Piece Wood Crossarm Braces



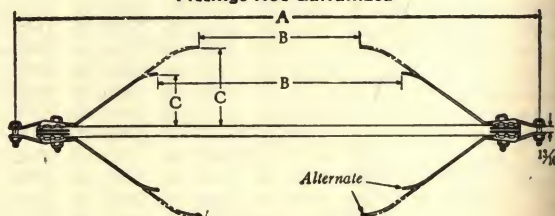
Made of hickory, 1 1/2-inch square, creosote dipped. Fitted with hot galvanized fittings. Under compression, the strain against the metal pieces at the lower end is borne by the wedging effect rather than the assembly bolts. The same is true at the top except that crossarm acts as one plane of the wedge. Under tension, reinforcing bolts prevent wood from splitting. Members are the same so they may be interchanged or mounted on either side of the pole.

Original series is for carriage bolt attachment to crossarm. B Series is for pin attachment. Pole and arm mounting bolts are not included. Nos. cover two pieces making one complete brace.

Carriage Bolt			Pin			DIMENSIONS, INCHES	
No.	Per 100	Approx. Ship. Wt. Lb. per 100	No.	Per 100	Approx. Ship. Wt. Lb. per 100		
5537	\$184.09	550	5537-B	\$184.09	550	37	12
5542	187.26	580	5542-B	187.26	580	42	12
5547	192.02	640	5547-B	192.02	640	48	14 3/4
5548	192.02	675	5548-B	192.02	675	48	18
5560	200.09	735	5560-B	200.09	735	60	18
5561	210.93	815	5561-B	210.93	750	60	26 1/2
5566	217.68	785	5566-B	217.68	785	66	20
5572	233.68	850	5572-B	233.68	850	72	22
5584	254.58	1050	5584-B	254.58	1050	84	24

## Hubbard O-B Wood Guy Strain Insulators

Fittings Hot Galvanized



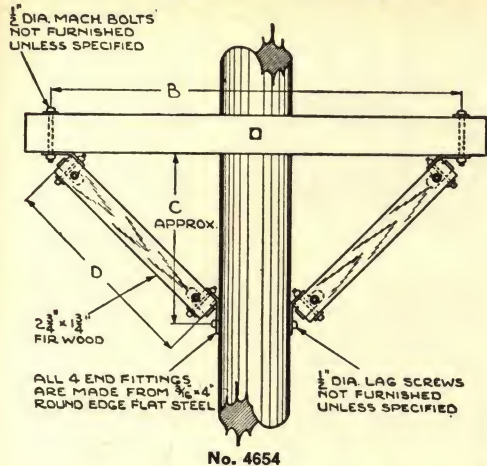
Provision is made for wood shrinkage and the loading of the wood fibers by friction and tension rather than by shear. These features are provided by the self-tightening grip and inner friction plates which will develop the full strength of the wood over a period of many years.

Furnished with arcing horns unless otherwise specified. The number 6 or 9 after the No. indicates length of clear wood.

No.	Ultimate Strength Pounds	Length Overall Inches	Shipping Weight per 100 Pounds	No.	Ultimate Strength Pounds	Length Overall Inches	Shipping Weight per 100 Pounds
30594-6	7000	93	4700	29647-6	24000	93	5300
79750-6	7000	93	5500	79752-6	24000	93	6100
30594-9	7000	129	5050	29647-9	24000	129	5767
79750-9	7000	129	6455	79752-9	24000	129	7370
30478-6	12000	93	5000	30783-6	36000	93	6900
79751-6	12000	93	5800	79753-6	36000	93	8500
30478-9	12000	129	5350	30783-9	36000	129	7367
79751-9	12000	129	6755	79753-9	36000	129	9770



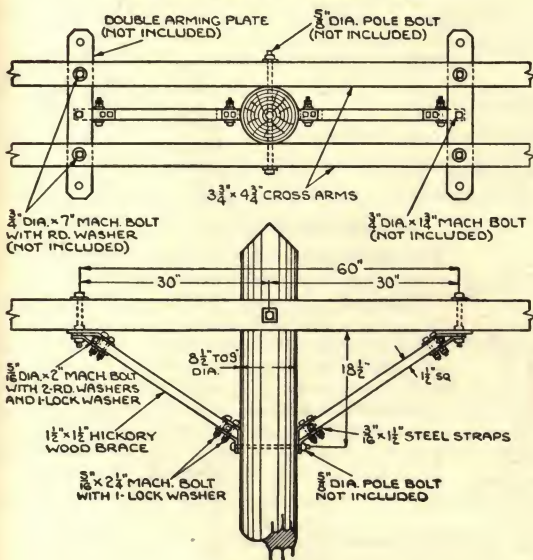
### Hubbard Side Attachment Wood Braces For Single Arm Mounting



No. 4654

No.	Per 100	DIMENSIONS, INCHES				Mtg. HOLES, IN.		Approx. Ship. Wt. Lb. per 100
		Overall Spread	B	C	D	Pole	Arm	
4654	\$209.48	50	48	20	24 1/4	9/16	9/16	1200
4656	234.21	62	60	26	32 1/2	9/16	9/16	1300

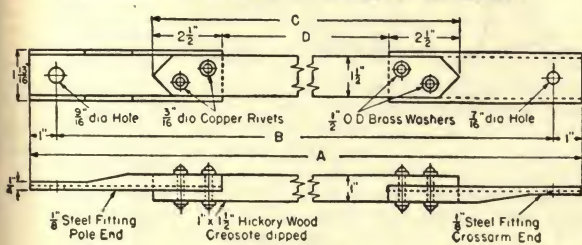
### For Double Arm Mounting



No. 4662

No.	Per 100	DIMENSIONS, INCHES				Arm Mtg. Hole		Approx. Ship. Wt. Lb. per 100
		Spread	Drop	Pole Mtg. Hole	Arm Mtg. Hole	Pole	Arm	
4662	\$200.00	60	18 1/2	1 1/16	1 1/16			943

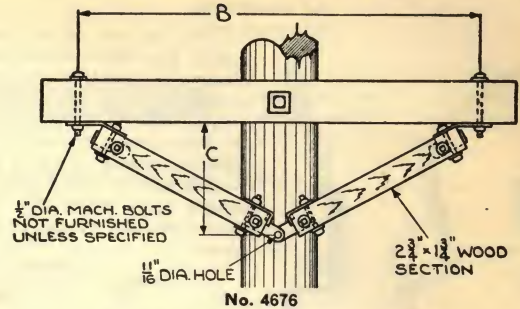
### Hubbard Wood Crossarm Braces



No. 8128-W

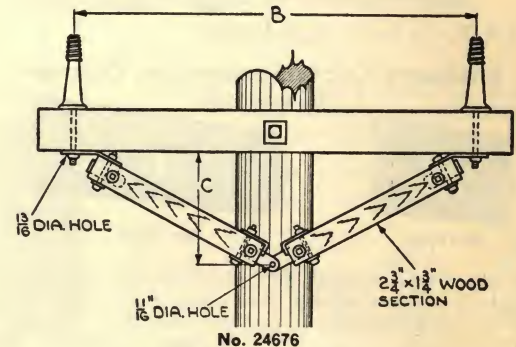
No.	Per 100	DIMENSIONS, INCHES				Approx. Ship. Wt. Lb. per 100
		A	B	C	D	
8128-W	\$90.00	28	26	19	14	415

### Hubbard Braces



No. 4676

### Hubbard 2-Piece Wood Crossarm Braces



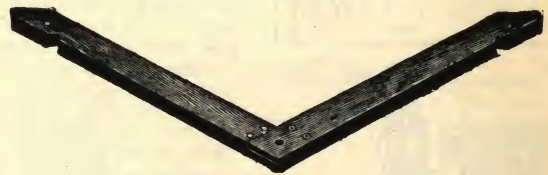
No. 24676

### Hubbard Pin Type Wood Braces

No.	2-Piece Overall Spread In.	Arm Mtg. Hole In.	No.	Pin Type Wood Section In.	Arm Mtg. Hole In.	Per 100	DIMEN., IN.		Pole Mtg. Hole In.	Approx. Ship. Wt. Lb. per 100
							B	C		
4676	43 3/4	9/16	24676	20 1/2	13/16	\$201.68	42	12	1 1/16	1100
4677	43 3/4	9/16	24677	26 3/8	13/16	209.61	42	21	1 1/16	1200
4678	49 3/4	9/16	24678	26 1/2	13/16	209.61	48	18	1 1/16	1200
4679	49 3/4	9/16	24679	30 1/2	13/16	217.68	48	24	1 1/16	1300
4680	61 3/4	9/16	24680	31 1/2	13/16	217.68	60	18	1 1/16	1300
4681	61 3/4	9/16	24681	39	13/16	251.27	60	30	1 1/16	1500
4682	63 3/4	9/16	24682	35 1/2	13/16	235.27	62	23 5/8	1 1/16	1400
4683	73 3/4	9/16	24683	38 5/8	13/16	251.27	72	22	1 1/16	1500
4684	73 3/4	9/16	24684	47 1/2	13/16	261.85	72	36	1 1/16	1700
4685	85 3/4	9/16	24685	44 3/4	13/16	256.03	84	24	1 1/16	1650
4686	87 3/4	9/16	24686	51 1/4	13/16	276.40	86	33 5/8	1 1/16	1800

### Rainier Crossarm Braces

Made Entirely of Wood



Provides the advantages of all-wood construction without reducing strength or life of pole structure or increasing its cost. Adequately survives shock and abuse.

The right and left-hand members are identical and interchangeable, any two pieces make a pair.

Only three bolts are required to install a pair.

Interchangeable with double span steel braces.

No.	Size Inches	Span Inches	Drop Inches	Wt., Lb. per Pair
RB4212-5	1 3/4 x 2 3/4	42	12 1/2	7
RB4814-5	1 3/4 x 2 3/4	48	14 1/2	7 1/2
RB4818	1 3/4 x 2 3/4	48	18	7 1/2
RB4824	1 3/4 x 2 3/4	48	24	8 1/2
RB6018	1 3/4 x 2 3/4	60	18	9 1/2
RB6030	1 3/4 x 2 3/4	60	30	10
RB7221-5	1 3/4 x 2 3/4	72	21 1/2	10 1/2
RB7236	1 3/4 x 2 3/4	72	36	12 1/2

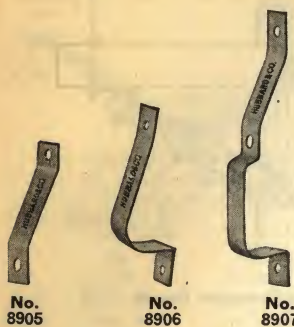


## Hubbard Reinforcing and Safety Straps

Hot Galvanized

Used as an added safeguard for cable suspension clamps at points of extreme stress.

No. 8905 is employed to reinforce messenger bolt. No. 8906 is a safety strap to prevent cable from falling if messenger gives way. No. 8907 combines two items in one piece.



No. 8905

No. 8906

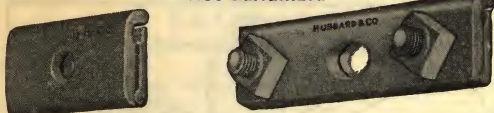
No. 8907

No.	Per 100	Size Steel In.	Ship. Wt. Lb. per 100
*8905	\$39.07	1 1/2 x 1/8	32
*8906	58.67	1 3/4 x 1/8	64
*8907	99.60	1 3/4 x 1/8	100

\*A.T. &amp; T. Co. Std. †A.R.A. Std.

## Hubbard Cable Suspension Clamps

Hot Galvanized



No. 8901

No. 8903

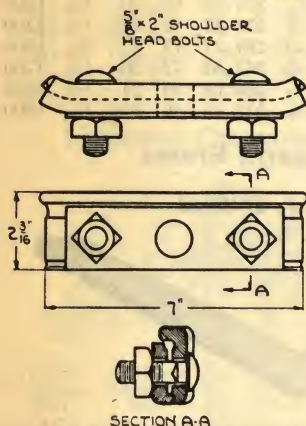
For use over a through bolt which is also employed as a clamp bolt. One or more nuts or washers are generally used between clamp and pole to provide clearance.

No.	†*8901	††*8903	8904
Per 100	\$29.54	77.41	77.41
Type	1-Bolt	3-Bolt	3-Bolt
Overall Length	2 3/8 in.	5 3/8 in.	5 3/8 in.
Mounting Hole Diam.	1 1/16 in.	1 1/16 x 1 1/16 in.	1 1/16 in.
Strand Size	1/4 to 1/16 in.	1/4 to 1/16 in.	1/4 to 1/16 in.
Shipping Weight per 100	84 lb.	224 lb.	224 lb.

\*A.T. &amp; T. Co. Std. †A.R.A. Std. ††Western Union Std.

## No. 8902 Corner Cable Suspension Clamps

Hot Galvanized



SECTION A-A

For power or communication cable messengers. Used for heavy strains at corners where the included angle of the messenger is approximately 110° or over up to 180°.

It is used with the curved ends pointing toward the pole when the pull is toward the pole and with the curved ends away from the pole when the pull is away.

Used on 6000 and 10000-pound strand with the cable groove of the clamp below the pole bolt and on 16000-pound strand with the groove above the pole bolt. A reinforcing strap is

recommended when 16000-pound strand is used. Clamp is drop forged from high carbon steel.

Three-bolt type. Overall length, 7 inches. Mounting hole diameter, 1 1/2 inches. Strand size, 1/4 to 1/16 inch inclusive.

Shipping weight per 100 375 pounds.

No. 8902..... per 100 \$155.00

## No. 8930 Hubbard Crossover Clamps

Hot Galvanized

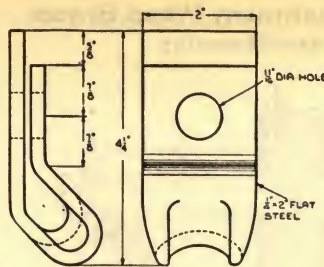


Used for clamping messengers together when they cross at right angles.

Size of strand, 5/16 to 1/2 inch. Size of sides, 3 1/4 x 1 1/2 x 1 1/2 inches.

Bolts furnished are 1/2-inch oval shoulder, clamp bolts.

No. 8930, Ship. Wt. 170 Pounds..... per 100 \$134.49



No. 6006

No.	6004	6005	6006
Per 100	\$26.32	46.25	46.25
Material	1/4 x 1 1/2 inches	1/4 x 2 inches	1/4 x 2 inches
Diameter of Hole	1 1/16 inches	1 3/16 inches	1 1/16 inches
Ship. Wt. per 100	86 pounds	110 pounds	110 pounds

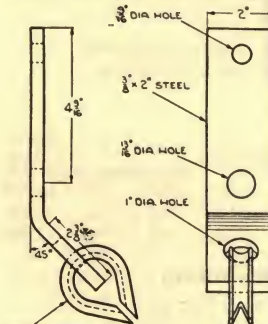
## Hubbard Storm Guy Straps

Single Bolt Type

Hot Galvanized

Nos. 6005 and 6006 are similar with the one exception of the diameter of the mounting holes.

The wire groove is rounded so as to give the strand a safe bending radius.



No. 6009

No.	6007	6009
Per 100	\$46.51	53.12
Material	3/8 x 2 inches	3/8 x 2 inches
Length	5 3/16 inches	7 3/4 inches
Diameter of Hole	1 1/16 inches	9/16 & 1 1/16 inches
Ship. Wt. per 100	146 pounds	200 pounds

## Hubbard Storm Guy Straps

Flat Strap Type

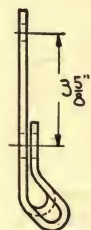
Hot Galvanized

No. 6007, for one-bolt, and No. 6009, for one-bolt and one-lag screw, are furnished with a No. 7594 guy thimble.

## Hubbard Storm Guy Straps

Combination Single Bolt and Flat Strap Type

Hot Galvanized



No. 6001

No.	6001	6002	6003	6011
Per 100	\$44.78	62.21	57.23	44.78
Material	1/4 x 1 1/2 inches	1/2 x 2 inches	1/2 x 2 inches	1/4 x 1 1/2 inches
Length	7 inches	7 1/4 inches	5 1/2 inches	7 inches
Upper Hole Diameter	9/16 inches	9/16 inches	9/16 inches	9/16 inches
Lower Hole Diameter	1 1/16 inches	1 1/16 inches	1 1/16 inches	1 1/16 inches
Ship. Wt. per 100 Pieces	117 lb.	195 lb.	100 lb.	119 lb.

Necessary to meet the needs of various operating companies, both power and communications. Generally mounted back to back. Constructed with rounded wire grooves to give the strand a safe bending radius.

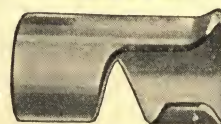
Nos. 6001, 6002 and 6011 are made of steel.

No. 6003 is made of malleable iron.

## Hubbard Servisleeves

PAT. No. 192177

Hot Galvanized



Installed by slipping sleeve over guy wire, belled end toward the clamp, and driving it over loose end of strand.

No.	7451	7452	7453	7454	7455	7456
Per 100	\$10.60	10.60	10.60	12.76	12.76	18.70
Size Strand	3/16 in.	1/4 in.	5/16 in.	3/8 in.	7/16 in.	1/2 in.
Length Overall	1 1/4 in.	1 3/8 in.	1 1/2 in.	1 3/4 in.	2 in.	2 1/4 in.
Ship. Wt. per 100	2.2 lb.	3.4 lb.	5.5 lb.	7.8 lb.	11.0 lb.	14.3 lb.

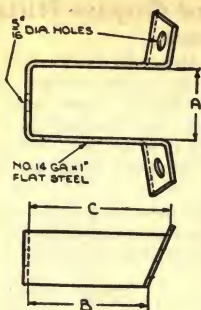
For Copperweld

No.	27452	27453
Per 100	\$10.60	10.60
Strand Size	3 No. 9	3/16-Inch
Length Overall	1 3/8 inches	1 1/2 inches
Approx. Ship. Wt. per 100	3 lb.	5 lb.

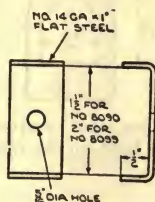


## Hubbard Clip Washers

Hot Galvanized



No. 8089



No. 8099

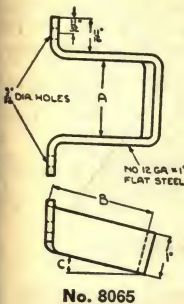
No. 8089 top clip washer and No. 8090 bottom clip washer are to be used with Graybar Standard No. 1 Wood Bracket. No. 8098 top clip washer and No. 8099 bottom clip washer are to be used with Graybar Standard No. 2 Wood Bracket.

No.	Top		Bottom	
	8089	8098	8090	8099
Per 100	\$11.86	12.59	2.71	2.74
A Dimension.....inches	1 1/2	2	...	...
B Dimension.....inches	1 1/4	2	...	...
C Dimension.....inches	1 1/4	2 1/4	...	...
Shipping Wt. per 100.....lb.	17	20	6	8

## Hubbard Bracket Straps

Hot Galvanized

Two bracket straps, top and bottom, are used on each wood bracket. A.T. & T. Standard.



No. 8065

No.	Per 100	Description	DIMENSIONS			Ship. Wt. Lb. per 100
			A In.	B In.	C In.	
8065	\$11.86	Bottom	1 1/2	1 1/2	19"	16
8066	12.87	Top	1 1/2	2 1/4	19"	25
8067	14.15	Top	1 3/4	2	15"	22
8068	11.86	Bottom	1 3/4	7/8	15"	15

## No. 8913 Hubbard Strand Connectors

Hot Galvanized

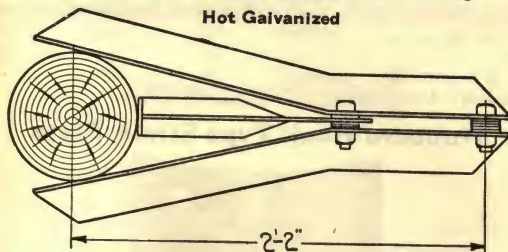
Used with guy clamps for joining messenger ends. Non-insulating.

Cable grooves and eyes are 3/4-inch diameter. Cable loops around 1 3/4-inch diameter thimble. Eye is egg-shaped to accommodate large and small strand and to facilitate threading.

No. 8913, Ship. Wt. 100 Pounds.....per 100 \$142.68

## Hubbard Cable Extension Arms

Hot Galvanized



To suspend cables at some distance from the pole. Attached at the top by one 5/8-inch through bolt. T-iron brace is fastened by lag screws. Cable attached by a short 5/8-inch machine bolt with a washer under the head.

No. 8903. Three-bolt cable suspension clamp is attached on the machine bolt under the arm in a horizontal position. Extension of the cable from the pole can be varied 8 1/2 inches with No. 8920 and 18 inches with No. 8921.

No.	*8920		*8921	
	Per 100	\$1480.91	Per 100	\$2693.42
Extension from Center of Pole.....in.	26		44 1/2	
Angle Size.....in.	3x2 1/2 x 1 1/4		3 1/2 x 2 1/2 x 3/16	
Ship. Wt. Per 100.....lb.	3050		6050	

\*A.T. & T. Co. Std.

## Hubbard Guy Shims

Hot Galvanized



Diameter of nail holes, 1/4-inch.

Six or more guy shims are used per pole to prevent messenger or guy strand from cutting into the wood.

No. ....	7570	7571
Per 100.....	\$10.74	13.16
Dimensions.....inches	1 1/2 x 1 1/2 x 8	1 1/4 x 3/4 x 8
Ship. Wt. Per 100.....pounds	57	68

## Hubbard Load or Breast Plates

Hot Galvanized



No. 887

Used as back bearing plates when either the guy loop and saddle or the straight-away loop and saddle are subject to heavy strains.

The curved plate is provided with one hole and one slot on four-inch centers.

No. ....	8877	8878
Per 100.....	\$31.75	31.75
Bolt Hole.....in.	3/4	7/8
Bolt Slot.....in.	3/4 x 1 1/4	7/8 x 1 1/2
Hole Spacing.....in.	4	4
Size Steel.....in.	7x2 1/2 x 1 1/4	7x2 1/2 x 1 1/4
Ship. Wt. per 100.....lb.	112	112

## Hubbard Flat Lift Plates

No. 8890 measures 7x2 1/2 x 1 1/4 inches and has one 3/16-inch hole, and one 1x3/16-inch oval hole.

No. 8891 measures 7x2 1/2 x 5/16 inches and has two 3/16-inch holes, one 1 1/16-inch hole, and one 1 1/2-inch hole.



No. 8890



No. 8891

No.	Per 100	Bolt Diam. In.	Size Bolt Hole In.	Plate Thickness Inches	Approx. Ship. Wt. Lb. per 100
8890	\$31.75	3/4	1 3/16 x 1	1/4 Flat	124
*8891	34.69	1	1 3/8	5/16 Flat	151

\*A.T. & T. Co. Std.

## Hubbard Curved Lift Plates

Hot Galvanized



No. 8887

These plates are used under the eye of Hubeye angle bolts to distribute the strain of down-guys over a greater area.

Dimensions, 7x2 1/2 in.

All plates curved.



No. 8897

No.	Per 100	Diameter Bolt Inches	Size Bolt Hole Inches	Thick. Plate Inches	ATTACH. No.	HOLES Diam. In.	Shipping Wt. Lb. per 100
8887	\$25.47	5/8	1 1/16 x 1 5/16	3/16	1	9/16	99
8888	31.75	3/4	1 3/16 x 1 1/16	1/4	1	9/16	128
8889	34.69	1	1 1/16 x 1 1/16	5/16	1	9/16	151
8897	25.47	5/8	1 1/16 x 1 5/16	3/16	2	9/16	95
8898	31.75	3/4	1 3/16 x 1 1/16	1/4	2	9/16	124
8899	34.69	1	1 1/16 x 1 1/16	5/16	2	9/16	148



## Hubbard Drop Forged Bolt Eyes

Hot Galvanized

Used extensively for dead-ending and guying. The standard bolt eye may be used for attaching dead-ending insulators to the cross arm. The long type is often used for supporting suspension insulators with a hook in the cap of the upper unit.

Unthreaded slot provides clearance for the insertion of bolt.



No. 7514



No. 7515

## Standard Bolt Eye

No.	Per 100	Diam. Bolt In.	Bolt Hole In.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. per 100
7514	\$58.09	5/8	1 1/16 x 1 3/16	1 1/8	12 1/2	83

## Long Bolt Eye

No.	Per 100	Diam. Bolt In.	Bolt Hole In.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. per 100
7515	\$65.05	5/8	1 1/16 x 1 3/16	1 3/8	3 3/4	117
7516	65.03	3/4	1 3/16 x 1 1/16	1 3/8	3 3/4	119
7517	58.46	5/8	1 1/16 x 1	1 5/16	2 1/2	109
7518	58.46	3/4	1 3/16 x 1 1/16	1 5/16	2 1/2	112

## Hubbard Drop Forged Straight Bolt

## Hubeyes

Hot Galvanized

Has unthreaded slot to provide clearance for the insertion of bolts. Used for cross arm guying where a circuit has been dead-ended, although it is suitable for many other guying and dead-ending needs.

Follows the standard Hubeye design. Will take strand 1/2 inch diameter and under.



No.	Per 100	Diam. Bolt In.	Bolt Hole In.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. per 100
7519	\$73.62	5/8	1 1/16 x 1	1 3/8	13 1/2	80
7520	73.75	3/4	1 3/16 x 1 1/16	1 3/8	13 1/2	80
7521	71.54	5/8	1 1/16 x 1	1 5/16	11 1/2	77
7522	82.97	3/4	1 3/16 x 1 1/16	1 5/16	11 1/2	166

## Hubbard Drop Forged Angle Bolt Hubeyes

Hot Galvanized

Used almost exclusively for down guys. Eliminates the use of strain plates, guy hooks, guy thimbles, nails and lag screws and saves from three to five feet of guy strand. Often used on the nut end of a bolt for a down guy attachment with a straight bolt eye under the head of the bolt as a dead-end.

Nos. 1100 and 1101 will take strand 1/2 inch diameter and under. Furnished with round unthreaded hole, no clearance being needed.



No.	Per 100	Diam. Bolt In.	Bolt Hole In.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. per 100
1100	\$55.10	5/8	1 1/16 x 1	1 3/8	13 1/2	80
1101	55.30	3/4	1 3/16 x 1 1/16	1 3/8	13 1/2	80
7523	42.88	5/8	1 1/16 x 1	1 5/16	11 1/2	77
7524	42.69	3/4	1 3/16 x 1 1/16	1 5/16	11 1/2	166
7525	49.43	5/8	1 1/16 x 1	1 3/8	13 1/2	80
7526	49.43	3/4	1 3/16 x 1 1/16	1 3/8	13 1/2	80

## Hubbard Drop Forged Standard Eye Nuts

Hot Galvanized

This eye nut requires the use of a thimble. Used on through bolts, eye bolts, double arming bolts, etc. and for other attachments where it is desired to convert a standard, threaded bolt to an eye bolt.

Commonly used for dead-ending a messenger wire or span guy on the threaded end of an angle hubeye bolt on the opposite end of which is attached a down guy.



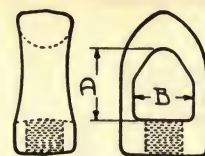
No.	Per 100	Diam. Bolt In.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. per 100
7500	\$42.88	1/2	1 1/8	1 1/8	55
7501	42.88	5/8	1 1/8	1 1/8	55
*7502	42.69	5/8	1 1/2	1 1/8	65
7503	49.43	3/4	1 1/2	1 1/8	65
7504	49.43	3/8	1 1/8	1 1/8	36
7505	49.43	1/2	1 1/8	1 1/8	34
7506	49.43	5/8	1 1/8	1 1/8	32

\*Western Union Std.

## Hubbard Drop Forged Guyeye Nuts

Hot Galvanized

Used on through bolts, eye bolts, double arming bolts, straight and angle Hubeye bolts, cross arm bolts, anchor rods and for other attachments where it is desired to convert a standard, threaded bolt to an eye bolt.



Commonly used for dead ending a messenger wire or span guy on the threaded end of an angle Hubeye bolt on the opposite end of which is attached a down guy.

No.	Per 100	Diam. Bolt In.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. per 100
*7660	\$64.62	5/8	1 1/8	1 1/8	82.97
*7661	73.23	3/4	1 1/8	1 1/8	82.97
*7662	82.97	1 1/8	1 1/8	1 1/8	82.97

\*A. T. &amp; T. Co. Std.

## Hubbard Drop Forged Hubeye Nuts

Hot Galvanized

Used on through bolts, eye bolts, double arming bolts, straight and angle hubeye bolts, cross arm bolts, anchor rods and for other attachments where it is desired to convert a standard, threaded bolt to a hubeye bolt.

Commonly used for dead ending a messenger wire or span guy on the threaded end of an angle hubeye bolt on the opposite end of which is attached a down guy.



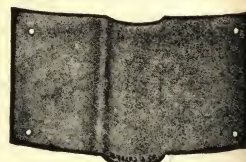
No.	Per 100	Diam. Bolt In.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. per 100
7509	\$63.14	1/2	1 1/8	1 1/8	80
7510	63.14	5/8	1 1/8	1 1/8	80
7511	71.54	3/4	1 1/8	1 1/8	77
7512	82.97	1	1 1/4	1 1/8	166

## Hubbard Strain Plates

Hot Galvanized



No. 7575



No. 7576

Used to protect the pole fibres from being cut by messenger or guy strand.

Furnished standard, with offset to fit 1 1/4-inch maximum diameter ground wire moulding.

Diameter nail holes, 1/2 inch.

No.	Per 100	Type	Dimensions	Gage	Ship. Wt. per 100
*7575	\$21.85	Standard	4x8	14	95
7576	22.59	Moulding	4x8	14	95
7579	25.90	Standard	4x6	14	75

\*Western Union Std. †A. R. A. Std.

## Hubbard Hook Type Strain Plate



No. 7580

Used to protect the pole fibers from being cut by messenger or guy strand.

No. 7577 has a welded hook, one 1/16-inch guy hook and hole, and two 1/16-inch lag screw holes.

No.	Per 100	Type	Dimensions	Gage	Ship. Wt. per 100
7577	\$72.19	Heavy Guy Hook	4x8	14	134
7580	54.20	Heavy Guy Hook	4x6	14	114



## Hubbard Guy Hooks

Hot Galvanized



No. 7584



No. 7585



No. 7586

Necessary to meet the needs of various operating companies, both power and communication.

Constructed with rounded wire grooves to give the strand a safe bending radius. Made of steel.

No.	7583½	†*7584	7585	7586
Per 100	\$12.38	26.90	19.16	26.90
Description	Light	Med.	Hvy.	Hvy.
Material	¼x1¼	¾x1¼	¾x1½	¾x1½
Length	3¼	4	3½	6
Upper Hole Diam.	in.	in.	in.	in.
Lower Hole Diam.	in.	in.	in.	in.
Ship. Wt. per 100	lb.	40	89	65
				91

\*A. T. & T. Co. Std. †Western Union Std. ‡A. R. A. Std.

## Peirce Detachable Pole Steps

Hot Galvanized



To install this pole step, slip the plate, which acts as a bearing surface for step, over lag screw and drive lag in until plate bites into pole. Step

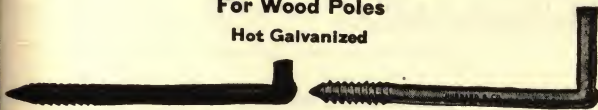
slips down in a groove on each side of lag screw head and is prevented from turning by a lug projecting from bottom of plate. A nail driven through a hole in plate offers additional security against turning. Five steps per pole are generally used. Unlicensed climbing is prevented by removing steps.

No.	Per 100	Description	Lag Screw Inches	Extension from Pole Inches	Approx. Shipping Wt. Lb. per 100
7235	\$39.82	Lag and Plate...	¾x4	...	93
7236	65.39	Step.....	...	5½	50

## Hubbard Pole Steps

For Wood Poles

Hot Galvanized



No. 7125

No. 7126

No. 7129

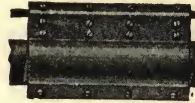
Made of open hearth steel and can be bent to an angle of 75° around its own diameter without fracture. Hook head step has drive head and fether drive threads. Button head step has twist drive threads and a square shoulder.

No.	Per 100	Type Head	Diameter Inches	Length Overall Inches	Shipping Wt. Lb. per 100
7123	\$22.32	Standard Hook..	¾	9	70
7124	24.63	Standard Hook..	¾	9	88
†*7125	26.19	Standard Hook..	¾	10	94
*7126	37.80	Long Hook.....	¾	10	116
7182	32.04	Button.....	¾	9½	84
†7129	32.04	Button.....	¾	9¼	105
7130	43.50	Button.....	¾	10	110

\*A. T. & T. Co. Std. †Western Union Std. ‡E. E. I. Std. §A. R. A. Std.

## Hubbard Grade Clamps

Hot Galvanized



No. 8985



No. 8989

Used to prevent creepage where cables are run on grades. Presteel type is made with a large clamping area so that the soft cable may be firmly gripped but not crushed. It is tightened by means of the ¾x1-inch stove bolts furnished.

Drop-forged clamp is equipped with four ½-inch, oval neck clamp bolts, which cannot turn while nuts are being tightened.

Tolerances are held very close in order to grip both cable and messenger with the proper pressure when tightened in place.

## Pressed Steel—Stove Bolt Type

No.	Per 100	For Messenger Size Inches	For Cable Size Inches	Size Clamp Inches	Shipping Wt. Lb. per 100
8984	\$910.79	¾ to ¾	2½	7½x12	836
8985	910.79	¾ to ¾	3½	7½x12	850

## †Drop Forged—4-Bolt Type

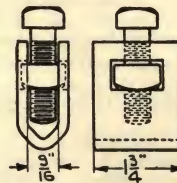
8986	\$282.57	5/16 to 1/2	1 3/8	5 1/4 x 4	495
8987	317.10	5/16 to 1/2	2 1/16	6 1/4 x 4	594
8988	331.54	5/16 to 1/2	2 1/2	7 x 4	659
8989	344.43	5/16 to 1/2	2 7/8	7 3/8 x 4	704
8999	548.85	5/16 to 1/2	3 3/8	7 7/8 x 5	781

## †Malleable Iron—4-Bolt Type

8982	\$225.16	5/16 to 1/2	1	4 3/4 x 4	495
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## †No. 8956 Hubbard Strand Ground Clamps

Hot Galvanized



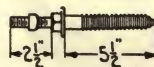
This clamp is used to provide a permanent electrical ground between cable sheath and messenger. Connection is soldered to the cable sheath and mechanically clamped to the messenger wire. Bolt can be completely removed so that clamp may be dropped over the messenger.

Size steel, ¾x1¼ inches. Overall length, 2½ inches. Bolt size, ½x1¼ inches.

No. 8956, Ship. Wt. 57 Pounds.....per 100 \$23.50

## †No. 8966 Hubbard Cable Suspension Screws

Hot Galvanized



Used in place of a standard through bolt or double arming bolt. Suspension clamps are mounted over the 5/8-inch stud.

Overall length, 8¾ inches. Length lag end under shoulder, 5½ inches; machine screw end above shoulder, 2½ inches.

No. 8966, Ship. Wt. 131 Pounds.....per 100 .....

## †Hubbard Reinforcing Links

Hot Galvanized



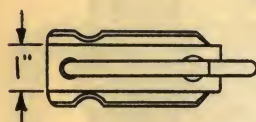
Used to relieve side strains at angles in the line. Will stand strains of 4000 pounds.

No.	8919	*†8929
Per 100	\$69.93	85.66
Overall Length	in.	5¾
Steel Size	in.	1½
Mounting Hole Diam.	in.	¾
Ship. Wt. per 100	lb.	107
		125

†A.T.&T. Co. Std. \*Western Union Std. ‡A.R.A. Std.



## Hubbard Span Clamps

Hot Galvanized  
No. 8917

This clamp is used for taking off telephone service connections between spans in connection with wire clamps which attach through the wire attachment loop.

Strand size,  $\frac{1}{4}$  to  $\frac{3}{8}$  inch. Steel size, No. 11 gage.

Length of cable groove to wire attachment loop,  $3\frac{1}{4}$  inches.

No. 8917, Ship. Wt. 144

Pounds.....per 100 \$42.26

## No. 8918



Used for the same purpose as No. 8917. Consists of a clamp and spacer with holes for two knobs.

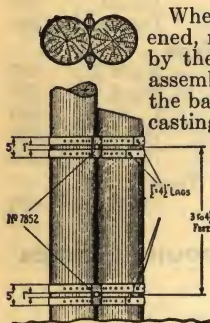
Strand size,  $\frac{1}{4}$  to  $\frac{7}{16}$  inch.

Steel size,  $\frac{1}{8}$  inch. Insulator spacing,  $5\frac{1}{4}$  inches.

No. 8918, Ship. Wt. 152 Pounds.....per 100 \$133.29

## Type A Hubbard Pole Reinforcing Material

Hot Galvanized



When pole butts become rotted and weakened, reinforcing or stubbing is accomplished by the application of bands. Band and pipe assemblies are tightened in place by drawing the band together. No. 7852-A is a malleable casting which serves the same purpose as the pipe.

Band is attached first by a nail through the small hole in end. After wrapping pole and stub tightly by hand, a  $\frac{1}{2}$ -inch lag screw is driven through loose end so that it engages both inside and outside wrap. Lag screws may be driven in either of end holes which are spaced farther apart than others.

This allows lining up with nearest inside hole. Four bands and four pipes are needed for a set.

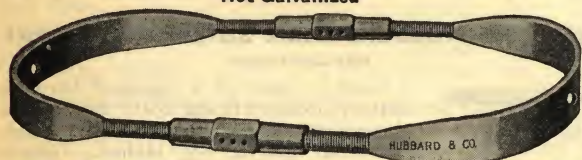
Lag screws and take-up bolts should be ordered separately.

No.	Per 100	Description	Size	Ship. Wt. Lb. per 100
†7850	\$107.30	Reinforcing Band...	12-Ga. x 2" x 68 $\frac{1}{2}$ "	451
†7851	132.13	Reinforcing Band...	12-Ga. x 2" x 89 $\frac{1}{2}$ "	577
†7852	124.05	Reinforcing Pipe...	Ex. Hvy. 2" x 5"	242
7852-A	124.05	Reinforcing Casting	5 $\frac{1}{16}$ " Long, 1 $\frac{1}{4}$ " Rad.	150
†7855	163.04	Reinforcing Band...	12-Ga. x 2" x 99"	858
†7856	197.06	Reinforcing Band...	12-Ga. x 2" x 120"	1100

†A. T. & T. Co. Std.

## Hubbard Sleeve Nut Reinforcing Bands

Hot Galvanized



Tension is provided on the sleeve nut band by the turn-buckle nut. In general, poles are stubbed across the line. If they must be stubbed on the line, dowels are used.

Peep-holes are provided in the nut for gauging take-up.

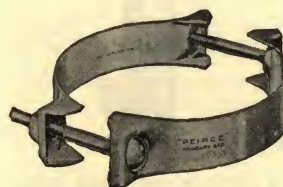
Order two bands for a set.

No.	Per 100	Pole and Stub Diameter Inches	Length Sleeve Nut Inches	Shipping Weight Pounds per 100
7750	\$345.19	8	4 $\frac{1}{2}$	367
7751	367.19	10	6	550
7752	389.21	12	6	625
7753	412.89	14	6	700
7754	433.48	16	6	780
7755	488.78	18	8	950
7756	510.66	20	8	1020
7757	532.93	22	8	1100

## Peirce Adjustable Pole Bands

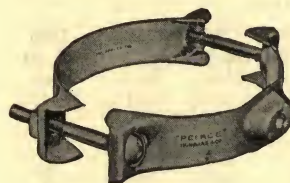
Hot Galvanized

For attaching racks, pole steps, crossarms, etc. to wood, steel, or concrete poles.



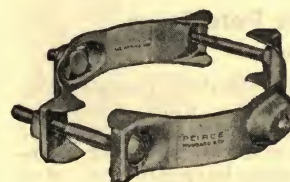
## Plain

No.	Less Bolts per 100	Outside Pole Diam. Adjustable Range, In.	Ship. Wt. Lb. per 100
8333	\$96.87	3 $\frac{1}{2}$ -4	153
8334	106.99	4-4 $\frac{1}{2}$	165
8335	111.80	4 $\frac{1}{2}$ -5 $\frac{1}{2}$	176
8336	121.67	5 $\frac{1}{2}$ -7	199
8338	129.39	7-9	234
8340	151.40	9-11 $\frac{1}{2}$	281
8342	176.70	11 $\frac{1}{2}$ -14 $\frac{1}{2}$	338



## Single Cup

No.	Less Bolts per 100	Outside Pole Diam. Adjustable Range, In.	Ship. Wt. Lb. per 100
8353	\$102.05	3 $\frac{1}{2}$ -4	158
8354	111.80	4-4 $\frac{1}{2}$	169
8355	116.87	4 $\frac{1}{2}$ -5 $\frac{1}{2}$	180
8356	129.14	5 $\frac{1}{2}$ -7	203
8358	137.12	7-9	238
8360	156.70	9-11 $\frac{1}{2}$	284
8362	185.94	11 $\frac{1}{2}$ -14 $\frac{1}{2}$	342



## Double Cup

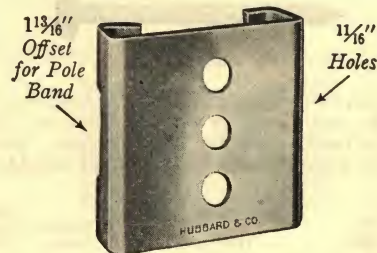
No.	Less Bolts per 100	Outside Pole Diam. Adjustable Range, In.	Ship. Wt. Lb. per 100
8373	\$107.25	3 $\frac{1}{2}$ -4	162
8374	116.99	4-4 $\frac{1}{2}$	173
8375	121.42	4 $\frac{1}{2}$ -5 $\frac{1}{2}$	184
8376	136.45	5 $\frac{1}{2}$ -7	207
8378	144.05	7-9	242
8380	161.14	9-11 $\frac{1}{2}$	289
8382	191.10	11 $\frac{1}{2}$ -14 $\frac{1}{2}$	346

Table for Determining Size of Band to Fit Specified Outside Pole Diameters

Outside Pole Diameter Inches	BAND NOS.		
	Plain	Single Cup	Double Cup
3 $\frac{1}{2}$ , 3 $\frac{3}{4}$ , 4	8333	8353	8373
4, 4 $\frac{1}{4}$ , 4 $\frac{1}{2}$	8334	8354	8374
4 $\frac{1}{2}$ , 4 $\frac{3}{4}$ , 5, 5 $\frac{1}{4}$ , 5 $\frac{1}{2}$	8335	8355	8375
5 $\frac{1}{2}$ , 5 $\frac{3}{4}$ , 6, 6 $\frac{1}{4}$ , 6 $\frac{1}{2}$ , 6 $\frac{3}{4}$ , 7	8336	8356	8376
7, 7 $\frac{1}{4}$ , 7 $\frac{1}{2}$ , 7 $\frac{3}{4}$ , 8, 8 $\frac{1}{4}$ , 8 $\frac{1}{2}$ , 8 $\frac{3}{4}$ , 9	8338	8358	8378
9, 9 $\frac{1}{4}$ , 9 $\frac{1}{2}$ , 9 $\frac{3}{4}$ , 10, 10 $\frac{1}{4}$ , 10 $\frac{1}{2}$ , 10 $\frac{3}{4}$ , 11, 11 $\frac{1}{4}$ , 11 $\frac{1}{2}$	8340	8360	8380
11 $\frac{1}{2}$ , 11 $\frac{3}{4}$ , 12, 12 $\frac{1}{4}$ , 12 $\frac{1}{2}$ , 12 $\frac{3}{4}$ , 13, 13 $\frac{1}{4}$ , 13 $\frac{1}{2}$ , 13 $\frac{3}{4}$ , 14, 14 $\frac{1}{4}$ , 14 $\frac{1}{2}$	8342	8362	8382

## Peirce Adjustable Pole Band Accessories

Hot Galvanized



## No. 5097

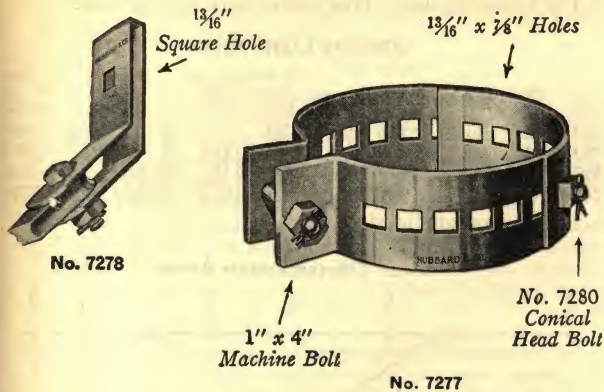
Used on wood, steel, and concrete poles.

No.	Per 100	Pole Gain Diam., In.	For Arm Size	Hole Size In.	Wt. Lb. per 100
5096	\$105.86	4 to 6 $\frac{1}{2}$	All Arms	1 $\frac{1}{16}$	150
5097	105.86	7 and Up	All Arms	1 $\frac{1}{16}$	150
5098	105.86	7 and Up	All Arms	1 $\frac{1}{16}$	150



## Hubbard Full Adjustable Pole Bands

Hot Galvanized



Designed so that deadends and guys may be attached at many different angles. One to eight or more attachments may be made from one band.

Accommodates poles 6 to 14 inches in diameter.

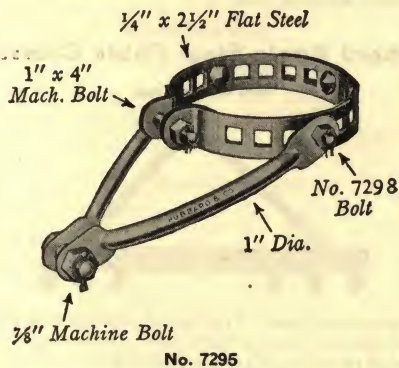
Shipped assembled with one 1x4-inch curved bolt and one  $\frac{3}{4}$ x $1\frac{3}{4}$ -inch cone head bolt. The point of the cone head bolt sinks into the pole and keeps the band from slipping or rotating. Extra cone head bolts for attaching dead-end clevises and clips must be ordered separately.

Bolts have square shoulders so they will not rotate in the rectangular slots.

No. 7278 guy clip attaches around the band by means of No. 7280 conical head bolt and has an oval thimble which will not rotate in the clip. Guy clip is furnished in two pieces, the top part of  $\frac{5}{16}$ x $2\frac{1}{2}$ -inch steel and the bottom of  $\frac{3}{16}$ x $2\frac{1}{2}$ -inch steel. The clevis bolt is a  $\frac{3}{4}$ x $2\frac{1}{2}$ -inch cotter.

No.	Per 100	Description	Pole Diam. In.	Steel Size In.	Approx. Ship. Wt. Lb. per 100
7276	\$528.29	Pole Band	6 to 10	$\frac{3}{16}$ x4	950
7277	\$551.96	Pole Band	8 to 14	$\frac{3}{16}$ x4	1170
7278	\$233.20	Guy Clip	.....	.....	306
7280	\$23.54	Cone Head Bolt	.....	$\frac{3}{4}$ x $1\frac{3}{4}$	50

## No. 7295 Hubbard Medium Strain Insulator Attachments



Has an adjustment range to fit poles from 8 to 14-inch diameter.

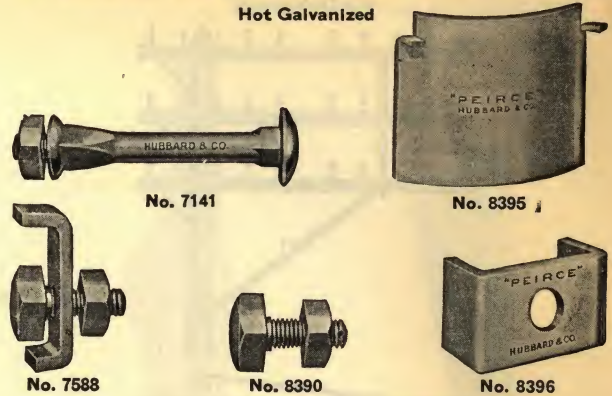
Steel size,  $\frac{1}{4}$ x $2\frac{1}{2}$  inches.

Approximate shipping weight per 100, 1800 pounds.

No. 7295..... per 100 \$264.10

## Peirce Adjustable Pole Band Accessories

Hot Galvanized



No. 7141 is a standard button head pole step with a short shank for use with bands. Has  $\frac{3}{4}$ x $\frac{5}{8}$ -inch diameter thread.

No. 7588 is a clip for guy attachments, used to clip the strand to the pole above the cup of the band.

No. 8390 is a special bolt consisting of a  $\frac{1}{2}$ -inch shank with a standard  $\frac{5}{8}$ -inch bolt head so that it will be properly trapped in the pole band cup.

No. 8395 is a plate used under the ends of adjustable pole bands when assembled on fluted steel poles.

No. 8396 is an adapter for mounting secondary racks over the cups of pole bands. Has  $1\frac{1}{4}$ -inch extension.

No.	Per 100	Description	Size In.	Hole Size In.	Approx. Ship. Wt. Lb. per 100
7141	\$79.21	Pole Step.....	$\frac{5}{8}$ Shank	.....	103
7588	*48.19	Guy Clip, $\frac{1}{2}$ -In. Max.	$1\frac{1}{4}$ x $1\frac{1}{2}$	$\frac{9}{16}$	62
8390	\$35.52	Bolt, $\frac{1}{2}$ -In. Fittings..	$1\frac{1}{2}$ x $1\frac{1}{2}$	.....	32
8395	\$40.97	Plate, Fluted Pole...	$4\frac{1}{4}$ x $2\frac{5}{8}$ x $\frac{7}{16}$	.....	41
8396	\$24.51	Rack Saddle.....	$2\frac{3}{4}$ x $1\frac{1}{2}$ x $\frac{3}{16}$	$\frac{1}{16}$	40

\*Price includes No. 8390 bolt.

## Peirce Pole Gains and Reinforcing Plates

Hot Galvanized

Used to form a highly efficient method of attaching and reinforcing a crossarm.

## Presteel Pole Gains

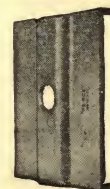
Used for attaching crossarms to poles efficiently and quickly without the need for gaining the pole.

Permits easy adjustment for alignment of the crossarm and spaces the arm away from the pole allowing ample drainage and ventilation.

Compared with gaining a pole for double arming, an added spacing of approximately 2 inches between arms is obtained by using metal gains. The four spurs on the gain insure permanence of the original alignment.



No.	Per 100	Arm Size Inches	Bearing Surface on Crossarm Inches	Steel Gage No.	Ship. Wt. Lb. per 100
5091	\$118.62	$3\frac{1}{4}$ x $4\frac{1}{4}$	$4\frac{1}{4}$ x6	9	288
5092	\$118.62	$4\frac{1}{2}$ x $4\frac{1}{2}$	$4\frac{1}{2}$ x6	9	288
5093	\$118.62	$3\frac{3}{4}$ x $4\frac{3}{4}$	$4\frac{3}{4}$ x6	9	288
5094	\$118.62	4 x5	5 x6	9	288



## Crossarm Reinforcing Plates

Designed to give greater effectiveness than the square washer.

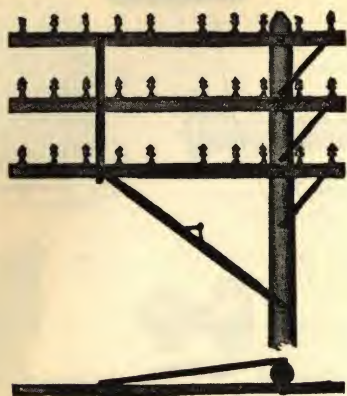
Prevents checking and splitting of the crossarm at the point of attachment.

No.	Per 100	Arm Size Inches	Bearing Surface on Crossarm Inches	Steel Gage No.	Ship. Wt. Lb. per 100
5042	\$49.45	$3\frac{1}{4}$ x $4\frac{1}{4}$	$4\frac{1}{4}$ x $3\frac{3}{8}$	7	120
5043	\$49.45	$3\frac{1}{2}$ x $4\frac{1}{2}$	$4\frac{1}{2}$ x $3\frac{3}{8}$	7	128
5044	\$50.17	$3\frac{3}{4}$ x $4\frac{3}{4}$	$4\frac{3}{4}$ x $3\frac{3}{8}$	7	136
5045	\$61.54	4 x5	5 x $3\frac{3}{8}$	7	144
5046	\$69.31	$3\frac{3}{4}$ x $5\frac{3}{4}$	$5\frac{3}{4}$ x $3\frac{3}{8}$	7	160
5047	\$73.52	6 x8	8 x $3\frac{3}{8}$	7	206



## Hubbard Extension Fixtures

Hot Galvanized



Diagonal Brace, Back Brace, and Vertical Brace Installed

When it is necessary to clear buildings or trees without the use of high poles, these fixtures are used. Also used to offset arms on a pole where such construction will partially relieve the strain of a slight angle in the line. This method of offsetting is also useful where lines follow country roads with many slight bends in both directions. With extension fixtures the poles may be set at the roadside, and by extending arms either toward road or away from road, to compensate for conditions, the wires may be strung in a straight line. A. T. & T. Co. Standard.

## †No. 8050 Diagonal Braces

For use on both 6 and 10-pin arms. Provided with a 6-inch step for lineman and may be used on either side of pole. Fastened to side of pole by a  $\frac{1}{2}$ -inch lag screw and to cross arm by a  $\frac{1}{2}$ -inch machine bolt.

Made of  $2 \times 2 \times \frac{3}{16}$ -inch angle steel. Bolts not included.

Length overall, 83 inches.

No. 8050, Ship. Wt. 1892 Pounds.....per 100 \$488.00  
†A. T. & T. Co. Std.

## †Back Braces

This brace is attached to pole by a  $\frac{5}{8}$ -inch through bolt and to cross arm by a  $\frac{1}{2}$ -inch machine or carriage bolt.

Made of  $2 \times 2 \times \frac{1}{4}$ -inch angle steel. Bolts not included.

No.....	8051	8052
Per 100.....	\$325.89	397.94
For Use with Arms.....	6-Pin	10-Pin
Length Over All.....inches	54 $\frac{1}{2}$	66 $\frac{1}{16}$
Approx. Ship. Wt. per 100 Pcs.....lb.	1364	1892

†A. T. & T. Co. Std.

## No. 8054 Vertical Braces—Communication Type

Designed for three arms spaced 12 inches apart, or two arms on 24-inch centers, additional arms being cared for by placing other Vertical Braces in Series with the first.

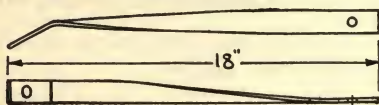
Made of  $1\frac{3}{4} \times 1\frac{3}{4} \times \frac{1}{4}$ -in. angle and provided with holes for  $\frac{1}{2}$ -in. bolts. Bolts are not included. Length over all, 30 $\frac{5}{8}$  in.

No. 8054, Ship. Wt. 792 Pounds.....per 100 \$175.87

†A. T. & T. Co. Std.

## No. 9240 Hubbard Guard Arm Braces

Hot Galvanized



This guard arm brace is used for supporting guard arms at points on poles where a cable is suspended.

Steel size,  $18 \times 1\frac{1}{2} \times \frac{1}{4}$  inches. Diameter hole straight end,  $\frac{1}{16}$  inch. Diameter hole bent end,  $\frac{3}{16}$  inch.

No. 9240, Ship. Wt. 170 Pounds.....per 100 \$49.94

†A. T. & T. Co. Std.

## Hubbard Angle Steel Crossarms

Hot Galvanized

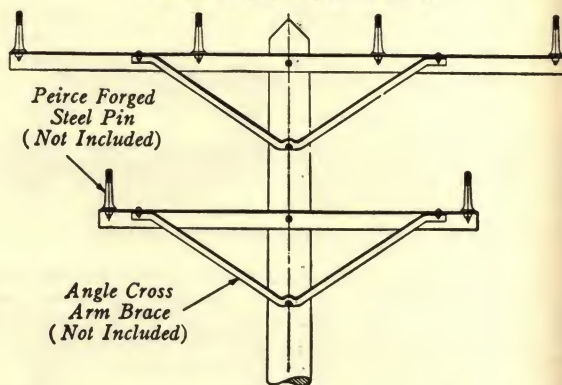
Pin holes,  $\frac{13}{16}$  inch. Pole mounting hole,  $\frac{11}{16}$  inch.

## \*Electric Light Arms

No.	No. Pins	Lgth. In.	BRACE		PIN SPACING, IN.		Size Angle In.	Ship. Wt. Lb. per 100
			No.	Style	Pole Pins	Side Pins		
7612	2	36	8120	Flat	30	....	3 x3 x $\frac{1}{4}$	1625
7614	4	65	8126	Flat	30	14 $\frac{1}{2}$	3 x3 x $\frac{1}{4}$	2915
7616	6	94	7940	Angle	30	14 $\frac{1}{2}$	3 $\frac{1}{2}$ x3 $\frac{1}{2}$ x $\frac{3}{16}$	6215
7620	8	117 $\frac{3}{4}$	7941	Angle	30	13 $\frac{3}{8}$	3 $\frac{1}{2}$ x3 $\frac{1}{2}$ x $\frac{3}{16}$	7770

Prices upon application.

## Power Transmission Arms



7622	2	28	8120	Flat	24	..	3 x3 x $\frac{1}{4}$	1290
7632	2	40	8120	Flat	36	..	3 x3 x $\frac{1}{4}$	1840
7642	2	52	8120	Flat	48	..	3 x3 x $\frac{1}{4}$	2410
7624	4	76	7950	Angle	24	24	3 x3 x $\frac{1}{4}$	3490
*7672	2	80	7940	Angle	74	..	3 $\frac{1}{2}$ x3 $\frac{1}{2}$ x $\frac{3}{16}$	5280
*7634	4	116	7942	Angle	38	36	3 $\frac{1}{2}$ x3 $\frac{1}{2}$ x $\frac{3}{16}$	7645

\*E.E.I. standard pin spacing.

Prices upon application.

## For Telephone Arms

Pin hole size,  $\frac{13}{16}$  inch. Pole mounting hole size,  $\frac{11}{16}$  inch. Pole pin spacing, 16 inches. Side pin spacing, 10 inches. Flat style brace.

No.	7602	7604	7606	7608	7610
No. of Pins.....	2	4	6	8	10
Length.....inches	20	40	60	80	100
Brace No. ....	8020	8020	8022	8030	8032
Size Angle.inches	3x2x $\frac{3}{16}$	3x2x $\frac{3}{16}$	3x3x $\frac{1}{4}$	3x3x $\frac{1}{4}$	3x3x $\frac{1}{4}$
Ship. Wt.					
Per 100....lb.	575	1125	2700	3600	4510

Prices upon application.

## Hubbard Angle Steel Cable Crossarms

Hot Galvanized



For telephone cables. Furnished complete with No. 8901 messenger clamps, clamp bolts and nut spacers.

Braces and brace bolt are not included.

No.	Per 100	Use Crossarm Brace No.	No. of Cables	SPACING BETWEEN CABLES, INCHES			Size Angle Inches	Ship. Wt. Lb. per 100
				Overall Length In.	Center To Side	Center To Center		
8923	\$870.05	8120	4	36	20	6	3x3x $\frac{1}{4}$	2225
8924	1007.78	8130	6	48	20	6	3x3x $\frac{1}{4}$	3025
8933	1133.88	8120	4	36	20	6	5x3x $\frac{3}{16}$	3225
8934	1740.13	8130	6	48	20	6	5x3x $\frac{3}{16}$	4425
8938	2616.49	8130	4	48	32	6	5x3x $\frac{1}{2}$	6525



## Rainier Wood Insulator Pin Specifications



## Scope

This specification covers wood pins made of yellow locust (sometimes called black locust from the color of its bark).

## General

The specification and drawings are intended to include all instructions necessary for the guidance of the manufacturer in his work. They are intended to supplement each other and any details indicated in one and not in the other shall be executed the same as if indicated in both.

**Dimensions.** Pins shall be of the style and dimensions shown, and allowable variations must not be exceeded. Pins and threads shall be smoothly and accurately formed. Figures on the drawing shall be followed in preference to scale measurements.

**Seasoning.** Pins manufactured from green or partially seasoned wood shall, when seasoned, conform to the requirements of this specification.

**Material.** Finished pins shall not contain any of the defects listed below, and, where any of these defects are present, they shall be cause for rejection.

**Annular Rings.** Rings which depart from parallelism with the center line of pin by a sufficient amount to allow a ring starting at the center of the bottom of the pin to run out of the side below the lower thread.

**Checks.** Checks exceeding 3 inches in length or  $\frac{1}{16}$  inch in width.

**Knots.** Loose or unsound knots. Sound knots exceeding  $\frac{1}{8}$  inch in diameter above the shoulder or exceeding  $\frac{1}{4}$  inch in diameter below the shoulder. The least diameter of a knot shall be considered its diameter for the purpose of this specification.

**Loose Heart.**  
**Pitch Pockets.**

**Rot.**

**Sapwood.** Sapwood exceeding  $\frac{1}{8}$  inch in thickness except on the shoulder of the pin.

**Shakes.** Cracks or splits concentric to the annular rings of the wood.

**Wane.** Wane or bark above the shoulder.

**Worm Holes.** Worm holes in the top 7-inch section of the pin.

## Allowable Variations

8-Inch				
No. of threads per inch, 4, tapering 1.11 inch per foot.				
Dimension.....	a	d	u	xd
Over.....inches	$\frac{1}{64}$	$\frac{1}{8}$	$\frac{1}{32}$	$\frac{3}{8}$
Under.....inches	$\frac{1}{64}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{8}$

9-Inch				
No. of threads per inch 4, tapering $\frac{1}{16}$ inch per inch.				
Dimension.....	a	c	d	f
Over.....inches	$\frac{1}{64}$	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{4}$
Under.....inches	$\frac{1}{64}$	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{32}$

## Standard Pins

No.	Size	Diam. Top In.	Wt. per 1000 Lb.
RLP-508	$1\frac{1}{2} \times 8$	1	325
RLP-509	$1\frac{1}{2} \times 9$	1	480

## Transposition Pins

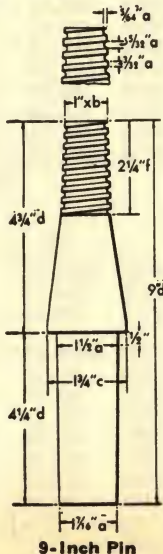
RLP-512	$1\frac{1}{2} \times 9$	1	400
RLP-514	$1\frac{1}{2} \times 10$	1	550

## High Tension Pins

RLP-520	$1\frac{1}{2} \times 9$	$1\frac{3}{8}$	600
RLP-522	$1\frac{1}{2} \times 11$	$1\frac{3}{8}$	750
RLP-524	$1\frac{1}{2} \times 12$	1	625
RLP-525	$1\frac{1}{2} \times 12$	$1\frac{3}{8}$	800
RLP-527	$1\frac{1}{2} \times 12$	1	1200
RLP-528	$1\frac{1}{2} \times 12$	$1\frac{3}{8}$	1300

## Duplex Pins

RLP-530	$1\frac{1}{2} \times 11\frac{1}{2}$	1	500
RLP-531	$1\frac{1}{2} \times 12$	1	550
RLP-533	$1\frac{1}{2} \times 12$	1	650
RLP-535	$1\frac{1}{2} \times 13$	1	750



8-Inch Pin

Prices Upon Application

9-Inch Pin

## Rainier Wood Insulator Bracket Specifications



Bracket



Pole Step

**Scope.** This specification covers wood brackets made of oak.

**Brackets.** Brackets shall be free from cracks, shakes, brashy wood and all other imperfections, except as hereinafter specified.

**Seasoning.** The maximum moisture content of seasoned brackets shall be 20%.

**Checks.** The presence of checks is permitted provided that they do not extend into the threaded section of the bracket or intersect any nail hole and are not greater than 2 inches in length.

**Grain.** The grain shall be straight and shall be practically parallel to the axis of the threaded portion of the bracket. The grain at either of the right-angled corners at the end of the bracket shall not run out below the bottom thread on the opposite side of the bracket.

**Insect-Holes.** In wood otherwise sound, a few small insect-holes not exceeding  $\frac{1}{16}$  inch in diameter may be present, provided that they are scattered and appear only in the portion of the bracket between the turned section and the small nail hole. No more than 5% of the brackets furnished shall contain such insect-holes.

**Knots.** Brackets shall be free from loose or unsound knots. Sound knots are permitted in the turned section of the bracket up to a diameter not greater than  $\frac{1}{4}$  inch, provided that the distance between any 2 knots is not less than 1 inch. Sound knots are also permitted in the portion between the turned section and the small nail hole up to a diameter not greater than  $\frac{1}{2}$  inch, provided that not more than 3 knots are present in this portion of the bracket and that all such knots are at least  $\frac{1}{4}$  inch distant from either nail hole.

**Sapwood.** Brackets may contain sapwood along any edge provided it does not appear on any face to a distance greater than  $\frac{1}{4}$  inch from the edge.

## Standard Wood Brackets

No.	Size Inches	Weight Pounds per 1000
ROB-550-4	$1\frac{1}{2} \times 2 \times 10$	600
ROB-552-5 (AT&T)	$1\frac{1}{2} \times 2 \times 12$	800
ROB-555-6 (WU)	2 $\times 2\frac{3}{8} \times 12$	1000
ROB-556-7 (WU)	2 $\times 2\frac{3}{4} \times 12$	1150

## Standard Wood Pole Steps

ROB-576	$1\frac{3}{4} \times 2\frac{3}{4} \times 7$	700
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## Standard Western Union or Signal Pins

Hot Galvanized

For use with standard insulators having one-inch pin holes. Furnished with air dried oak cobs, boiled in paraffine. Pins of high-carbon steel, with clean threads and square nuts.

## Long Shank Pins

For Wood Crossarms

No.	†*8000	††*8005
Plain..... per 100	\$25.94	\$41.16
Galvanized..... per 100	29.16	44.93
Diameter Shank..... in.	1½	5⁄8
Length above Shoulder..... in.	4¼	4¼
Length below Shoulder..... in.	5	5
Ship. Wt. Per 100..... lb.	88	125

## Lag Screw Pins

For Wood Arms and Poles

No.	8006	8007
Galvanized..... per 100	\$33.61	50.17
Diameter Shank..... in.	1½	5⁄8
Length above Shoulder..... in.	4¼	4¼
Length below Shoulder..... in.	3	3
Ship. Wt. Per 100..... lb.	61	99

\*A. T. & T. Co. Std. †Western Union Std. ††A. R. A. Std.



## Standard Western Union or Signal Pins

Hot Galvanized

## Short Shank Pins

For use with standard insulators having one-inch pin holes. Furnished with air dried oak cobs, boiled in paraffine. Pins of high-carbon steel, with clean thread and square nuts.

For Steel Crossarms, Transposition Brackets and Break Irons

No.	†*8010	††*8015	††8015A
Galvanized..... per 100	\$32.15	39.77	41.52
Diam. Shank..... in.	1½	5⁄8	5⁄8
Lgth. above Shoulder..... in.	4¼	4¼	4¼
Lgth. below Shoulder..... in.	1	1	1½
Ship. Wt. Per 100..... lb.	55	82	102

With Long Cob for Transposition Insulators

No.	*8011	8016
Galvanized..... per 100	\$43.99	53.75
Diameter Shank..... in.	1½	5⁄8
Length above Shoulder..... in.	5	5
Length below Shoulder..... in.	1	1
Ship. Wt. Per 100..... lb.	58	100

\*A. T. & T. Co. Std. †Western Union Std. ††A. R. A. Std.

## Hubbard Wood Top Pins

With Steel Bolts

Hot Galvanized

Made of properly seasoned wood tops, thoroughly impregnated with paraffine. The head of the solid steel bolt is sunk in the pin top to eliminate pressure against insulator. Furnished assembled.

For 1-Inch Insulator Pin Hole



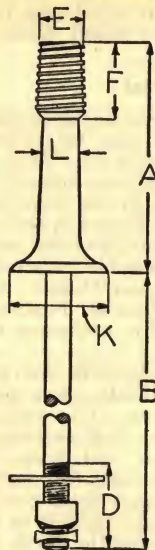
No. 8070

No.	Per 100	Wood Top		Lgth. Diam.	Lgth. Diam.	Lgth. Diam.	Lgth. Diam.	Ship. Wt. per 100
		Top In.	Bot. In.					
8064	\$36.03	1	1½	4	1½	9	5	80
8070	37.49	1	1½	4½	1½	5½	1	60
8071	47.28	1	2¼	5¼	1½	6½	1¼	78
8074	43.12	1	1½	4½	1½	9½	5	87
8075	52.74	1	2¼	5¼	1½	10½	5¼	101
8076	53.60	1	2¼	5¼	1½	11½	6¼	113

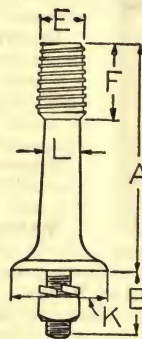
## Peirce Forged Steel Pins

Tapered Body—Lead Thread

Hot Galvanized



Long Shank Type



Short Shank Type

Designed to carry the full strength of the pin body to the top regardless of the length. Under excessive strain where a yielding of the pin occurs, it will be found to take place in a uniform manner indicating the absence of any weak spots. The yield also occurs below the pin threads eliminating all danger of insulator fracture from this cause.

Lead threads are securely bonded to the steel and carefully formed to meet insulator manufacturers' standards. There are no troublesome fins or mold marks to hinder insulator installation or to cause imperfect seating of the insulator. Lead tops are recessed to prevent localized pressure on the insulator top when it is turned down too tightly. This feature eliminates popping off insulator tops. Base diameters insure proper bearing on the arm for maximum resistance to strain.

Made solid, of one-piece forgings. There are no joints, seams, or weak spots.

Pins are furnished with lock washers.

## Long Shank for Wood Arms

1½-Inch Lead Threads

No.	Flat Base Per 100	DIMENSIONS, INCHES							Ship. Wt. Lb. per 100
		A	B	D	E	F	K	L	
5716	\$169.10	6	6½	2½	1¾	2½	3	1	371
5717	173.05	7	6½	2½	1¾	2½	3	1	393
5718	177.58	8	6½	2½	1¾	2½	3	1	415
5724	200.76	6	7	3	1¾	2½	3	1½	506
5726	206.91	7	7	3	1¾	2½	3	1½	528
5728	216.13	8	7	3	1¾	2½	3	1½	568
5730	284.19	9	7	3	1¾	2½	3½	1½	710
5732	289.22	10	7	3	1¾	2½	3½	1½	741
5734	321.54	11	7	3	1¾	2½	3¾	1½	924
5736	350.78	12	7	3	1¾	2½	3¾	1½	959
5738	380.01	13	7	3	1¾	2½	3¾	1½	1060

## Short Shank for Steel Arms

1-Inch Lead Threads

No.	Per 100	DIMENSIONS, INCHES							Ship. Wt. Lb. per 100
		A	E	F	K	L	M		
5703	\$157.56	4	1	1¾	2½	¾	1¾		205
5707	166.11	5	1	1¾	2½	¾	1¾		219
5711	173.90	6	1	1¾	2½	¾	1¾		233

1½-Inch Lead Threads

No.	Per 100	DIMENSIONS, INCHES							Ship. Wt. Lb. per 100
		A	E	F	K	L	M		
5723	\$189.14	6	1¾	2½	3	1½	1½		420
5725	193.19	7	1¾	2½	3	1½	1½		456
5727	202.42	8	1¾	2½	3	1½	1½		526
5729	262.19	9	1¾	2½	3½	1½	1½		616
5731	266.49	10	1¾	2½	3½	1½	1½		666
5733	304.39	11	1¾	2½	3¾	1½	1½		773
5735	332.08	12	1¾	2½	3¾	1½	1½		871
5737	359.75	13	1¾	2½	3¾	1½	1½		915

Special pins for insulators having 1½-inch pin hole can be furnished.



## Hubbard Forged Steel Pins

With 1-Inch Lead Thread for Low Voltage Insulators

Hot Galvanized

For lighting, telephone and telegraph lines on which insulators with 1-inch pin holes are used. Eliminates danger of extreme temperature changes causing rupture of porcelain due to expansion.

Pins can be driven into crossarms or poles without injury to thread, although driving is not recommended.

## Long Shank Type—For Wood Crossarms

Furnished with lock nuts.



No. 981S

## Flat Base

No.	Per 100	Diam. Shank In.	Diam. Base In.	Length, Inches Above Base	Length, Inches Below Base	Overall Length, Inches	Ship. Wt. Lb. per 100
971	\$59.48	1/2	1 3/4	5	5 1/2	10 1/2	129
981	67.85	5/8	2	5	5 3/4	10 3/4	206
981A	68.69	5/8	2	5	6 1/2	11 1/2	214
983	74.65	5/8	2	6	5 3/4	11 3/4	224
984	70.21	5/8	2	6	6 1/2	12 1/2	219
990	99.89	3/4	2 1/2	6	6 1/2	12 1/2	304
990A	97.98	3/4	2 1/2	5	6 1/2	11 1/2	294

## Saddle Base

981S	\$74.99	5/8	2	5	5 3/4	10 3/4	238
981AS	75.83	5/8	2	5	6 1/2	11 1/2	246
983S	81.79	5/8	2	6	5 3/4	11 3/4	256
984S	77.35	5/8	2	6	6 1/2	12 1/2	251
990AS	105.12	3/4	2 1/2	5	6 1/2	11 1/2	336
990S	107.03	3/4	2 1/2	6	6 1/2	12 1/2	326



## Short Shank Type—For Wood Crossarms

Furnished with spring lock washers.

No.	Per 100	Diameter, Inches Shank	Diameter, Inches Base	Length, Inches Above Base	Length, Inches Below Base	Overall Length, Inches	Ship. Wt. Lb. per 100
972	\$58.11	1/2	1 3/4	5	1 1/4	6 1/4	105
986	63.64	5/8	2	5	1 1/2	6 1/2	126
987	85.41	5/8	2	6	1 1/2	7 1/2	135
993-A	119.03	3/4	2 1/2	4 3/4	1 1/2	6 1/4	181
993	119.03	3/4	2 1/2	6	1 3/4	7 3/4	181



## Lag Screw Type—For Pole and Transformer Wiring

No.	Per 100	Diameter, Inches Shank	Diameter, Inches Base	Length, Inches Above Base	Length, Inches Below Base	Overall Length, Inches	Ship. Wt. Lb. per 100
973	\$53.33	1/2	1 3/4	4 3/4	3	7 3/4	97
975	61.33	1/2	1 3/4	6	3	9	109
988	60.04	5/8	2	4 3/4	3	7 3/4	116
989	90.01	5/8	2	7 1/2	4	11 1/2	150
994	120.95	3/4	2 1/2	6	4	10	184

## Hubbard Broad Base Forged Steel Pins

With 1-Inch Lead Thread

Hot Galvanized

For supporting heavy primary and secondary lines on wood crossarms.

For flat top arms and roof arms.

Width of base, 2 1/2 inches. Diameter of shank, 5/8-inch.

## Flat Base

No.	Per 100	Height Above Arm, In.	Length Shank In.	Wt. Lb. per 100
1091	\$114.21	4 1/2	5 1/2	209

## Saddle Base

No. 1091S	1091S	\$121.37	4 1/2	5 1/2	244
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## Hubbard O-B Insulator Pins

Hot Galvanized

For Wooden Arms

PATENTED

Pins with 5/8-inch shanks are furnished with 2 1/4-inch square washer.

Pins with 3/4-inch shanks have 3-inch square washers.

Furnished with M.F. locknut, as shown.



## With 1-Inch Lead Thread

Circular Flat Base		Rectangular Curved Base		DIMENSIONS, INCHES						Approx. Ship. Wt. Lb. per 100
No.	Per 100	No.	Per 100	Length Above Arm	Length Below Arm	Shank Diam.	Curved Base	Flat Base	Body Diam.	
71305	\$130.74	71345	\$142.17	5	6 1/2	5/8	2 5/8 x 2 7/8	2 3/4	7/8	273
71308	135.54	71348	146.97	6	6 1/2	5/8	2 5/8 x 2 7/8	2 3/4	7/8	298
71807	151.04	71857	169.61	6	6 1/2	3/4	3 x 3 1/2	3	1	305
71820	155.44	71860	174.01	7	7	3/4	3 x 3 1/2	3	1	330

## With 1 3/8-Inch Lead Thread

71810	\$141.25	71850	\$152.68	6	6 1/2	5/8	2 5/8 x 2 7/8	2 3/4	7/8	445
71811	145.71	71851	157.50	7	7	5/8	2 5/8 x 2 7/8	2 3/4	7/8	490
71814	150.47	71852	161.90	8	7	5/8	2 5/8 x 2 7/8	2 3/4	7/8	515
71404	150.20	71454	167.71	5	6 1/2	3/4	3 x 3 1/2	3	1	457
71407	156.76	71457	175.33	6	6 1/2	3/4	3 x 3 1/2	3	1	451
71411	161.16	71461	179.73	7	7	3/4	3 x 3 1/2	3	1	491
71414	167.12	71464	185.69	8	7	3/4	3 x 3 1/2	3	1	525
71420	238.06	71470	296.97	10	7	3/4	3 x 3 1/2	3	1	580
71423	244.15	71473	300.03	11	7	3/4	3 x 3 1/2	3	1	614
71426	250.24	71476	306.13	12	7	3/4	3 x 3 1/2	3	1	660
71417	231.96	71467	290.86	9	7	3/4	3 x 3 1/2	3	1	549
71608	216.13	71658	272.01	8	7	3/4	3 3/4 x 4	3 3/4	1 1/8	601
71611	284.19	71661	340.07	9	7	3/4	3 3/4 x 4	3 3/4	1 1/8	638
71614	289.22	71664	345.10	10	7	3/4	3 3/4 x 4	3 3/4	1 1/8	677
71617	321.54	71667	377.42	11	7	3/4	3 3/4 x 4	3 3/4	1 1/8	710
71620	350.78	71670	435.89	12	7	3/4	3 3/4 x 4	3 3/4	1 1/8	752
71623	380.01	71673	435.89	13	7	3/4	3 3/4 x 4	3 3/4	1 1/8	784



## For Channel Arms

PATENTED

Shank extends 1 1/2-inch below the base and has 3/4-inch diameter threads.

## With 1-Inch Lead Thread

No.	Per 100	Length Above Arm	Base Diam.	Body Diam.	Ship. Wt. Lb. per 100
71952	\$129.21	6	3	1	355
71953	133.37	7	3	1	382

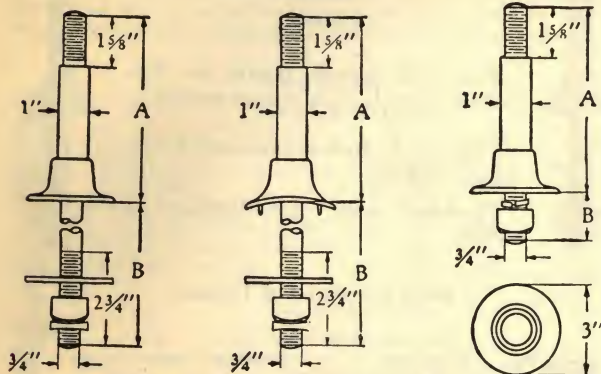
## With 1 3/8-Inch Lead Thread

71552	\$134.93	6	3	1	358
71553	139.09	7	3	1	384
71554	146.88	8	3	1	410
71556	200.13	10	3	1	433
71557	205.48	11	3	1	497
71558	210.83	12	3	1	537
71752	202.41	8	3 3/4	1 1/8	503
71753	262.19	9	3 3/4	1 1/8	524
71754	266.49	10	3 3/4	1 1/8	589
71755	304.39	11	3 3/4	1 1/8	623
71756	332.08	12	3 3/4	1 1/8	653
71757	359.75	13	3 3/4	1 1/8	687



## Hubbard O-B Insulator Pins

## Separable Thimble Type

Hot Galvanized  
PATENTED

Insulator end has 3/4-inch thread for attaching a separable thimble.

## For Wood Arms

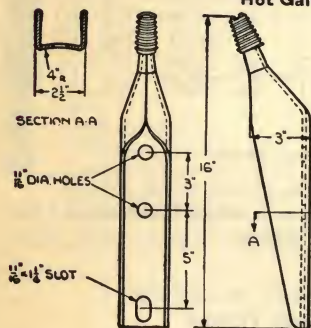
Flat Base		Curved Base		DIMENSIONS, INCHES					Ship. Wt. Lb. per 100
No.	Per 100	No.	Per 100	A	B	Curved Base	Flat Base Diam.	Ship. Wt. Lb. per 100	
71485	\$150.20	71515	\$167.71	4 5/8	7	3x3 1/2	3	316	
71491	161.16	71521	179.73	6 5/8	7	3x3 1/2	3	372	
71497	231.96	71527	290.85	8 5/8	7	3x3 1/2	3	419	
71500	238.05	71530	296.95	9 5/8	7	3x3 1/2	3	446	

## For Channel Arms

Flat Base		Curved Base		DIMENSIONS, INCHES					Ship. Wt. Lb. per 100
No.	Per 100	No.	Per 100	A	B	Curved Base	Flat Base Diam.	Ship. Wt. Lb. per 100	
71432	\$129.90			4 5/8	1 1/2	3	3	234	
71433	134.93			5 5/8	1 1/2	3	3	260	
71434	139.08			6 5/8	1 1/2	3	3	275	
71435	146.87			7 5/8	1 1/2	3	3	314	
71436	194.78			8 5/8	1 1/2	3	3	341	
71437	200.13			9 5/8	1 1/2	3	3	367	

## No. 3029 Hubbard Angle Pressed Steel Pole Top Pins

Hot Galvanized



Angle of 20°.

Has standard 1-inch diameter lead thread.

Overall length, 16 inches. Hole spacing, 3 and 5 inches.

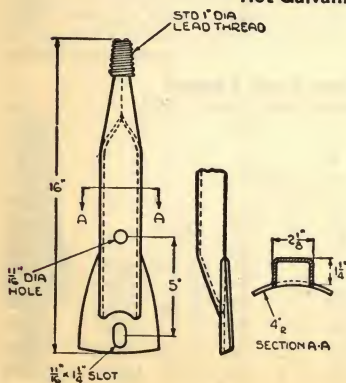
Thickness of steel, 3/16-inch.

Approximate shipping weight, 490 pounds.

No. 3029..per 100 \$193.27

## No. 3283 Hubbard Pressed Steel Pole Top Pins

Hot Galvanized



Has flared base, and standard 1-inch diameter lead thread.

Overall length, 16 inches. Hole spacing, 5 inches.

Thickness of steel, 3/16-inch.

Approximate shipping weight, 294 pounds.

No. 3283  
.....per 100 \$102.00

## Peirce Standard Pressed Steel Pole Top Pins

Hot Galvanized

Made from No. 9 gage sheet steel, pressed to a channel shape measuring 1 3/4 x 1 1/8 inches.

## Lead Thread Type

No.	Per 100	Lgth. Over-All In.	Hole Spacing In.	Diam. Thrd. In.	Ship. Wt. Lb. per 100
3034	\$99.10	18	8	1	319
3039	122.02	18	8	1 3/8	409
3044	200.99	24	8	1	424
3049	223.90	24	8	1 3/8	506

## Peirce Pole Top Pins

Hot Galvanized

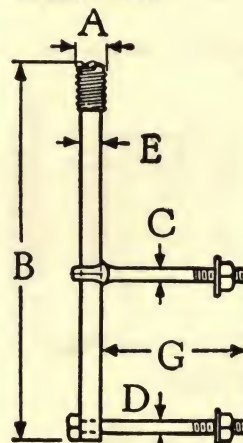
For higher voltage lines, extra heavy pipe pins are often used because of their high strength and light weight. They offer a considerable extension above the pole top.

Mounting holes are 1/16 inch in diameter.

If it is desired to mount these pins by means of the pipe supporting fixtures listed below, specify pins with bottom mounting hole only.

## 1 1/8-Inch Lead Thread

No.	Per 100	Lgth. In.	Nom. Size Pipe, In.	Hole Spacing In.	Ship. Wt. Lb. per 100
3070	.....	18	1 1/4	8	385
3071	\$330.39	18	1 1/2	8	503
3073	398.15	24	1 1/2	8	908
3075	.....	28	1 1/2	8	985
3076	650.32	28	2	8	1207
3077	.....	32	1 1/2	10	1040
3078	.....	32	2	10	1391
3079	.....	36	2	10	1576
3093	.....	22 1/2	1 1/2	8	908



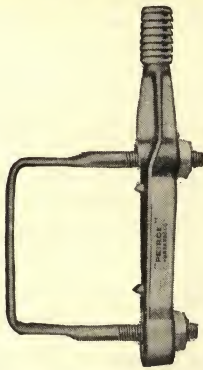
## Hubbard O-B Solid Steel Pole Top Pins

8-Inch (G)			11-Inch (G)			DIMENSIONS, INCHES				
No.	Per 100	Wt. Lb. per 100	No.	Per 100	Wt. Lb. per 100	A	B	C	D	E
71120	\$294.85	767	71122	\$300.57	831	1	20	5/8	1 1/2	1
71124	324.87	879	71126	330.59	937	1	24	5/8	1 1/2	1
71140	304.24	835	71142	309.96	895	1 3/8	20	5/8	1 1/2	1
71144	333.33	949	71146	339.04	1010	1 3/8	24	5/8	1 1/2	1
71148	368.83	1070	71150	374.55	1120	1 3/8	28	5/8	1 1/2	1
71152	406.76	1180	71154	412.47	1240	1 3/8	32	5/8	1 1/2	1
71156	446.34	1280	71158	452.05	1340	1 3/8	36	5/8	1 1/2	1
71164	346.01	1200	71166	351.73	1280	1 3/8	24	3/4	5/8	1 1/8
71168	380.83	1320	71170	386.55	1400	1 3/8	28	3/4	5/8	1 1/8
71172	417.86	1450	71174	423.58	1530	1 3/8	32	3/4	5/8	1 1/8
71176	457.96	1580	71178	463.67	1660	1 3/8	36	3/4	5/8	1 1/8



**Peirce 1-Inch Drop-Forged Clamp Pins**

Hot Galvanized



May be used at angles in the line when assembled with a crossarm reinforcing plate.

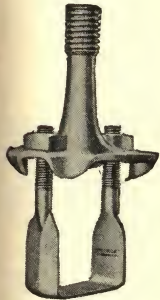
On straight line runs the pin is used without the plate and is prevented from canting by two  $\frac{1}{4}$ -inch lugs. Mounting slots are for  $\frac{1}{2}$ -inch diameter crossarm straps.

Has 1-inch lead thread.

Size of crossarm, 4x5 inches and smaller.

Pin height above arm,  $4\frac{3}{4}$  inches.

No. ....	4420
Per 100 .....	\$82.21
Shipping Weight per 100 .....	pounds 175

**Peirce Wide Base Clamp Pins**For 1-Inch Pin Hole  
Hot Galvanized

Designed for angle and corner construction.

Each pin is forged from a single piece of hot rolled open hearth steel. The broad base rests evenly on the arm and prevents pin from cutting into the wood, while the four lugs hold the pin from twisting on the crossarm.

Pins are used with  $\frac{5}{8}$ -inch crossarm straps.

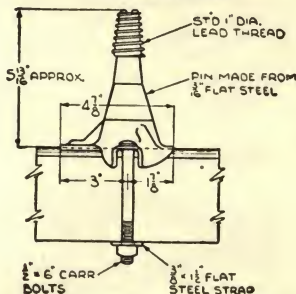
Pin height above arm,  $5\frac{3}{4}$  inches.

Flat Base No.	Curved Base No.	With Lead Threads		Size of Crossarm Inches	Ship. Wt. Lb. per 100
		Per 100			
4320	4220	\$220.70		$3\frac{1}{4} \times 4\frac{1}{4}$	405
4321	4221	220.70		$3\frac{1}{2} \times 4\frac{1}{2}$	405
4322	4222	220.70		$3\frac{3}{4} \times 4\frac{3}{4}$	475
4323	4223	220.70		4 x 5	475

Price does not include crossarm straps.

**Hubbard Broad Base Clamp Pins**

Hot Galvanized



Flat Arm No.	Roofed Arm No.	Per 100	—DIMENSIONS, INCHES—		Approx. Ship. Wt. Lb. per 100
			Size of Arm	Diam. of Thread	
4820	4720	\$137.35	$3\frac{1}{4} \times 4\frac{1}{4}$	1	355
4821	4721	141.79	$3\frac{1}{2} \times 4\frac{1}{2}$	1	360
4822	4722	149.25	$3\frac{3}{4} \times 4\frac{3}{4}$	1	365
4823	4723	153.67	4x5	1	370

**Peirce Transformer Pins**

With 1-Inch Thread

Hot Galvanized

No. 126 is used for running transformer leads from the line crossarm to transformer arm. May also be used on pole for lamp leads, or for attaching any wires which are not subjected to line strains.

Screw: No. 22x2 inches.



No. 126

**Forged Steel Type**

Has square shoulder.

No.	Lead Thread
No. ....	126
Per 100 .....	\$55.87
Length Above Shoulder .....	inches 5
Length Overall .....	inches 7
Diameter Base .....	inches 2
Shipping Weight per 100 .....	lb. 130

**Peirce Crossarm Reinforcing Plates**

Hot Galvanized



Used on angles and corners of lines as a reinforcement to clamp pins.

Holds the pin rigid under strains of 1200 pounds in any direction.

Used in connection with crossarm straps as listed in table.

Flat Top Arm No.	Roofed Top Arm No.	Per 100	Size of Arm Inches	Use Cross-Arm Strap No.	Ship. Wt. Lb. per 100
5071	5081	\$41.48	$3\frac{1}{4} \times 4\frac{1}{4}$	1001	110
5072	5082	42.22	$3\frac{1}{2} \times 4\frac{1}{2}$	1002	116
5073	5083	44.13	$3\frac{3}{4} \times 4\frac{3}{4}$	1003	122
5074	5084	44.51	4 x 5	1004	128
5075	5085	41.48	$3\frac{1}{4} \times 4\frac{1}{4}$	2001	110
5076	5086	42.22	$3\frac{1}{2} \times 4\frac{1}{2}$	2002	116
5077	5087	44.13	$3\frac{3}{4} \times 4\frac{3}{4}$	2003	122
5078	5088	44.51	4 x 5	2004	128

**Hubbard Drop-Forged Crossarm Straps**

Hot Galvanized

**For Side Arm Mounting**

For attaching clamp pins.  
Designed with the spread equal to the larger dimension of the arm.  
Thread length is 2 inches.



No.	Per 100	Size of Arm Inches	Light Type				Ship. Wt. Lb. per 100
			Spread	Lgth.	Flat Section	Round Section	
1001	\$55.49	$3\frac{1}{4} \times 4\frac{1}{4}$	$4\frac{1}{4}$	5	$\frac{3}{16} \times 1\frac{1}{8}$	$\frac{1}{2}$	103
1002	59.83	$3\frac{1}{2} \times 4\frac{1}{2}$	$4\frac{1}{2}$	$5\frac{1}{4}$	$\frac{3}{16} \times 1\frac{1}{8}$	$\frac{1}{2}$	108
1003	64.00	$3\frac{3}{4} \times 4\frac{3}{4}$	$4\frac{3}{4}$	$5\frac{1}{2}$	$\frac{3}{16} \times 1\frac{1}{8}$	$\frac{1}{2}$	112
1004	68.34	4 x 5	5	$5\frac{3}{4}$	$\frac{3}{16} \times 1\frac{1}{8}$	$\frac{1}{2}$	121
2001	\$62.29	$3\frac{1}{4} \times 4\frac{1}{4}$	$4\frac{1}{4}$	5	$\frac{1}{4} \times 1\frac{3}{8}$	$\frac{5}{8}$	145
2002	67.98	$3\frac{1}{2} \times 4\frac{1}{2}$	$4\frac{1}{2}$	$5\frac{1}{4}$	$\frac{1}{4} \times 1\frac{3}{8}$	$\frac{5}{8}$	152
2003	73.68	$3\frac{3}{4} \times 4\frac{3}{4}$	$4\frac{3}{4}$	$5\frac{1}{2}$	$\frac{1}{4} \times 1\frac{3}{8}$	$\frac{5}{8}$	158
2004	79.22	4 x 5	5	$5\frac{3}{4}$	$\frac{1}{4} \times 1\frac{3}{8}$	$\frac{5}{8}$	165

**For Mounting on Top or Bottom of Arm**

Similar to the crossarm straps listed above except that the spread is equal to the smaller dimension of the arm.

Thread length is 2 inches.



No.	Per 100	Size of Arm Inches	Light Type				Ship. Wt. Lb. per 100
			Spread	Lgth.	Flat Section	Round Section	
1871	\$55.62	$3\frac{1}{4} \times 4\frac{1}{4}$	$3\frac{1}{4}$	6	$\frac{3}{16} \times 1\frac{1}{8}$	$\frac{1}{2}$	103
1872	59.83	$3\frac{1}{2} \times 4\frac{1}{2}$	$3\frac{1}{2}$	$6\frac{1}{4}$	$\frac{3}{16} \times 1\frac{1}{8}$	$\frac{1}{2}$	108
1873	64.13	$3\frac{3}{4} \times 4\frac{3}{4}$	$3\frac{3}{4}$	$6\frac{1}{2}$	$\frac{3}{16} \times 1\frac{1}{8}$	$\frac{1}{2}$	112
1874	68.48	4 x 5	4	$6\frac{3}{4}$	$\frac{3}{16} \times 1\frac{1}{8}$	$\frac{1}{2}$	121
1881	\$62.86	$3\frac{1}{4} \times 4\frac{1}{4}$	$3\frac{1}{4}$	$5\frac{3}{8}$	$\frac{1}{4} \times 1\frac{3}{8}$	$\frac{5}{8}$	145
1882	68.74	$3\frac{1}{2} \times 4\frac{1}{2}$	$3\frac{1}{2}$	$5\frac{5}{8}$	$\frac{1}{4} \times 1\frac{3}{8}$	$\frac{5}{8}$	152
1883	74.42	$3\frac{3}{4} \times 4\frac{3}{4}$	$3\frac{3}{4}$	$5\frac{7}{8}$	$\frac{1}{4} \times 1\frac{3}{8}$	$\frac{5}{8}$	158
1884	80.23	4 x 5	4	$6\frac{1}{8}$	$\frac{1}{4} \times 1\frac{3}{8}$	$\frac{5}{8}$	165



### Peirce Crossarm Saddles Hot Galvanized Pressed Steel Type



No. 5002

No.	Per 100	Width of Crossarm Inches	Diameter Pin Hole Inches	Shipping Wt. Lb. per 100
5001	\$29.58	3 1/4	1 3/16	104
5002	33.75	3 1/2	1 3/16	114
5003	35.52	3 3/4	1 3/16	124
5004	37.04	4	1 3/16	134
5005	45.02	5	1 3/16	144
5011	29.58	3 1/4	1 1/16	104
5012	33.75	3 1/2	1 1/16	114
5013	35.52	3 3/4	1 1/16	124
5014	36.78	4	1 1/16	134
5015	45.02	5	1 1/16	144

### No. 5008—Malleable Iron Type



Crossarm is made in all widths.

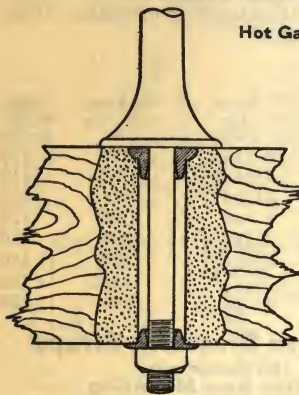
Diameter of pin hole, 1 3/16 inch.

Shipping weight per 100, 109 pounds.

No. 5008 . . . per 100 \$55.88

### Hubbard Centering Washers

Hot Galvanized



Used on stock cross arms which have been drilled for wood pins, to adopt washer to smaller shanks of steel pins. Top centering washer designed to draw down into pin hole when pin is tightened on arm, leaving top surface clear for pin base. May be used on either flat or roofed arms.

Top centering washer may also be used on bottom of arm if a standard flat washer is placed between it and nut.

### Malleable Iron Bottom Centering Washers



No.	Per 100	DIAM. PIN HOLE, IN. Arm	DIAM. PIN HOLE, IN. Washer	O.D. Washer Inches	Shipping Wt. Lb. per 100
5027	\$26.41	1 1/2	1 1/16	2 1/2	33
5028	26.41	1 1/4	1 3/16	2 1/2	33

### Malleable Iron Top Centering Washers



Provided with wings which are drawn into wood as a means of preventing turning and to provide a more solid installation.

72237	\$26.41	1 1/2	1 1/16	1 1/2	37
72225	26.41	1 1/2	1 3/16	1 1/2	44

### Pressed Steel Bottom Centering Washers

No. 5032 is used in conjunction with a standard flat washer.

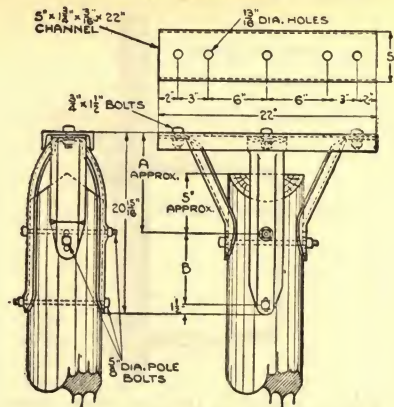
5030	\$29.33	1 1/4	1 3/16	2 1/16	34
5031	29.33	1 1/4	1 1/16	2 1/16	34
5032	29.33	1 1/2	1 3/16	2 1/16	34
5033	29.33	1 1/2	1 1/16	2 1/16	34
5029	29.33	2	1 3/16	2 7/8	39

### Forged Steel Bottom Centering Washers



No.	Per 100	DIAM. PIN HOLE, IN. Arm	DIAM. PIN HOLE, IN. Washer	O.D. Washer Inches	Shipping Wt. Lb. per 100
72238	\$29.19	1 1/2	2 1/32	3 3/4	40
70346	29.19	1 1/2	2 5/32	3 3/4	40

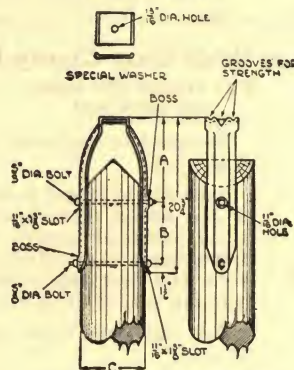
### Hubbard Double Arming Ridge Irons Hot Galvanized



No.	Per 100	Pole Diam.	Mtg. Bolt Size	Pin Hole Size	Approx. Ship. Wt. Lb. per 100
6320	\$640.07	5 1/2 to 6 3/4	5/8	1 3/16	2800
6321	640.07	6 3/4 to 8	5/8	1 3/16	2800
6322	640.07	8 to 8 1/2	5/8	1 3/16	2800

### Hubbard Ridge Irons

Hot Galvanized



No.	Per 100	Pole Diam.	Mtg. Bolt Size	Pin Hole Size	Approx. Ship. Wt. Lb. per 100
6308	\$321.16	5 1/2 to 6 3/4	5/8	1 1/4	1100
6309	321.16	6 3/4 to 8	5/8	1 1/4	1100
6310	321.16	8 to 8 1/2	5/8	1 1/4	1100

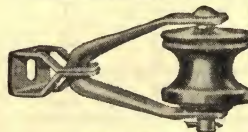
### Hubbard Insulated Clevises

Hot Galvanized



No.	Per 100	Ext. to Ctr. of Bolt	Cotter Bolt Size	Style of Insulator	Approx. Ship. Wt. Lb. per 100
1352	\$74.38	5	5/8x4 3/8	355 Dry	305
1353	77.54	5	5/8x4 3/8	455 Wet	305

### Nos. 2968 and 2978



No. 2968

Identical to Nos. 1352 and 1353 except for the addition of a No. 2969 shackle.

Attachment slot measures 1 1/16x1 3/16 inches. Shackle length is sufficient to allow the insertion of a machine bolt without dismantling the clevis.

2968	\$101.96	7 1/2	5/8x4 3/8	455 Wet	319
2978	98.79	7 1/2	5/8x4 3/8	355 Dry	319



## Hubbard Insulated Clevises

Hot Galvanized

Nos. 1342 and 1333

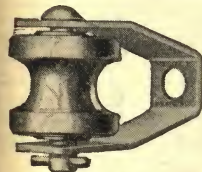


A standard, flat steel type clevis for mounting on a through bolt or an insulator bolt. Designed for  $\frac{5}{8}$ -inch bolts. Uses the standard No. 355 dry process insulator for low voltage lines. Oval mounting hole,  $1\frac{1}{16} \times \frac{3}{4}$  inches.

Shipping weight, 253 pounds per 100.

No. 1342, with Insulators (No. 355 Dry)..... per 100 \$66.67  
No. 1333, with Insulators (No. 455 Wet)..... per 100 69.83

No. 1341



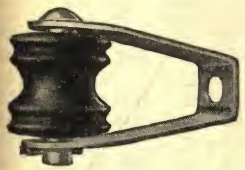
Uses the No. 1606 dry process insulator.

These clevises are similar except for the attachment hole. No. 1341 has oval hole for  $\frac{5}{8}$ -inch bolts; No. 1343 has round hole for  $\frac{1}{2}$ -inch bolts.

Shipping weight, 154 pounds per 100.

No. 1341..... 1341  
With Insulators..... per 100 \$50.23  
Mounting Hole..... inches  $1\frac{1}{16} \times \frac{3}{4}$  Oval

No. 1339



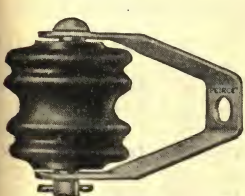
Popular for rural construction. Has sufficient conductor clearance for low or medium voltage lines.

Uses No. 1608 wet process insulator. Oval mounting hole,  $1\frac{1}{16} \times \frac{3}{4}$  inches.

Shipping weight 165 pounds per 100.

No. 1339, with Insulators..... per 100 \$56.82

No. 1340



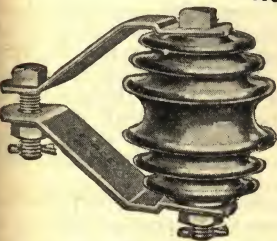
This clevis has a higher flash-over rating than the No. 1339. Used where high mechanical strength is desirable as well as electrical efficiency.

Furnished in  $\frac{3}{16} \times \frac{1}{2}$ -inch steel with  $\frac{5}{8}$ -inch diameter cotter bolt. Uses No. 1609 wet process insulator. Oval mounting hole,  $1\frac{1}{16} \times \frac{3}{4}$  inches.

Shipping weight, 288 pounds per 100.

No. 1340, with Insulators..... per 100 \$73.53

No. 1330



Used extensively on medium voltage lines for corner or dead-end attachments. Especially for 4000-volt primaries.

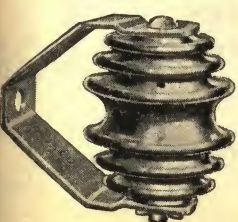
The  $\frac{5}{8}$ -inch attachment bolt is designed for fastening on eye or hook bolts. Pole mounting bolts not included. With lead sleeve on insulator bolt at extra cost.

Uses No. 1613 wet process insulator. Machine mounting bolt,  $\frac{5}{8} \times 2\frac{3}{8}$  inches.

Shipping weight, 572 pounds per 100

No. 1330, with Insulators..... per 100 \$187.54

No. 1344



Designed for through bolt or crossarm bolt mounting. Similar to No. 1330 clevis shown above.

Mounting bolts are not included. With lead sleeve on insulator at extra cost.

Uses No. 1613 wet process insulator.

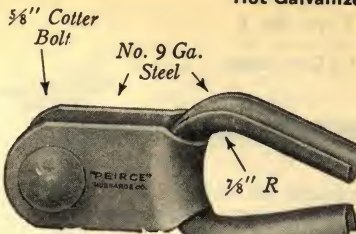
Oval mounting hole,  $1\frac{1}{16} \times \frac{3}{4}$  inches.

Shipping weight, 550 lbs. per 100.

No. 1344, with Insulators..... per 100 \$167.64

## Hubbard Standard Thimble Clevises

Hot Galvanized



No. 673

Freedom of the thimble allows enough swing for a desirable flexibility.

Used for dead-ending lines to suspension insulators.

Formed by combining a special wire rope thimble with a pressed steel attachment clevis.

Thimble has a 2-inch diameter for the conductor loop and a groove for  $\frac{3}{4}$ -inch strand or smaller.

No.	Per 100	Steel Gage	DIMENSIONS, INCHES		Approx. Ship. Wt. Lb. per 100
			Cotter Bolt Diam.	Strand or Wire Size	
673	\$67.60	9	$\frac{5}{8}$	$\frac{3}{4}$ or Under	95

## Hubbard Hi-Tension Thimble Clevises

Hot Galvanized



Designed for dead-ending lines of high voltage. A  $3\frac{1}{2}$ -inch diameter makes it especially desirable for aluminum and copper conductors.

Pressed in a single piece with a wire groove suitable for  $\frac{3}{4}$ -inch or smaller conductors.

There is ample clearance for armor rods or tape.

No.	Per 100	Steel Gage	DIMENSIONS, INCHES		Approx. Ship. Wt. Lb. per 100
			Cotter Bolt Diam.	Strand or Wire Size	
675	\$89.73	12	$\frac{5}{8}$	$\frac{3}{4}$ or Under	95

## No. 674 Hubbard Open Side Thimble Clevises



Designed to eliminate the difficulties of line threading. Intended for angle work from 30° to 60°; can be used for lesser angles if desired.

Tie-wires can be used safely without danger of crystallization.

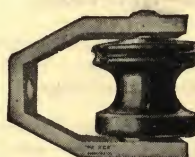
Side wire groove,  $\frac{3}{4}$  inch; diameter of thimble,  $3\frac{1}{4}$  inches. Length overall,  $6\frac{5}{8}$  inches.

No. 674, Shipping Weight 145 Pounds..... per 100 \$94.72

## Hubbard Insulated Clevises

Hot Galvanized

No. 561



Formed of  $1\frac{1}{2} \times \frac{3}{16}$ -inch channel steel. A sturdy dead-end or corner attachment.

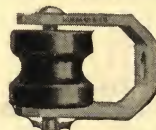
Used with No. 355 dry process insulator for low voltage lines.

Oval mounting hole,  $1\frac{1}{16} \times \frac{25}{32}$  inches.

Shipping weight, 242 pounds per 100.

No. 561, with Insulators..... per 100 \$84.25

No. 8820



Formed of flat steel.

Has  $1\frac{1}{16}$ -inch round mounting hole for  $\frac{5}{8}$ -inch mounting bolts.

Uses No. 357 dry process insulator.

Shipping weight, 131 pounds per 100.

No. 8820, with Insulators... per 100 \$46.13

## Peirce Crossarm Clevises

Hot Galvanized

For dead-ending line wires on single arms.



No.	Per 100	Cross-Arm In.	Diam. Steel In.	Steel Plates In.	Ship. Wt. Lb. per 100
549	\$86.88	$3\frac{1}{4} \times 4\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{32} \times 1\frac{1}{32}$	193
550	88.51	$3\frac{1}{2} \times 4\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{32} \times 1\frac{1}{32}$	198
551	89.64	$3\frac{3}{4} \times 4\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{32} \times 1\frac{1}{32}$	203
552	90.80	4 x 5	$\frac{1}{2}$	$\frac{1}{32} \times 1\frac{1}{32}$	209



## Hubbard Insulated Fork Bolts

## Type No. 1

Hot Galvanized

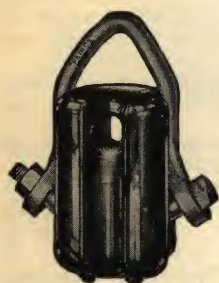


Equipped with insulator No. 357.

No.	8811	8814	8815
Per 100.....	\$108.97	120.07	125.21
Length of Bolt.....in.	9 <sup>13</sup> / <sub>16</sub>	11 <sup>13</sup> / <sub>16</sub>	13 <sup>13</sup> / <sub>16</sub>
Diameter.....in.	1 <sup>1</sup> / <sub>2</sub>	5 <sup>5</sup> / <sub>8</sub>	5 <sup>5</sup> / <sub>8</sub>
Ship. Wt. per 100.....lb.	205	226	247

## Peirce Porcelain Strain Insulators

## Standard Type—Dry Process



No. 506

Ordinarily used for dead-ending secondary circuits or guying.

Made with dimensions in accordance with recommended specifications of the Edison Electric Institute. Sharp corners and edges have been eliminated.

The radius of bolt or wire hole gives maximum bearing surface on clevis bolt. It may be used with guy strand or insulated wire.

When ordering insulators and clevises not listed as being applicable to each other, or when fitting different makes of insulators on

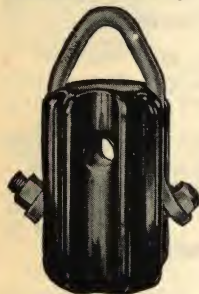
clevises, make certain that proper clearances are allowed.

Clevises are not included with insulators.

No.	502	504	506
Per 100.....	\$58.70	72.83	119.27
Length Overall.....inches	3 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>
Diameter Overall.....inches	2 <sup>5</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>
Diameter Over Groove.....inches	1 <sup>7</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>
Shipping Weight per 100.....pounds	128	158	299

## Clevises Used With Insulators

Insulator No.	502	504	506
Heavy Double Type Clevis, No....	782	785 <sup>1</sup> / <sub>2</sub>	789
Heavy Type Clevis, No.....	825	827 <sup>1</sup> / <sub>2</sub>	831 <sup>1</sup> / <sub>2</sub>
Barmack Forged Type Clevis, No..	865	871	869
Light Double Type Clevis, No....	882	885 <sup>1</sup> / <sub>2</sub>	889
Flexible Bale Type Clevis, No....	1552	1554	1556



No. 516

## Multi-Fin Type—Wet Process

For dead-ending primary circuits or guying high tension lines. With rugged fins and well-rounded edges.

When Hubbard Clevises and Peirce Multi-Fin Strain Insulators are used together, clevis leg rides at bottom of groove where unequal strain is best absorbed.

No.	512	514	516
Per 100.....	\$78.81	161.33	218.99
Length Overall.....inches	3 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>
Diameter Overall.....inches	2 <sup>15</sup> / <sub>16</sub>	3 <sup>5</sup> / <sub>8</sub>	3 <sup>15</sup> / <sub>16</sub>
Diameter Over Groove.....inches	1 <sup>7</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>
Shipping Weight per 100.....pounds	158	268	418

## Clevises Used With Insulators

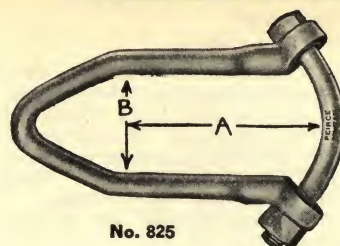
Insulator No.	512	514	516
Heavy Double Type Clevis, No....	789	785 <sup>1</sup> / <sub>2</sub>	782
Heavy Type Clevis, No.....	832	828	825
Barmack Forged Type Clevis, No..	869	871	865
Light Double Type Clevis, No....	889	885 <sup>1</sup> / <sub>2</sub>	882
Flexible Bale Type Clevis, No....	1556	1554	1552

## Hubbard Strain Insulator Clevises

## Hot Galvanized

Drop-forged from 1<sup>1</sup>/<sub>2</sub>-inch diameter open hearth steel. Ultimate strength, 13,000 pounds. Has 1<sup>1</sup>/<sub>2</sub>-inch bolt and lock washer.

A 1<sup>1</sup>/<sub>2</sub>-inch inside diameter eye is required to accommodate this clevis.



No. 825

No.	Per 100	DIMENSIONS INCHES		INSULATOR No.	Ship. Wt. Lb. per 100
		A	B		
825	\$80.72	3	2	502	113
827 <sup>1</sup> / <sub>2</sub>	86.34	3 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	504	122
828	83.71	4	2 <sup>1</sup> / <sub>4</sub>	514	121
831 <sup>1</sup> / <sub>2</sub>	86.67	4 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	506	135
832	86.91	5	2 <sup>1</sup> / <sub>2</sub>	516	138

## Standard Double Type

## Hot Galvanized

With this type of clevis two strain insulators can be assembled in series.



No. 885

## Light Type

Made from 3/8-inch round steel with 3/8-inch curved bolts.

No.	Per 100	Inside Inside Lgth. Width		Used With Insulator No.	Ship. Wt. Lb. per 100
		In.	In.		
882	\$108.51	8	2	502 or 512	139
882 <sup>1</sup> / <sub>2</sub>	112.68	8	2 <sup>1</sup> / <sub>4</sub>	504	140
885	126.99	10	2	502 or 512	157
885 <sup>1</sup> / <sub>2</sub>	155.84	10	2 <sup>1</sup> / <sub>4</sub>	504 or 514	158
886	155.84	10	2 <sup>1</sup> / <sub>2</sub>	506	160
888	159.12	12	2	502 or 512	180
888 <sup>1</sup> / <sub>2</sub>	164.55	12	2 <sup>1</sup> / <sub>4</sub>	504 or 514	183
889	164.55	12	2 <sup>1</sup> / <sub>2</sub>	506 or 516	185

## Heavy Type

Made from 1/2-inch round steel with 1/2-inch curved bolts.

No.	Per 100	Inside Inside Lgth. Width		Used With Insulator No.	Ship. Wt. Lb. per 100
		In.	In.		
782	\$143.69	8	2	502 or 512	151
782 <sup>1</sup> / <sub>2</sub>	143.69	8	2 <sup>1</sup> / <sub>4</sub>	504	152
785	156.85	10	2	502 or 512	180
785 <sup>1</sup> / <sub>2</sub>	156.85	10	2 <sup>1</sup> / <sub>4</sub>	504 or 514	182
786	156.85	10	2 <sup>1</sup> / <sub>2</sub>	506	183
788	164.79	12	2	502 or 512	202
788 <sup>1</sup> / <sub>2</sub>	164.79	12	2 <sup>1</sup> / <sub>4</sub>	504 or 514	204
789	164.79	12	2 <sup>1</sup> / <sub>2</sub>	506 or 516	205

## Hubbard Strain Insulator Clevises

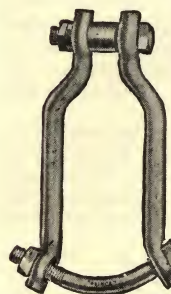
## Barmack Drop-Forged Type (Patented)

## Hot Galvanized

Designed to provide a strong and adjustable means for dead-ending wires. Will fit many sizes and types of strain insulators. Well adapted to dead-ending on steel work where the size of the attaching hole is too small to permit the use of the ordinary steel clevis. Also used to assemble two strain insulators in series.

To assemble the split clevis place the two members into opposite grooves of insulator and estimate the spacing between parallel flat flanges of clevis. Insert curved bolt and screw nut on until above spacing is obtained. Then

securely fasten assembly to eyelet or steel structure with the 1/2-inch bolt.



## Pressed Steel Type

## PATENTED

No.	Per 100	DIMENSIONS, INCHES		Approx. Ship. Wt. Lb. per 100
		Inside Length	Minimum Inside Width	
900	\$113.96	2 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	68
902	114.21	4 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	83

## Drop Forged Type

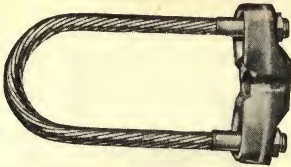
## PATENTED

No.	Per 100	DIMENSIONS, INCHES		Approx. Ship. Wt. Lb. per 100
		Inside Length	Minimum Inside Width	
861	\$92.09	3	1 <sup>1</sup> / <sub>2</sub>	103
865	117.42	4	2	114
869	124.66	5	2 <sup>1</sup> / <sub>2</sub>	126
871	117.42	4	2 <sup>1</sup> / <sub>4</sub>	115



### Hubbard Flexible Bail Clevises

Hot Galvanized



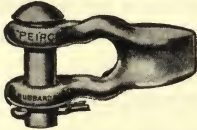
The stranded bail, when placed under tension, forms to fit any size or curvature of insulator. Yokes can be mounted on eye bolts or machine bolts (square head recommended). A groove around side of yoke is provided to keep eye centered.

Diameter bail,  $\frac{7}{16}$  inch; with  $\frac{1}{2}$ -inch machine threaded studs on ends. Bail nuts are trapped in yoke.

Galv. Strand Bails		With Copperweld Strand Bails		Inside Lgth. In.	INSIDE WIDTH INCHES		Used with Hubbard Insulator No.	Ship. Wt. Lb. per 100
No.	Per 100	No.	Per 100		Min.	Max.		
1552	\$160.95	1562	\$196.43	$3\frac{7}{8}$	$1\frac{3}{4}$	$2\frac{1}{2}$	502 or 512	160
1554	160.95	1564	196.43	$4\frac{1}{16}$	$1\frac{3}{4}$	$2\frac{1}{2}$	504 or 514	165
1556	160.95	1566	196.43	$5\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{2}$	506 or 516	170

### No. 655 Peirce Forged Steel Thimble Clevises

Hot Galvanized



For dead-ending lines to suspension insulators. With  $\frac{5}{8}$ -inch cotter bolt; will develop an ultimate strength of 20,000 pounds. A  $\frac{1}{2}$ -inch cotter bolt may be substituted for the  $\frac{5}{8}$ -inch size if fittings require.

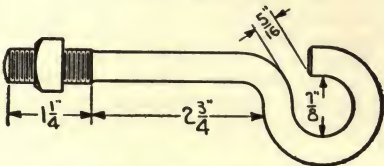
Diameter wire groove,  $1\frac{1}{4}$  inches.

Shipping weight 122 pounds.

No. 655.....per 100 \$57.62

### No. 9245 Hubbard Guard Arm Hooks

Hot Galvanized



Used on guard arms as dead-ends for telephone services. Fastened by bolting through the arm.

Diameter steel,  $\frac{1}{2}$  inch. Overall length,  $5\frac{7}{8}$  inches.

Diameter eye,  $\frac{1}{8}$  inch.

A. T. & T. Co. Std.

Shipping weight 45 pounds.

No. 9245.....per 100 \$22.97

### Hubbard Standard Transposition Brackets

Hot Galvanized



Nos. 9252 and 9255 furnished in heavy stock for use with pins having transposition insulators.

Except for No. 9255 all have  $\frac{3}{8}$ -inch hole for a wood screw and holes for  $\frac{3}{8}$ -inch carriage bolt. No. 9255 has  $\frac{1}{6}$ -inch wood screw hole and  $\frac{1}{6}$ -inch carriage bolt hole.

No.	Per 100	Steel Size Inches	Crossarm Size Inches	Ship. Wt. Lb. per 100
9249	\$76.65	$1\frac{1}{4} \times \frac{5}{16}$	$2\frac{3}{4} \times 3\frac{3}{4}$	277
*9250	76.91	$1\frac{1}{4} \times \frac{5}{16}$	3 x 4	286
†9251	76.91	$1\frac{1}{4} \times \frac{5}{16}$	$3\frac{1}{4} \times 4\frac{1}{4}$	284
†9252	134.28	$1\frac{1}{2} \times \frac{5}{8}$	$3\frac{1}{4} \times 4\frac{1}{4}$	416
9255	171.71	$1\frac{1}{2} \times \frac{1}{2}$	$3\frac{1}{2} \times 4\frac{1}{2}$	475

\*Western Union Std. †A. T. & T. Co. Std.

### No. 9270 Hubbard Transposition Brace Plates

Hot Galvanized



This brace plate is designed to prevent the transposition bracket from being pulled out of vertical, on slight angles in the line, because of the constant strain in one direction.

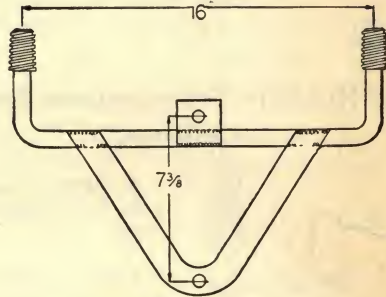
Holds the bracket in perfect alignment under excessive side pull.

Used with Nos. 9262 and 9275 on R.S.A. roofed cross arms.

No. 9270, Ship. Wt. 58 Pounds.....per 100 \$48.93

### No. 3144 Hubbard Pole Top Brackets

Hot Galvanized



No. 3144

Made of  $\frac{3}{4}$ -inch round steel braced with  $\frac{1}{4} \times 1\frac{1}{4}$ -inch flat steel.

Lead thread is standard 1-inch Allen type.

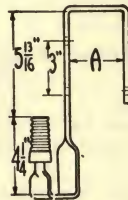
All joints are solidly welded.

No. ....	3144
Spread.....inches	16
Bolt Spacing.....inches	$7\frac{3}{8}$
Shipping Weight per 100.....pounds	450
Price upon application.	

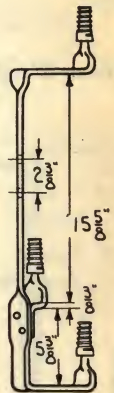
### Hubbard 1-Piece Transposition Brackets

For Phantom Circuits

Hot Galvanized



No. 9260



No. 9262

The end of this bracket is turned up and fitted with a standard wood cob. No. 9262 is mounted with  $\frac{1}{2}$ -inch machine bolts.

No.	9260	9261	9262
Per 100.....	\$155.13	155.72	526.18
No. of Points.....	1	1	3
Steel Size.....inches	$1\frac{1}{4} \times \frac{5}{16}$	$1\frac{1}{4} \times \frac{5}{16}$	$1\frac{1}{2} \times \frac{3}{8}$
Cross Arm Size.....inches	3x4	$3\frac{1}{4} \times 4\frac{1}{4}$	All Sizes
Ship. Wt. per 100.....pounds	341	346	918



No. 9275 Hubbard Transposition Brackets

For Phantom Circuits

Hot Galvanized

Furnished in two pieces.

Pin holes are for 1/2-inch short shank pins.

Assembly on arm is accomplished with 1/2-inch machine bolts.

Size steel, 1 1/2 x 3/8 inches. Any size crossarm can be used.

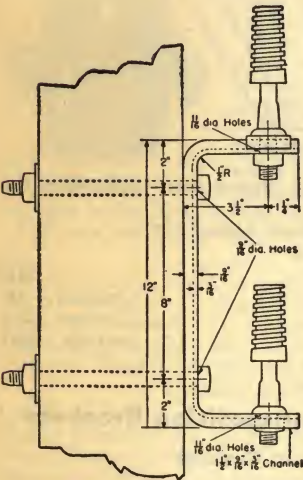
Pins and bolts are not included.

Western Union Std.

No. 9275, Ship. Wt. 797 Lb.  
..... per 100 \$276.72

No. 9265 Hubbard Transposition Brackets

Hot Galvanized



No. 9265 is bolted to the pole by 1/2-inch machine bolts.

Uses two No. 8015 pins and glass insulators.

A special bridging washer is used in attaching the top pin.

Pin hole size, 1/16 inches. Pole mounting hole size, 3/16 inches.

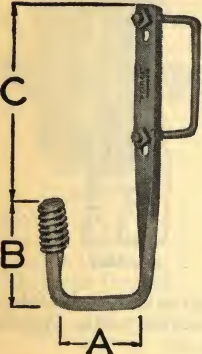
Channel size, 1 1/2 x 3/8 x 3/8 inches.

Approx. shipping weight, per 100, 250 pounds.

No. 9265..... per 100 \$72.79

Peirce Single Point Type Transposition Brackets

Hot Galvanized



Made of channel steel and fitted for one insulator.

Threads are standard 1-inch diameter.

No. 20110 is used for normal spans and No. 20111 is used for long spans.

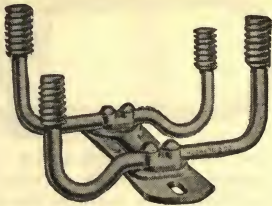
Unless otherwise specified, cross-arm U-bolt No. 1021, for 3 1/4 x 4 1/2-inch arms, will be furnished.

Furnished punched and slotted.

No.	Per 100	DIMENSIONS, INCHES				Approx. Ship. Wt. Lb. per 100
		Channel	A	B	C	
20110	\$88.00	3/4 x 3/8 x 1/8	3 1/2	4 3/8	6 1/2	101
20111	113.24	1 x 1/2 x 1/8	3 1/2	4 1/2	8	171

Hubbard Point Type Transposition Brackets

Hot Galvanized



Hubbard point type right and left hand transposition brackets are attached on standard crossarms through adjacent pin holes with 1/2x6-inch crossarm bolts fitted with a clipped washer. Both attachment holes are slotted to provide a total of two inches of adjustment.

Mounting hole spacing, 10 to 12 inches.

Line spacing, 6 3/4 inches.

Base steel size, 1/4 x 3 x 13 5/16 inches.

Point steel size, 3/4-inch round.

System of Transposition  
PATENTED

In establishing a transposition of the right and left hand point type, a pair of brackets is employed as shown by the illustration in which one wire is black to distinguish it from the other.

Assuming that a complete transposition is the crossing of one wire over the other and then eventually back to its original position in relation to the other wire, two complete transpositions are shown by the illustration. Note that the first one is black over white and the second is black under white, maintaining perfect balance. No cutting is necessary, and no tangles result when arms or poles are wrecked as is the case with the spiral type of transposing on the average bracket.

Mounting slots fit standard drilled arms with a 2-inch adjustment range.

Mounting bolts are furnished.

Lead thread or wood cobs are available.

Hubbard point type brackets listed were designed specifically for use with this system. The purchaser of Hubbard brackets is assured a license permitting the transposing of wires as covered by the above patent.

If further details are desired, communicate with the nearest Hubbard factory office.

No.	Description	*Approx. Ship. Wt. Lb. per 100
9272LT	Right Hand Bracket, Lead Thread.....	*900
9273LT	Left Hand Bracket, Lead Thread.....	*900
9272	Right Hand Bracket, Wood Cob.....	*800
9273	Left Hand Bracket, Wood Cob.....	*800

Prices upon application.

Accessories			*Approx. Ship. Wt. Lb. Per 100
No.	Each	Description	
9706	\$11.18	1/2x6-Inch Bolt (Two Furnished) ..	45.1
7881	1.82	1/2-Inch Clipped Washer (Two Furnished).....	3.3

\*Including bolts.



## Peirce Crossarm Spreader Brackets

Hot Galvanized

No. 20217 furnished with a hole so that No. 20217A, consisting of a single point and attachment bolt, may be added, forming a three point bracket similar to No. 20317.

Threads are standard 1-inch lead type.



No. 20317

No.	Per 100	No. Wires	Wire Spacing Inches	Steel Size Inches	Ship. Wt. Lb. per 100
20217	\$259.06	2	13	No. 9 Ga.	390
20217A	59.42	1	....	No. 9 Ga.	128
20317	302.07	3	6½	No. 9 Ga.	500

## No. 9280 Break Iron Brackets

Hot Galvanized



Used for dead-ending and breaking communication system wires for take-off.

Furnished complete with pins and bolt.

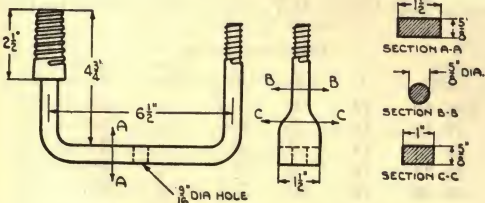
Pin spacing, 6½ inches; size wood cob, 1 inch; pin extension, ¼ inches.

Western Union Standard. A.R.A. Standard.

No. 9280. Ship. Wt. per 100, 448 Lb. .... per 100 \$182.29

## No. 9281 Hubbard Break-Iron Brackets

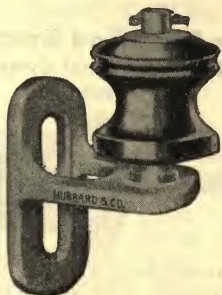
Hot Galvanized



No.	Per 100	Pin Spacing Inches	Steel Size Inches	Mtg. Hole Size In.	Approx. Ship. Wt. Lb. per 100
9281	\$220.39	6½	5/8x1½	9/16	340

## No. 4435 Hubbard Secondary Brackets

Hot Galvanized



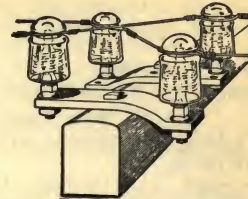
Made of malleable iron.

No.	*Per 100	Insulator No. (Not Included)	Mtg. Bolt Size In.	Approx. Ship. Wt. Lb. per 100
4435	\$142.52	355 or 455	5/8	112

\*Without insulator.

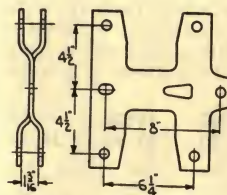
## Hubbard Transposition Break Iron Brackets

Hot Galvanized

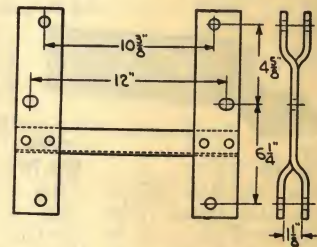


No. 9285

No. 9285 covers a plate, two No. 8061 pins and a machine bolt. Two sets are needed for transposition. Pins and 5/8-inch bolt are included.



No. 9286



No. 9287

Nos. 9286 and 9287 accomplish the same result except that the entire assembly is made up in one piece. Neither pins nor mounting bolts are included.

No.	9285	*9286	*9287
Per 100	\$236.97	345.88	576.68
Type	Single	Double	Riveted
Size Steel	1/2	5/16	3/8
Size Mounting Holes	1 1/16	1 1/16x1	1 1/16x7/8
Diameter of Pin Holes	1 1/16	1 1/16	1 1/16
Ship. Wt. per 100	470	660	1100

\*A. T. & T. Co. Standard.

## Peirce Wireholders

Multi-Point Type

Hot Galvanized



No. 3299

The insulators can be installed after back has been mounted to building. Insulators can be easily removed or installed to make wireholders of various wire spacing.

Back pressed from 12-gage steel; has 1/16-inch holes in center of 5/16x1½-inch slot.

No.	No. Wires	Wire Spacing In.	Ext. to Ctr. of Wire Hole, In.	Insulator No.	Ship. Wt. Lb. per 100
3296	2	6	2½	1654	297
3299	2	9	2½	1654	325
3394	3	4½	2½	1654	410
3396	3	6	2½	1654	435
24296	2	6	2½	4-11-64	245
24299	2	9	2½	4-11-64	260
24394	3	4½	2½	4-11-64	330
1654	Insulator with 3/8" Bolt & Cork Washer				90
4-11-64	Insulator with 3/8" Bolt				70

Prices upon application.



## Hubbard Telephone Distributing Brackets

Hot Galvanized

## No. 9200 L House Type

Used at the house end of a telephone service for dead ending twisted pair telephone wires.

Size steel,  $\frac{3}{16} \times 1\frac{3}{4}$  inches. Length legs,  $3\frac{3}{16} \times 2$  inches.

A. T. &amp; T. Co. Std.

No. 9200, Ship. Wt. 56 Pounds..per 100 \$16.36

## L Pole Type

For taking off telephone services, or for short runs on poles.

Size steel,  $\frac{1}{4} \times 2$  inches. Length legs,  $4 \times 2$  inches. Approximate shipping weight, 100 pieces, 97 pounds.

No. ....  $\dagger$ \*9202 ..... \*9203  
Per 100 ..... \$24.87 ..... 23.68

No. of Holes..... 3 ..... 2  
Size Holes..... inches  $\frac{15}{32}$  .....  $\frac{9}{16}$

\*Western Union Std.  $\dagger$ A. T. & T. Co. Std.

## Hubbard Telephone Corner Brackets

Hot Galvanized

Used where leads from the pole come to the building at an angle and to carry leads around the corner of a building.

No.	*9204	*9205	†9206	†9207
Per 100	\$30.76	34.00	31.99	38.19
Mounting Hole Size.in.	$\frac{11}{32}$	$\frac{11}{32}$	$\frac{9}{32}$	$\frac{9}{32}$
Insulated Holes....in.	$\frac{11}{32}$	$\frac{11}{32}$	$\frac{11}{32}$	$\frac{13}{32}$
Size Steel.....in.	$\frac{7}{32} \times 1\frac{1}{2}$	$\frac{7}{32} \times 1\frac{1}{2}$	$\frac{3}{16} \times \frac{1}{2}$	$1\frac{1}{4} \times 1\frac{1}{2}$
Length Overall....in.	$4\frac{3}{8} \times 2\frac{1}{2}$	$8\frac{1}{2} \times 1\frac{1}{16}$	$3\frac{1}{4} \times 3\frac{1}{8}$	$3\frac{1}{4} \times 4\frac{7}{8}$
Ship. Wt. per 100..lb.	66	96	71	121

\*Western Union Std.  $\dagger$ A. T. & T. Co. Std.

## Porcelain Knobs for Telephone Brackets

Dry Process

White glaze, porcelain knob insulator for use with telephone corner brackets.

No.	9225	9226
Per 100	\$14.79	25.39
No. of Grooves	2	4
Diam. Bolt Hole.....inches	$\frac{3}{8}$	$\frac{7}{16}$
O.D.....inches	$1\frac{1}{8}$	$1\frac{3}{4}$
Height.....inches	$1\frac{1}{16}$	$2\frac{1}{4}$
Ship. Wt. per 100.....pounds	22	40

## Hubbard Bolts for Telephone Brackets

Hot Galvanized

Used for attaching porcelain knob insulators to telephone pole or house brackets.

No.	Stove Bolt		Machine Bolt	
	9232	9233	9603	9605 $\frac{1}{2}$
Per 100	\$3.77	4.76	5.12	6.50
Diam.....inches	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{3}{8}$
Length.....inches	2	3	3	$5\frac{1}{2}$
Ship. Wt. per 100....lb.	6.6	8.6	13.8	22.9

## Peirce Cross Arm U-Bolts

Horizontal Construction

Hot Galvanized

Used in position illustrated.

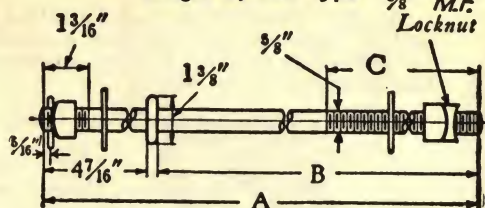
Formed of  $\frac{3}{8}$ -inch round steel.Has  $1\frac{1}{2}$  inches of thread.

No.	1018	1021	1022	1023	1024
Per 100	\$40.25	40.13	40.15	40.19	40.23
Size Crossarm...in.	$2\frac{3}{4} \times 3\frac{3}{4}$	$3\frac{1}{4} \times 4\frac{1}{4}$	$3\frac{1}{2} \times 4\frac{1}{2}$	$3\frac{3}{4} \times 4\frac{3}{4}$	$4 \times 5$
Diam. of Steel...in.	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$
Spread.....in.	$3\frac{3}{4}$	$4\frac{1}{4}$	$4\frac{1}{2}$	$4\frac{3}{4}$	5
Length of Bolt...in.	$3\frac{3}{4}$	$4\frac{1}{4}$	$4\frac{1}{2}$	$4\frac{3}{4}$	5
Ship. Wt. per 100.lb.	40	53	59	66	73

## Hubbard Insulator Bolts

Hot Galvanized

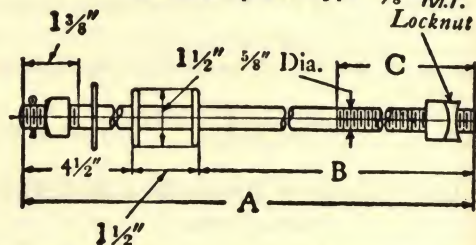
## Single Up-Set Type

 $\frac{3}{8}$ " M.F. Locknut

Single up-set bolts are fitted at the insulator end with a nut and  $1\frac{1}{16}$  inches of thread. An M.F. nut (lock nut) is also furnished and the bolt is drilled for a cotter pin  $\frac{5}{16}$ -inch in from the end.

No.	Per 100	DIMENSIONS, INCHES				For Use with Insulator No. (Not Included)	Approx. Ship. per 100
		A	B	C	Thread Diam.		
8739 $\frac{1}{2}$	\$48.03	$10\frac{3}{4}$	6	4	$\frac{5}{8}$	355 or 455	160
8740	49.80	$11\frac{3}{4}$	7	5	$\frac{5}{8}$	355 or 455	170
8741	51.58	$12\frac{3}{4}$	8	6	$\frac{5}{8}$	355 or 455	180
8741 $\frac{1}{2}$	53.43	$13\frac{3}{4}$	9	6	$\frac{5}{8}$	355 or 455	189
8742	55.20	$14\frac{3}{4}$	10	6	$\frac{5}{8}$	355 or 455	197
8743	58.74	$16\frac{3}{4}$	12	6	$\frac{5}{8}$	355 or 455	215
8744	62.28	$18\frac{3}{4}$	14	6	$\frac{5}{8}$	355 or 455	234
8745	65.82	$20\frac{3}{4}$	16	6	$\frac{5}{8}$	335 or 455	252

## Double Up-Set Type

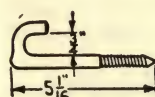
 $\frac{3}{8}$ " M.F. Locknut

Insulator bolt has an M.F. nut (lock nut) on the pole end.

No.	Per 100	DIMENSIONS, INCHES				For Use with Insulator No. (Not Included)	Approx. Ship. per 100
		A	B	C	Thread Diam.		
8822	\$56.41	12	6	$3\frac{1}{2}$	$\frac{5}{8}$	355 or 455	172
8824	57.40	13	7	$3\frac{1}{2}$	$\frac{5}{8}$	355 or 455	179
8826	58.40	14	8	$4\frac{1}{2}$	$\frac{5}{8}$	355 or 455	188
8828	59.39	15	9	$5\frac{1}{2}$	$\frac{5}{8}$	355 or 455	196
8830	60.46	16	10	$5\frac{1}{2}$	$\frac{5}{8}$	355 or 455	204

## No. 1316 Hubbard Drive Hooks

Hot Galvanized



Used for wire clamp attachments on poles, arms or buildings. Has fetter drive threads and a drive head.

Steel diameter,  $\frac{1}{16}$  inch. Overall length,  $5\frac{1}{16}$  inches. Length of thread, 2 inches.

No. 1316, Ship. Wt. per 100, 29 Pounds .....per 100 \$15.30

## Peirce Dead-End Brackets

For Railway Signal Circuits

Hot Galvanized



A  $3\frac{3}{4} \times 4\frac{1}{2}$ -inch carriage bolt with  $1\frac{1}{4}$  inches of thread is riveted to base of bracket. This makes bracket suitable for mounting on crossarms  $3\frac{3}{4} \times 4\frac{1}{4}$  to  $4 \times 5$  inches.

No.	195
With Insulators.....per 100	\$80.64
Insulator Hole.....in.	$\frac{3}{16} \times \frac{3}{4}$
Extension to Center of Insulator Hole.....in.	$1\frac{1}{2}$
With Insulator No.	1602
Shipping Weight per 100.....lb.	122



**Klauber Universal Dead-End Clevises**

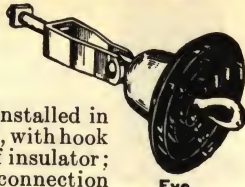
Hot Galvanized

For metal cap insulators using



No. 555 Clevis

eye type connection; hook type connection, installed in same manner, with hook on cap end of insulator; clevis type connection



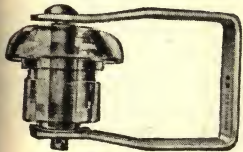
Eye Connection

with legs attaching on outside of legs of clevis. Used on  $\frac{1}{2}$ " or  $\frac{5}{8}$ " bolts. Between legs inside,  $\frac{3}{16}$ "; total width across legs,  $\frac{1}{16}$ ". Diameter: mounting hole,  $\frac{11}{16}$ "; cotter bolt,  $\frac{5}{8}$ ". Steel size,  $\frac{3}{16}$ " x  $\frac{1}{2}$ ".

No. ....	555	557
Per 100 .....	\$57.22	94.47
Extension to Center Cotter Bolt.....inches	$3\frac{1}{2}$	$4\frac{1}{2}$
Shipping Weight per 100.....pounds	129	153

**Hubbard Dead-Ending Shackles**

Hot Galvanized

No. 9290 Shackle  
No. 9291 Insulator

Used by signal and railroad companies for dead-ending or breaking bare signal wires. Made to clamp around crossarm.

Square holes for  $\frac{1}{2}$ -inch carriage bolt, running vertically through arm;  $\frac{3}{8}$ -inch lag screw at side of arm.

**Shackles**

Size crossarm,  $3\frac{1}{4}$  x  $1\frac{1}{4}$  inches. Size steel,  $\frac{3}{16}$  x  $1\frac{1}{16}$  inches.

No.	Description	Overall Length Inches	Ship. Wt. per 100	Per 100
*9290	Shackle Only, less Insulator.....	265		\$161.91
9296	Shackle with No. 1609 Wet Process Brown Porcelain Insulator....	401		195.34
<b>Insulators</b>				
1612	Wet Process Brown Porcelain, Skirt Style.....	$3\frac{7}{16}$	148	\$63.87
*9291	Glass, Double Skirt Style.....	$3\frac{1}{4}$	192	120.19

\*Western Union Standard.

**Hubbard Hub-Rak Secondary Racks**

Hot Galvanized

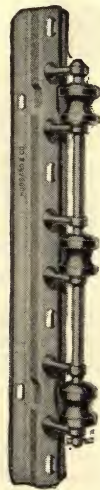
Designed with a heavy pressed steel back and forged points.

**Line Type** racks are made with both extended and non-extended backs. Numbers for non-extended back racks are obtained by suffixing the letter A to the standard number. For example, a 3-wire Hub-Rak with 8-inch spacing and extended back would be 30648; non-extended back would be 30648-A.

**Service Type** is made with extended backs only.



No. 30648



No. 30048

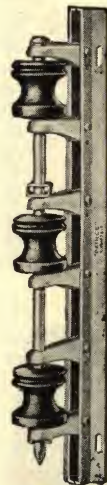
<b>Line Type</b>			<b>Service Type</b>			No. Line Wires	Line Wire Spacing In.	Over-all Lgth. In.
No.	With Insulator per 100	Without Insulator per 100	No.	With Insulator per 100	Without Insulator per 100			
20644	\$174.74	\$121.59	20044	\$174.86	\$144.11	2	4	14
20646	235.54	182.40	20046	174.86	144.11	2	6	16
20648	235.54	182.40	20048	182.17	151.43	2	8	18
20652	257.75	204.61	20052	227.77	197.02	2	12	22
30644	262.11	182.40	30044	243.14	197.03	3	4	18
30646	330.89	251.18	30046	243.14	197.03	3	6	22
30648	330.89	251.18	30048	260.13	214.02	3	8	25 $\frac{1}{4}$
30652	372.78	293.07	30052	323.67	277.56	3	12	34
40644	349.48	243.19	40044	315.31	253.82	4	4	22
40646	434.06	327.77	40046	315.31	253.83	6	6	28
40648	434.06	327.77	40048	339.05	277.56	8	8	34

**Peirce Secondary Racks**

Standard Type

Hot Galvanized

Rack points are of No. 9 gage steel with rounded tops so that wire insulation will not be harmed while stringing. Play between points and insulator is sufficient to eliminate jammed wires. Mounting may be accomplished at any point through the back with through bolts, using the No. 3350 mounting washers furnished. With or without insulators. Side mounting slots are for  $\frac{3}{8}$ -inch lag screws.



No. 1358

**With Extended Back**

No.	Per 100	No. Line Wires	Line Wire Spacing In.	Over-all Lgth. Back In.	With Insulators Ship. Per 100
1250	\$244.42	2	4	13 $\frac{1}{16}$	731
1258	288.55	2	8	17 $\frac{1}{16}$	826
1350	315.21	3	4	17 $\frac{1}{16}$	1014
1358	413.16	3	8	25 $\frac{1}{16}$	1344
1450	387.24	4	4	21 $\frac{1}{16}$	1207
1458	548.86	4	8	33 $\frac{1}{16}$	1657
1540	466.30	5	4	25 $\frac{1}{16}$	1700
3158	337.99	3	8	17 $\frac{1}{16}$	1004

**With Non-Extended Back**

No.	Per 100	No. Line Wires	Line Wire Spacing In.	Over-all Lgth. Back In.	*Approx. Ship. Wt. per 100
250	\$244.42	2	4	10 $\frac{1}{16}$	686
258	288.55	2	8	14 $\frac{1}{16}$	786
262	334.09	2	12	18 $\frac{1}{16}$	841
350	315.21	3	4	14 $\frac{1}{16}$	969
358	413.16	3	8	22 $\frac{1}{16}$	1299
362	522.28	3	12	30 $\frac{1}{16}$	1494
450	387.24	4	4	18 $\frac{1}{16}$	1162
458	548.86	4	8	30 $\frac{1}{16}$	1612
540	466.30	5	4	22 $\frac{1}{16}$	1645
566	.....	5	6	32 $\frac{1}{16}$	1750
3058	337.99	3	8	14 $\frac{1}{16}$	959

Prices include insulators.

**Hubbard Rural Type Secondary Racks**

Light weight rack using standard spool insulators Nos. 355 or 455 and furnished in standard spacings.

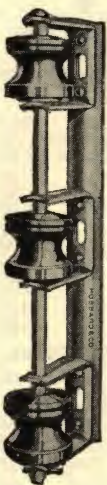
No. 2438-A has an extended back. All others have non-extended backs.

Rack back has a slight curve to fit the pole surface.

No.	*Per 100	Number of Line Wires	Line Wire Spacing, In.	Overall Back Lgth. In.	*Approx. Ship. Wt. per 100
2428	\$210.11	2	8	12	696
2438	308.39	3	8	20	1044
2438-A	308.39	3	8	25 $\frac{1}{4}$	1110
2448	407.63	4	8	28	1392

\*Including insulators.

Prices include insulators.



No. 2428

**Peirce Dead-Ending Straps**

For Secondary Racks

Hot Galvanized



No.	Per 100	Type	Mounting Pole	Holes, In. Rack	Steel Size In.	Ship. Wt. Lb. per 100
998	\$30.23	Hook	$\frac{9}{16}$	..	$\frac{1}{4}$ x $1\frac{1}{2}$	132
999	27.77	Light	$\frac{9}{16}$	$1\frac{1}{16}$	14 Ga. x $1\frac{1}{4}$	42
1000	31.22	Heavy	$\frac{9}{16}$	$1\frac{1}{16}$	$\frac{1}{4}$ x $1\frac{1}{4}$	118
1010	66.99	Long	$\frac{9}{16}$	$\frac{3}{4}$	$\frac{1}{4}$ x $1\frac{1}{4}$	190



## Hubbard Wireholders

## Hot Galvanized



Will accommodate all normal sized service wires or cables which formerly needed a special sized wire hole.

Screws are smooth, sharp pointed for easy starting and full threaded so they will hold any normal loading even when attached through timbers thinner than the length of the screw.

Size of wire hole,  $\frac{1}{8} \times 1$  inch.

No.	Type Bolt or Screw	Size Screw or Bolt, Gage No. or In.	Length Screw or Bolt, In.	Ship. Wt., Lb. per 100
No. 4-11-40	Toggle Bolt	$\frac{5}{16}$	$4\frac{1}{2}$	80
4-11-42	Carriage Bolt	$\frac{3}{8}$	5	80
4-11-44	Wood Screw	No. 22	$2\frac{1}{4}$	65
4-11-45	Wood Screw	No. 22	3	67
4-11-46	Wood Screw	No. 22	4	69
4-11-48	Wood Screw	No. 22	6	73
4-11-49	Wood Screw	No. 22	$7\frac{1}{2}$	76
4-11-50	Wood Screw	No. 22	$2\frac{1}{2}$	66
4-11-64	Stud Bolt	$\frac{3}{8}$	$1\frac{1}{2}$	65
4-11-100	Wood Screw	No. 22	$2\frac{1}{4}$	65

Prices upon application.

Peirce Wireholders  
All-Porcelain Type

Nos. 1607, 1617, 1707, 1717



No. 1618



Nos. 1621, 1631



Nos. 1625, 1635, 1725, 1735

With Insulators as on No. 1607—Wire Hole  $\frac{3}{4} \times 1\frac{1}{16}$  Inches

No.	Screw or Bolt, Cemented or In.	Screw Ledged In	Size of Screw or Bolt, Inches	In-ulator Process	Ship. Wt. Lb. per 100
1607	1607L	No. 22x2 $\frac{1}{4}$	Galv. Screw.....	Dry	95
1617	1617L	No. 22x2 $\frac{1}{4}$	Everdur Screw....	Dry	95
1619	1619L	No. 24x2 $\frac{1}{4}$	Galvanized Screw..	Dry	95
1627	1627L	$\frac{1}{4} \times 4\frac{1}{2}$	Toggle Bolt.....	Dry	100
1637	1637L	$\frac{3}{8} \times 5$	Carriage Bolt.....	Dry	125
1657	1657L	$\frac{1}{4} \times 4\frac{1}{2}$	Everdur Toggle Bolt....	Dry	105
1707	1707L	No. 22x2 $\frac{1}{4}$	Galv. Screw.....	Wet	100
1717	1717L	No. 22x2 $\frac{1}{4}$	Everdur Screw.....	Wet	100

With Insulators as on No. 1618—Wire Hole  $\frac{1}{2}$ " Diam.

1618	1618L	$14 \times 1\frac{1}{2}$	Cadmium Plated Screw. . .	40
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With Insulators as on No. 1621—Wire Hole  $\frac{5}{8}$ " Diam.

1621	1621L	No. 20x2 $\frac{1}{4}$	Galvanized Screw...	Dry	65
	1621A	No. 20x1 $\frac{1}{2}$	Galvanized Screw...	Dry	60
1623	1623L	No. 22x2 $\frac{1}{4}$	Galvanized Screw...	Dry	70
1631	1631L	No. 20x2 $\frac{1}{4}$	Everdur Screw....	Dry	65
1633	1633L	No. 22x2 $\frac{1}{4}$	Everdur Screw....	Dry	65
1641	1641L	1 $\frac{1}{4}$ x4 $\frac{1}{2}$	Toggle Bolt.....	Dry	80
1651	1651L	$\frac{3}{8}$ x5	Carriage Bolt.....	Dry	80

With Insulators as on No. 1625—Wire Hole  $2\frac{9}{32}$ " Diam.

1625	1625L	No. 22x2 $\frac{1}{4}$	Galvanized Screw..	Dry	125
1635	1635L	No. 22x2 $\frac{1}{4}$	Everdur Screw....	Dry	125
1645	1645L	$\frac{1}{4} \times 4\frac{1}{2}$	Toggle Bolt.....	Dry	150
1655	1655L	$\frac{3}{8} \times 5$	Carriage Bolt.....	Dry	140
1725	1725L	No. 22x2 $\frac{1}{4}$	Galvanized Screw..	Wet	135
1735	1735L	No. 22x2 $\frac{1}{4}$	Everdur Screw....	Wet	135

No. 1670 Ledged in Screw Only—Wire Hole  $1\frac{1}{2}$ " Diam.

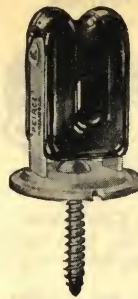
1670	$\frac{5}{8} \times 3$	Gimlet Point Lag Screw..	Dry	390
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Prices upon application.

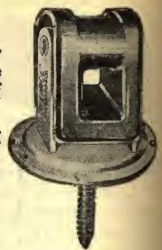
## Peirce Wireholders

## Standard Type

## Hot Galvanized



No. 190



No. 1190

Not affected by temperature changes or by difference in coefficient of expansion of parts.

No. 190 is for making house service connections. Copper cotter pin interlocks insulator with metal portion of wireholder. No. 290 is similar to No. 190 except has wet process porcelain insulator.

No.	Size of Screw, Bolt, or Tap	Extension Base to Ctr. Wire Hole In.	Size of Wire Hole In.	Ship. Wt. Lb. per 100
190	No. 22x2" Wood Screw	$1\frac{5}{8}$	$\frac{1}{2} \times 1\frac{1}{16}$	105
190A	No. 22x2" Wood Screw	$2\frac{1}{4}$	$\frac{1}{2} \times 1\frac{1}{16}$	115
190R	No. 22x2" Wood Screw	$4\frac{1}{4}$	$\frac{1}{2} \times 1\frac{1}{16}$	150
194	$\frac{5}{8}$ " Tap	$1\frac{29}{32}$	$\frac{1}{2} \times 1\frac{1}{16}$	95
195	$\frac{3}{8} \times 4\frac{1}{2}$ " Carriage Bolt	$1\frac{5}{8}$	$\frac{1}{2} \times 1\frac{1}{16}$	140
290	No. 22x2" Wood Screw	$1\frac{5}{8}$	$\frac{1}{2} \times 1\frac{1}{16}$	105
390	No. 22x3" Wood Screw	$1\frac{5}{8}$	$\frac{1}{2} \times 1\frac{1}{16}$	107
1190	No. 24x2 $\frac{1}{2}$ " Wood Screw	$1\frac{15}{16}$	$1\frac{1}{8} \times 1\frac{1}{8}$	228

Prices on application.



No. 191



No. 191-A

No. 299A is same as No. 299 except that it has a hole in center of back. When No. 191A is mounted in this hole it changes No. 299 from 2-wire 9-inch spacing to 3-wire  $4\frac{1}{2}$ -inch spacing. No. 191A is equipped with  $\frac{5}{16} \times \frac{5}{8}$ -inch stove bolt for attaching to back. Mounting slots are for  $\frac{1}{4}$  and  $\frac{3}{8}$ -inch screws.

No.	With Insulators Per 100	No. Wires	Wire Spacing Inches	Shipping Wt. Lb. per 100	No.	With Insulators Per 100	No. Wires	Wire Spacing Inches	Shipping Wt. Lb. per 100
191	\$64.28	1	0	94	394	\$181.60	3	$4\frac{1}{2}$	299
191A	58.60	1	0	77	396	185.98	3	6	330
296	127.41	2	6	211	494	252.51	4	$4\frac{1}{2}$	430
299	131.87	2	9	229	1602	22.57			
299A	131.87	2	9	229					

## Light Type

## Heavy Type

## Insulator Only—

Wire Hole  $\frac{1}{2} \times 1\frac{1}{16}$ "Wire Hole  $1\frac{1}{8} \times 1\frac{1}{8}$ "Wire Hole  $1\frac{1}{8} \times 1\frac{1}{8}$ "Wire Hole  $1\frac{1}{8} \times 1\frac{1}{8}$ "Wire Hole  $1\frac{1}{8} \times 1\frac{1}{8}$ "Wire Hole  $1\frac{1}{8} \times 1\frac{1}{8}$ "Wire Hole  $1\frac{1}{8} \times 1\frac{1}{8}$ "Wire Hole  $1\frac{1}{8} \times 1\frac{1}{8}$ "Wire Hole  $1\frac{1}{8} \times 1\frac{1}{8}$ "Wire Hole  $1\frac{1}{8} \times 1\frac{1}{8}$ "

## Peirce Corner Irons

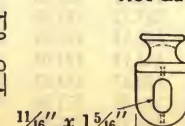
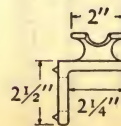
## Hot Galvanized

Attached by  $\frac{5}{16}$ -inch screws or expansion bolts. Made of 12-gage, 1-inch steel.



## No. 4470 Hubbard Neutral Wire Brackets

## Hot Galvanized



Wire size,  $\frac{1}{2}$ -inch or under. Mounting bolt hole size,  $\frac{5}{8}$ -inch. Length of pole bearing surface,  $2\frac{3}{8}$  inches.

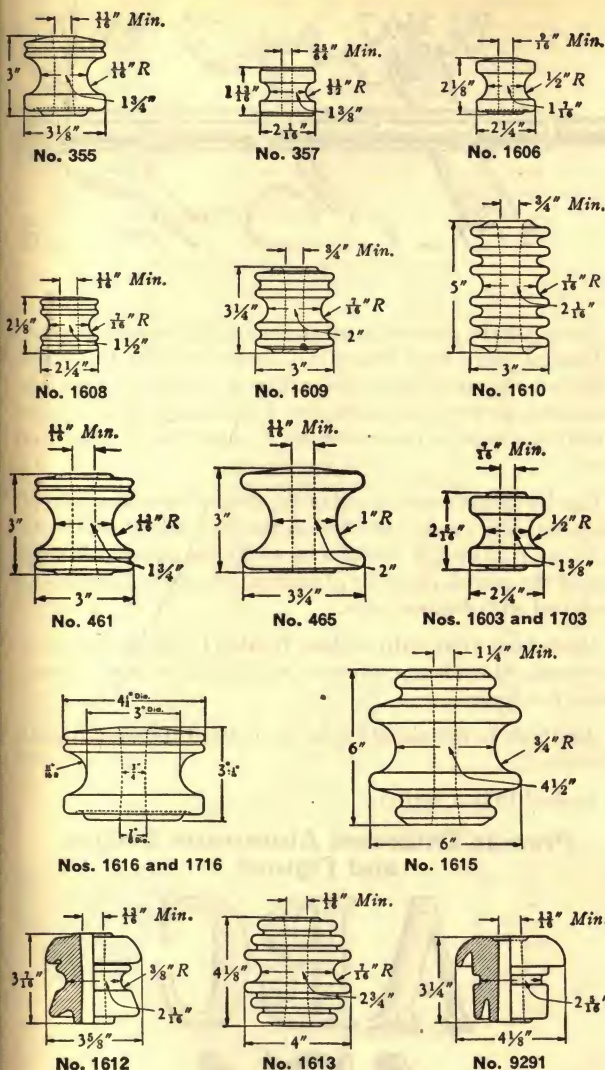
Approx. ship. wt. per 100, 105 pounds.

No. 4470.....per 100 \$71.24



## Peirce Spool Insulators

Wet and Dry Process Porcelain and Glass



No.	Per 100	Color of Glaze	Type of Porcelain	Overall Length Inches	Approx. Ship. Wt. Lb. per 100
355	\$26.57	Brown	Dry Process	3	130
355-W	26.57	White	Dry Process	3	130
455	29.73	Brown	Wet Process	3	130
357	12.72	Brown	Dry Process	1 13/16	44
461	.....	Brown	Wet Process	3	118
465	43.99	Brown	Wet Process	3	165
1603	15.37	Brown	Dry Process	2 5/16	48
1703	.....	Brown	Wet Process	2 5/16	48
1606	15.37	Brown	Dry Process	2 1/8	70
1606-W	15.37	White	Dry Process	2 1/8	70
1706	21.33	Brown	Wet Process	2 1/8	70
1608	21.33	Brown	Wet Process	2 1/8	55
1609	33.43	Brown	Wet Process	3 1/4	132
1610	199.42	Brown	Wet Process	5	275
1612	63.87	Brown	Wet Process	3 7/8	149
1613	80.00	Brown	Wet Process	4 1/8	275
1615	300.45	Brown	Wet Process	6	495
1616	.....	Brown	Dry Process	3 1/8	335
1716	61.73	Brown	Wet Process	3 1/8	335

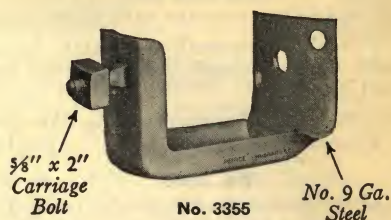
## Glass Double Skirt Style

No.	Per 100	Color of Glass	Overall Length Inches	Approx. Ship. Wt. Lb. per 100
9291	\$120.19	Colorless or Green	3 1/4	193

## Peirce Extension Brackets

For Secondary Racks

Hot Galvanized



Used for mounting secondary racks when a greater extension from the supporting structure is desired than the rack itself offers.

Made in two styles, with flat and curved backs, for wall and pole use respectively. Both styles have one 1/16-inch hole and two 9/16-inch holes for mounting.

Made of No. 9 gage steel to provide a 6-inch extension, and a 4-inch bearing on the pole or wall.

Equipped with one 5/8x2-inch carriage bolt.

Also has two 3/8-inch holes in bottom (one at each end) to allow water to drain out.

No.	Per 100	Style	MOUNTING HOLES DIAMETER, INCHES Center	Side	Approx. Ship. Wt. Lb. per 100
3355	\$85.62	Curved Back, For Poles..	1 1/16	9/16	286
3356	85.62	Flat Back, For Walls.....	1 1/16	9/16	286

## Hubbard Insulator Hook Bolts

Hot Galvanized



No. 642

Used on rural secondary lines.

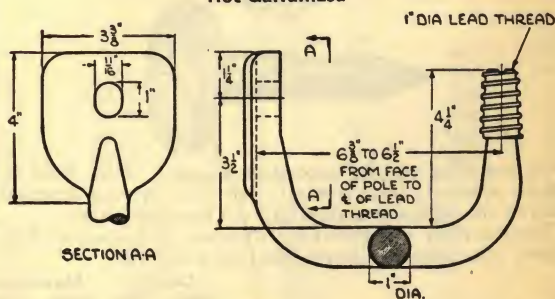
Furnished with a square section as a wrench hold just above the base as well as a shoulder under the base to prevent the hook bolt from turning while tightening.

Also furnished with square washer and M.F. locknut.

No.	Per 100	A Lgh. of Shank	B Extension From Pole	C	D	E	Approx. Ship. Wt. Lb. per 100
642	\$106.50	8	6 3/8	4 5/8	3/4	2 1/2	320
643	107.75	9	6 3/8	4 5/8	3/4	2 1/2	330
644	109.00	10	6 3/8	4 5/8	3/4	2 1/2	336

## No. 169 Peirce Pole Brackets

Hot Galvanized



No.	Per 100	Mounting Hole Size Inches	Extension Inches	Thread Diameter Inches	Approx. Ship. Wt. Lb. per 100
169	\$170.51	1 1/16x1	6 1/2	1	400



**Pierce Insulated Telephone Knob Screws**

Hot Galvanized

**No. 2919**

Porcelain knob used generally for running telephone wires along the sides of buildings.

Provided with small white glaze insulator No. 2917. Overall length, 3 inches. Size screw, No. 11x1 $\frac{1}{8}$  inches.

No. 2919, with Insulators, Ship. Wt. 11

Pounds.....per 100 \$23.39

**No. 2920**

May be used for dead-ending duplex or twisted pair telephone wires. Also as a service attachment for low voltage power lines in localities not visited by snow and sleet.

Provided with large brown glaze insulator No. 2927. Overall length, 4 $\frac{1}{4}$  inches. Size screw, No. 22x2 $\frac{1}{2}$  inches.

No. 2920, with Insulators, Ship. Wt. 48 Pounds  
.....per 100 \$33.12

**Pierce Primary Lead Wireholders**

A wet process porcelain wireholder so designed that it has sufficient leakage distance for primary voltages.

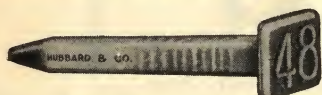
Either style may be used in the arm or pole. Unless otherwise specified No. 1650 will be furnished with cemented-in screw. If desired that screws be leaded in, specify by adding the letter L after the number.

**No. 1660****No. 1650**

Diameter of wire hole, 1 inch.

No.	Size Screw	Kind of Screw	Ext. Base to Ctr. Wire Hole, In.	Ship. Wt. Lb. per 100
1650	No. 22x2" Wood	Everdur	3 $\frac{1}{2}$	110
1660	$\frac{1}{2}$ "x3" G.P. Lag	Galv. Steel	5 $\frac{1}{2}$	265

Prices upon application.

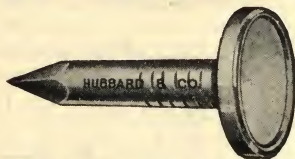
**Hubbard Pole Dating Nails**

Used for indicating the year or pole heights. Any two numerals may be ordered.

Square head,  $\frac{9}{16}$ -inch. Square shank,  $\frac{1}{4}$ -inch. Length, 2 $\frac{1}{2}$  inches.

Approximate shipping weight per 100 pieces, 5.5 pounds.

No.	Per 100	Stamped No.	No.	Per 100	Stamped No.	No.	Per 100	Stamped No.
1900	\$3.16	Blank	1940	\$3.16	40	1946	\$3.16	46
1915	3.16	15	1941	3.16	41	1947	3.16	47
1920	3.16	20	1942	3.16	42	1948	3.16	48
1925	3.16	25	1943	3.16	43	1949	3.16	49
1930	3.16	30	1944	3.16	44	1950	3.16	50
1935	3.16	35	1945	3.16	45	1955	3.16	55

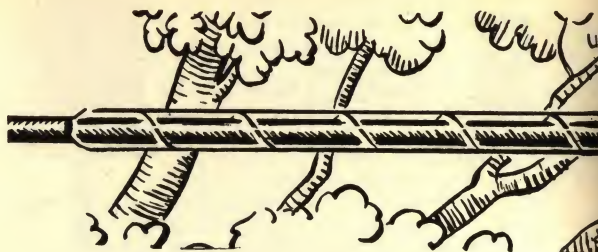
**Hubbard Pole Markers**

Any marking will be quoted on request. Nos. 6000 and 7006 are specially heat treated to provide driving strength. A heavy rim protects stamping from hammer blows.

Consecutively numbered markers are furnished with depressed numerals, all other characters in relief.

No.		Copper		Aluminum	
		2000	7000	6000	7006
	Overall Length.....inches	2	2	2	2
	Diameter Head.....inches	1	1 $\frac{1}{4}$	1	1 $\frac{1}{4}$
	Diameter Shank.....inches	.298	.328	.298	.328
	Ship. Wt. per 100.....pounds	8.0	9.5	2.5	3.0

Prices upon application.

**Plastic Tree Wire Guard**

For auxiliary protection on power and light conductor or telephone drop wire where it is impracticable to obtain adequate clearance from trees making it necessary to protect conductor or wire from abrasion. Particularly useful where conditions require protection on a considerable length of wire.

Can be thread over an end of the drop wire at the time of installation or can be spiralled on the wire after it is already in place. It is held in position by an S clamp placed at each end of the guard, or series of guards, or can be fastened at each end with friction tape.

Made from a flat strip of clear Tenite II (cellulose acetate butyrate) which is wound into a close helix to form a guard three feet long.

Available in five sizes;  $\frac{3}{8}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ , 1, and 1 $\frac{1}{4}$  inches (inside diameter).

Packed 10 in a carton.

**Premax Embossed Aluminum Letters and Figures**

Made of 99% pure aluminum rolled especially for this purpose, will neither rust, tarnish nor corrode. Plain finish. Being perfectly smooth, letters and figures do not catch or hold dirt.

Standard packing, 100 per carton.

Size Inches	Type	Size Inches	Type
$\frac{1}{2}$	Roman	2	Roman
$\frac{3}{4}$	Roman	3	Roman
1	Roman	4	Roman
1 $\frac{1}{2}$	Roman	6	Roman
1 $\frac{1}{2}$	Gothic (Figures only)	..	.....

**Escutcheon Pins and Eyelets**

Size Inches	Description	No. per Pound
1	No. 15 Galvanized Steel.....	900
1	No. 15 Brass.....	700
$\frac{3}{4}$	No. 15 Brass.....	950
$\frac{5}{8}$	No. 15 Brass.....	1100
$\frac{5}{8}$	No. 15 Cadmium Plated Steel.....	1200

Smaller or special sizes of pins furnished on request.



## Reliable Solderless Connectors



Reliable Connectors are available for use with all types of conductors. Tap connectors for copper, copperweld, aluminum and steel conductors and for guy strand are designed with precision threads to maintain high pressure solderless connections.

Made of 90% copper high strength bronze. The bronze connectors resist corrosion and are not subject to season cracking.

## Forged Bolt

## For Copper and Copperweld Wires

No.	Per 100	A.W.G. Solid	A.W.G. Strand	Copper-Weld	Std. Pkg.	Ship. Wt. Lb. per 100
*9F	\$13.50	9	10	...	100	2
*9FW	14.50	9	10	...	100	1 1/2
6F	18.00	6	8	8A	100	6 1/2
4F	22.00	4	6	6A	100	9 1/2
2F	31.00	2	3	4A	100	13
1F	34.00	1	2	...	100	16

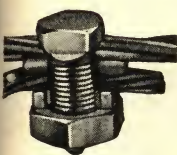
## Machined Bolt

## For Copper and Copperweld Wires

No.	Per 100	A.W.G. Solid	A.W.G. Strand	Copper-Weld	Std. Pkg.	Ship. Wt. Lb. per 100
*104V	\$13.50	9	10	...	100	3
*128V	16.50	8	8	...	100	4 1/2
*165V	18.00	6	8	8A	100	7 1/2
*206V	22.00	4	6	6A	100	9
260V	31.00	2	3	4A	100	12
292V	34.00	1	2	...	100	13
373V	45.00	2/0	1/0	...	50	22
418V	74.00	3/0	2/0	...	25	32
528V	126.00	4/0	4/0	...	25	62
679V	254.00	...	350MCM	...	12	70
813V	338.00	...	500MCM	...	12	115
996V	632.00	...	750MCM	...	6	170
1152V	692.73	...	1000MCM	...	6	266

## Plated

## For Galvanized Steel Wire to Copper Wire



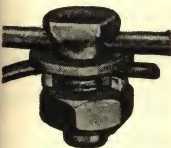
No.	Per 100	STEEL Sol.	STEEL Str.	COPPER Sol.	COPPER Str.	Std. Pkg.	Ship. Wt. Lb. per 100
*109W	\$16.50	12	..	9	100	2 1/2	
165GC	26.00	8	..	6	100	7 1/2	
206GC	34.00	6	8	4	100	10	
260GC	36.00	4	6	2	100	14	
292GC	43.00	5/16	4	1	100	16 1/2	
373GC	53.00	3/8	..	2/0	50	23	

## For Two Galvanized Steel Wires

No.	Per 100	STEEL Sol.	STEEL Str.	Slot Size Inches	Std. Pkg.	Ship. Wt. Lb. per 100
*109	\$15.75	12	..	.109	100	2
165G	24.00	8	..	.165	100	6 1/2
206G	30.00	6	8	.206	100	9
260G	33.00	4	6	.260	100	12
292G	40.00	5/16	4	.312	100	15
373G	50.00	3/8	..	.378	50	21

\*For telephone and signal lines. Washer. For use on 3 wires.  
Nos. 165 to 373 supplied with nut retainer when specified on order. No. 6 Sol. to 500 MCM furnished with spacers for use on stranded conductors, both forged and machined bolt type, at additional cost.

## Reliable Signal Line Connectors



Cannot be distorted with a standard telephone socket wrench. All edges are rounded to prevent line wire damage. Vibration-proof threads eliminate loose connections.

## Bronze For Copper to Copper

No.	Per 100	Max. Wire Size B&S	Std. Pkg.
9F	\$13.50	9	100
*9FW	14.50	9	100
128V	16.50	8	100

\*With washer.

## Plated Bronze For Iron to Iron

No.	Per 100	Max. Wire Size Steel B.W.G.	Std. Pkg.
109	\$15.75	12	100
*109W	\$16.50	12	100

## For Iron to Iron

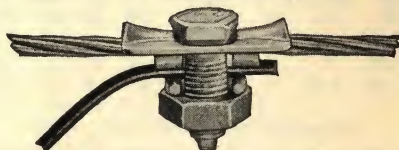
## Reliable Service Entrance Connectors For Copper Wires



Service entrance connectors may also be used on transformer leads, lightning arrester grounds, or wherever two wires, not under tension, are connected end to end.

No.	Per 100	WIRE SIZE A.W.G. Maximum	WIRE SIZE A.W.G. Minimum	Std. Pkg.	Ship. Wt. Lb. per 100
68SE	\$10.00	2-No. 6 Str.	2-No. 10 Sol.	100	2
46SE	13.00	2-No. 4 Str.	2-No. 8 Sol.	100	3 1/2
68A	10.00	2-No. 6 Str.	2-No. 10 Sol.	100	2 1/2
46A	13.00	2-No. 4 Str.	2-No. 8 Sol.	100	4

## Reliable Aluminum Connectors For Aluminum, Amerduct, or Steel Wires



## Aluminum to Copper or Steel to Copper With Bimetal Separator and One Bell-Mouth Washer

No.	Per 100	STEEL Sol.	STEEL Str.	COPPER Sol.	COPPER Str.	Std. Pkg.	Ship. Wt. Lb. per 100
6ALCW	\$32.22	6	6	8	6	100	6
4ALCW	38.90	4	4 1/4	6	4	100	6 1/2
2ALCW	46.47	2	5/16	4	3	100	7 1/2
10ALCW	93.46	1/0	3/8	2	1	25	18

## Aluminum to Aluminum or Steel to Steel

No.	Per 100	STEEL Sol.	STEEL Str.	COPPER Sol.	COPPER Str.	Std. Pkg.	Ship. Wt. Lb. per 100
6AL	\$30.00	6	6	8	6	100	5
4AL	37.00	4	4 1/4	6	4	100	6
2AL	45.00	2	5/16	4	4	100	7
10AL	90.00	1/0	3/8	2	2	25	16

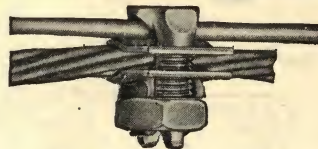
## \*Aluminum to Aluminum—With Two Washers

No.	Per 100	STEEL Sol.	STEEL Str.	COPPER Sol.	COPPER Str.	Std. Pkg.	Ship. Wt. Lb. per 100
6ALW	\$33.00	6	6	8	6	100	6
4ALW	41.00	4	4 1/4	6	4	100	6 1/2
2ALW	49.00	2	5/16	4	4	100	9 1/2
10ALW	98.00	1/0	3/8	2	2	25	18

## †Aluminum to Steel With Aluminum Separator

No.	Per 100	STEEL Sol.	STEEL Str.	COPPER Sol.	COPPER Str.	Std. Pkg.	Ship. Wt. Lb. per 100
6ALS	\$32.22	6	6	8	6	100	5 1/2
4ALS	38.90	4	4 1/4	6	4	100	6 1/2
2ALS	46.47	2	5/16	4	4	100	7 1/2
10ALS	93.46	1/0	3/8	2	2	25	18

## Reliable Universal Connectors For Copper to Steel or Aluminum



No.	Per 100	MAXIMUM WIRE SIZE A.W.G. A.W.G. Solid Strand	Slot Size Inches	Std. Pkg.	Ship. Wt. Lb. per 100
6FU	\$18.00	6 8	.168	100	7
4FU	21.50	4 6	.218	100	10
2FU	29.50	2 3	.272	100	13 1/2
1FU	32.00	1 2	.316	100	16 1/2

## Bimetal Separator Only

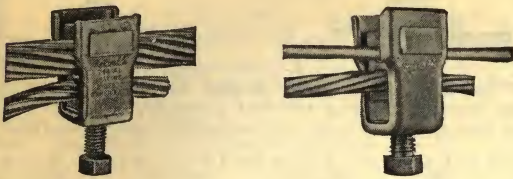
No.	Per 100	For Connector	Std. Pkg.	Ship. Wt. Lb. per 100
4774	\$2.00	6FU	100	1 1/2
4775	2.00	4FU	100	1 1/2
4776	2.00	2FU	100	1 1/2
4777	2.00	1FU	100	1 1/2

\*When furnished with one bell-mouth washer only, deduct 5 per cent from prices.

†Suffix W to number if bell-mouth washer is desired, and add 5 per cent to prices.



## Reliable Flip-On Tap Clamps



## For ACSR Over Armor Rods to Aluminum or Steel Taps

No.	Per 100	WIRE SIZE										Std. Pkg.	Ship. Wt. Lb. per 100
		LINE SIDE				TAP SIDE							
		ACSR		SIZE, IN.	In.	ACSR		SIZE, IN.	In.				
		OVER Max.	ARMOR Min.			Max.	Min.			Max.	Min.		
438AL	\$21.30	...	...	7/16	1/4	2	8	3/8	1/8	50	24		
555AL	21.30	4	8	1/2	3/8	4	8	1/4	5/64	50	24		
744AL	41.40	1/0	4	3/4	7/16	1/0	4	3/8	3/16	25	45		

## For ACSR Over Armor Rods, or Steel to Copper Taps

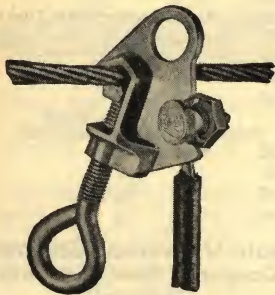
438ALC	\$29.30	...	...	7/16	1/4	*2	*10	3/8	1/8	50	24
555ALC	29.90	4	8	1/2	3/8	*4	*12	1/4	5/64	50	24
744ALC	41.40	1/0	4	3/4	7/16	*1/0	*6	3/8	3/16	25	45

## For Copper or Copperweld to Steel Guys or Aluminum Taps

438CUG	\$29.30	1/0	6	3/8	1/8	2	4	7/16	1/4	50	24
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\*Copper.

## Reliable Hot Line Clamps



## Bronze

## For Copper or Copperweld Wires

For Copper or Copperweld Wires										Ship.
No.	Per 100	WIRE SIZE A.W.G.								Wt. Lb.
		LINE SIDE				TAP SIDE				Std. Pkg.
		Maximum	Minimum	Maximum	Minimum	Maximum	Minimum			
328C	\$74.75	1 Str.	6 Sol.	1 Str.	6 Sol.	1 Str.	6 Sol.	25	44	
596C	98.90	4/0 Str.	6 Sol.	1 Str.	6 Sol.	1 Str.	6 Sol.	20	58	

## Plated Bronze

## For Galvanized Steel, ACSR, or Copper Wires

328CP	\$79.35	2 ACSR	8 ACSR	2 ACSR	8 ACSR	2 ACSR	8 ACSR	2 ACSR	8 ACSR	25	44
		1 Str. Cu.	6 Sol. Cu.	6 Sol. Cu.	6 Sol. Cu.	6 Sol. Cu.	6 Sol. Cu.	6 Sol. Cu.	6 Sol. Cu.		
		4 Str. Steel	8 Str. Steel	8 Str. Steel	8 Str. Steel	8 Str. Steel	8 Str. Steel	8 Str. Steel	8 Str. Steel		
596CP	105.80	2 ACSR	8 ACSR	2 ACSR	8 ACSR	2 ACSR	8 ACSR	2 ACSR	8 ACSR	20	58
		Over Armor	6 Sol. Cu.	1 Str. Cu.	6 Sol. Cu.	1 Str. Cu.	6 Sol. Cu.	1 Str. Cu.	6 Sol. Cu.		
		4/0 Str. Cu.		4 Str. Steel	8 Str. Steel	4 Str. Steel	8 Str. Steel	4 Str. Steel	8 Str. Steel		

## Aluminum Heat Treated

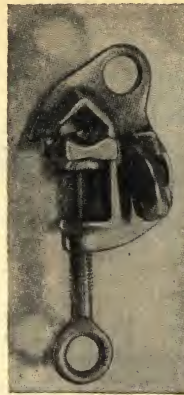
## For ACSR Over Armor Rods or Steel Wires—Copper Taps

596AC	\$98.90	2 ACSR	8 ACSR	2 ACSR	8 ACSR	2 ACSR	8 ACSR	2 ACSR	8 ACSR	20	9
		Over Armor		Over Armor		Over Armor		Over Armor			

## For ACSR Over Armor Rods or Steel Wires—ACSR or Steel Taps

596A	\$98.90	2 ACSR	8 ACSR	2 ACSR	8 ACSR	2 ACSR	8 ACSR	2 ACSR	8 ACSR	20	9
		Over Armor		Over Armor		Over Armor		Over Armor			

## Chance Perma-Grip Tap Off Clamps



Carefully, scientifically proportioned to give proper electrical conductivity, maximum mechanical strength, and symmetrical appearance. Current carrying capacity is in proportion to that of the maximum jumper wire for which each clamp is designed.

Tests reveal a minimum yield point of 165 inch-pounds and an ultimate strength in excess of 260 to 500 inch-pounds (depending on size) applied torque on eye screw.

Gripper is designed for three-point contact with the conductor.

U.S.S. threads on the high strength bronze eye screw permit quick, easy application, and a tight positive grip with greatly minimized danger of sticking due to corrosion.

Clamps with S.A.E. threads available on request. If hex screws are wanted, specify on order.

TYPE CC. Copper to copper connection.

TYPE CA. Copper to aluminum connection.

TYPE GP. General purpose connection.

TYPE AA. Aluminum to aluminum connection.

TYPE AC. Aluminum to copper connection.

## No. S1725

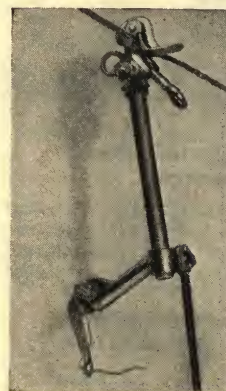
Type	MAIN LINE WIRE SIZES				JUMPER WIRE SIZES				Wt. Lb. per 100
	MAXIMUM		MINIMUM		MAXIMUM		MINIMUM		
	Size	Dec. Eqv.	Size	Dec. Eqv.	Copper	ACSR	Copper	ACSR	
CC			No. 6						64
CA	2/0 Str.	.414	Sol.	.162	2 Str.	3			65
GP	Copper		Copper		2 Str.	3			64
AA	6 ACSR					3			39
AC	with Armor	.434	No. 8	.158	2 Str.				40
GP	1/0 ACSR		ACSR		2 Str.	3			
	No Armor	.398							64

## No. S1730

CC			No. 4		2/0 Str.				95
CA	300M CM	.629	Sol.	.2043	2/0 Str.	1/0	No. 6		96
GP	Str. Copper		Copper			1/0	No. 6	8	95
							Sol.	8	
AA	2 ACSR					1/0	No. 6	8	55
AC	with Armor	.595			2/0 Str.		Sol.		56
GP	266,800 CM		No. 6	.198	2/0 Str.	1/0	No. 6	8	95
	ACSR No	.642	ACSR				Sol.		
	Armor								

## Chance Fused Tap Clamps

## 50-Ampere Capacity



Used where a fused protective device is required for transformer installations or branch line taps on 2300 to 15,000-volt lines. Provides protection for rural line tap-offs. Easily installed and removed with a clamp stick.

Has high rupturing capacity, ample flashover value, and positive vibrationproof contact. Designed to extract fuse links and thus reduce arcing with its charring effect inside fuse tube.

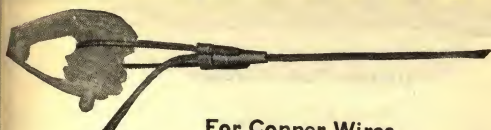
Tapper is provided with a Tips Snap Clamp. The fuse tube is a lightweight, corrosion-resisting, waterproof, laminated plastic of great mechanical strength. Fiber lining quenches arc.

Type of connection: No. S1630-CC, copper to copper; No. S1630-AC, aluminum to copper.

No.	WIRE SIZES		Weight Pounds
	Main Line	Jumper	
S1630-CC	4/0 Str. Copper	No. 2 Str. Copper	2¼
S1630-AC	3/0 ACSR.	No. 2 Str. Copper	2¼



### Reliable Flexible Clevis Type Straight-Thru Dead Ends



#### For Copper Wires

No.	Per 100	MAXIMUM WIRE SIZE, A.W.G.			Std. Pkg.	Ship. Wt. Lb. per 100
		Solid	7 or 19 Strand	3 Strand		
61FD	\$37.10	6	8	...	50	22
41FD	43.15	4	6	6	50	24
21FD	55.15	2 and 3	3 and 4	4	25	70
27FD	57.80	1	2	3	25	74
101FD	69.50	1/0	1	2	25	107
107FD	70.70	2/0	1/0	1	25	114
207FD	103.95	3/0	2/0	1/0	10	151
307FD	130.75	4/0	3/0	...	10	176
407FD	130.75	...	4/0	...	10	202
250FD	140.95	...	{4/0-12 Str.}	...	10	206

#### For Copperweld Wires—Type A

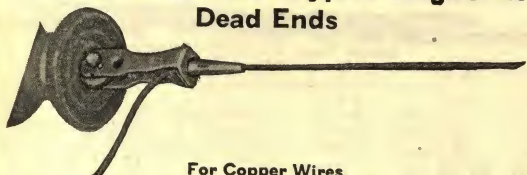
8AFD	\$54.00	...	8A	...	25	72
6AFD	61.20	...	7A or 6A	10	25	80
4AFD	75.60	...	4A	8	25	99

#### For Amerduct or Anaconda Composite Conductors

No.	Per 100	MAXIMUM WIRE SIZE			Std. Pkg.	Ship. Wt. Lb. per 100
		Amerduct SCP-SCG	Anaconda	B.W.G. 3 Strand Steel		
8AMFD	\$54.00	8	...	...	25	72
6AMFD	61.20	8X & 6	631	...	25	80
4AMFD	75.60	4	477	4	25	99

For deadending No. 4 3-Strand Steel use No. 4AMFD.

### Reliable Long Clevis Type Straightline Dead Ends



#### For Copper Wires

No.	Per 100	MAXIMUM WIRE SIZE, A.W.G.			Std. Pkg.	Ship. Wt. Lb. per 100
		Solid	7 or 19 Strand	3 Strand		
61LD	\$49.20	6	8	...	50	88
41LD	51.30	4	6	6	50	90
21LD	57.40	2 & 3	3 & 4	4	25	190
27LD	78.00	1	2	3	25	194
101LD	87.95	1/0	1	2	25	210
107LD	87.95	2/0	1/0	1	25	214
207LD	90.70	3/0	2/0	1/0	10	258
307LD	124.50	4/0	3/0	...	10	270
407LD	124.50	...	4/0	...	10	298
250LD	129.30	...	{4/0-12 Str.}	...	10	302

#### For Copperweld Wires—Type A

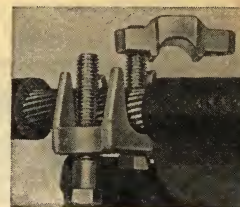
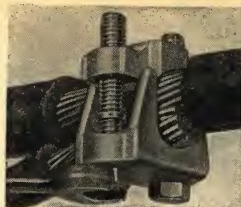
ALD	\$70.50	...	8A	9	25	212
ALD	75.90	...	7A or 6A	10	25	214
ALD	81.85	...	4A	8	25	216

#### For Amerduct or Anaconda Composite Conductors

No.	Per 100	WIRE SIZE			Std. Pkg.	Ship. Wt. Lb. per 100
		Amerduct SCP-SCG	Anaconda	B.W.G. 3 Strand Steel		
MLD	\$70.50	12	...	...	25	205
MLD	70.50	8	...	...	25	212
MLD	75.90	6-8X	631	...	25	214
MLD	81.85	4	477	4	25	216

Can be furnished with extra long, 13-inch, clevis; suffix LD to number and add \$23.00 per 100 to prices.

### Matthews Uniclamp Connectors



For connecting large size copper or aluminum wires from No. 2/0 to 1000 MCM. Non-separable parts permit ease of installation on energized lines with standard hot line tools and socket attachments.

#### \*For Copper to Copper Connections

No.	Per 100	Max. Rated Gage of Wires, Strand		Max. Rated Gage of Aluminum Wires, ACSR	Std. Pkg.	Shipping Weight, Pounds per 100
		Copper Wires	Aluminum Wires			
0-UC	\$73.80	1/0	...	...	25	20
00-UC	102.60	2/0	...	...	25	27
0000-UC	165.60	4/0	...	...	12	55
35-UC	324.00	350MCM	...	...	6	100
50-UC	378.00	500MCM	...	...	6	120
75-100-UC	756.00	750-1000MCM	...	...	1	200

#### \*Plated—For Aluminum Connections

No.	Per 100	Max. Rated Gage of Wires, Strand		Max. Rated Gage of Aluminum Wires, ACSR	Std. Pkg.	Shipping Weight, Pounds per 100
		Copper Wires	Aluminum Wires			
0-UC-A	\$81.00	1/0	...	...	25	20
00-UC-A	115.20	2/0	...	...	25	27
0000-UC-A	189.00	4/0	...	...	12	55
35-UC-A	360.00	350MCM	...	...	6	100
50-UC-A	424.80	500MCM	...	...	6	120
75-100-UC-A	850.00	750-1000MCM	...	...	1	200

Plated with Plated Spacer Bar—Plating Removed from One Clamping Recess for Copper to Aluminum Connections

No.	Per 100	Max. Rated Gage of Wires, Strand		Max. Rated Gage of Aluminum Wires, ACSR	Std. Pkg.	Shipping Weight, Pounds per 100
		Copper Wires	Aluminum Wires			
W-0-UC-A	\$91.80	1/0	...	...	25	24
W-00-UC-A	129.60	2/0	...	...	25	33
W-0000-UC-A	207.00	4/0	...	...	12	64
W-35-UC-A	405.00	350MCM	...	...	6	111
W-50-UC-A	473.40	500MCM	...	...	6	133
W-100-UC-A	946.00	750-1000MCM	...	...	1	218

\*If spacer bars are required, add 15 per cent to prices.

### Reliable Straightline Splice Reducers



For copper wire combinations. Make it possible to change wire size without a double dead end.

#### For Copper Wires

No.	Per 100	WIRE SIZE, A.W.G.				Ship. Wt., Lb. per 100
		LARGE END		SMALL END		
		Solid	7 or 19 Strand	Solid	7 or 19 Strand	
4161	\$38.20	4	6	6	8	24
2161	45.00	2 & 3	3 & 4	6	8	25
2141	45.00	2 & 3	3 & 4	4	6	36
2761	52.50	1	2	6	8	30
2741	52.50	1	2	4	6	34
2721	52.50	1	2	2 & 3	3 & 4	40
10121	62.35	1/0	1	2 & 3	3 & 4	40
10127	62.35	1/0	1	1	2	41
10721	68.90	2/0	1/0	2 or 3	3 or 4	43
10727	68.90	2/0	1/0	1	2	44
10741	68.90	2/0	1/0	4	6	56
107101	68.90	2/0	1/0	1/0	1	63
20721	78.75	3/0	2/0	2 & 3	3 & 4	64
20727	78.75	3/0	2/0	1	2	65
207101	78.75	3/0	2/0	1/0	1	66
207107	78.75	3/0	2/0	2/0	1/0	72
307207	98.45	4/0	3/0	3/0	2/0	80
407107	116.80	...	4/0	2/0	1/0	85
407207	116.80	...	4/0	3/0	2/0	90
407307	116.80	...	4/0	4/0	3/0	106
250407	129.30	...	250MCM	...	4/0	151

#### For Copperweld Wires—Type A

6A8A	\$63.40	7A or 6A	...	8A	60
6A27	63.40	7A or 6A	1	2	50



## Reliable Straightline Splices

All splices have screw driver slot release.

### For Copper Wire



The straightline splice will break soft, medium, or hard drawn copper, solid, three-strand, or seven-strand at approximately its full strength.

No.	Per 100	MAXIMUM WIRE SIZE, A.W.G.—			Std. Pkg.	Wt., Lb. per 100	Ship. per 100
		Solid	7 or 19 Strand	3 Strand			
61	\$30.00	6	8	...	50	17	1 1/2
41	38.20	4	6	6	50	24	1 3/4
21	45.00	2 and 3	3 and 4	4	50	33	2
27	52.50	1	2	3	25	36	3
101	62.35	1/0	1	2	25	50	5
107	68.90	2/0	1/0	1	25	52	7 1/2
207	78.75	3/0	2/0	1/0	25	68	8 1/2
307	98.45	4/0	3/0	...	25	80	12
407	116.80	...	4/0	...	25	132	13
250	129.30	...	{4/0-12 Str.}	...	20	132	

### For Copperweld Wires

No.	Per 100	MAXIMUM WIRE SIZE, A.W.G.—		Std. Pkg.	Wt., Lb. per 100	Ship. per 100
		All Copperweld	Composite			
41	\$38.20	3 No. 12	8C, 9 1/2 D	50	22	
310CW	38.20	3 No. 12	.....	50	23	

### For Copperweld Wires—Type A



No.	Per 100	WIRE SIZE		Std. Pkg.	Wt., Lb. per 100	Ship. per 100
		Copperweld Type A	3 Strand Gage No.			
8A	\$55.75	8A	9	25	46	
6A	63.40	7A or 6A	10	25	60	
4A	73.00	4A	8	25	72	

### For Amerductor or Anaconda Composite Conductors Plated

No.	Per 100	MAXIMUM WIRE SIZE			Std. Pkg.	Wt., Lb. per 100	Ship. per 100
		Amerductor SCP-SCG	Anaconda	3 Strand Steel			
12AM	\$50.40	12	...	...	25	40	
8AM	53.10	8	...	...	25	56	
6AM	58.75	8X & 6	631	...	25	70	
4AM	66.25	4	477	4	25	85	

### No. 81RSC For Rural Steel Conductors



No.	Per 100	MAX. WIRE SIZE, B.W.G.:		Std. Pkg.	Wt., Lb. per 100	Ship. per 100
		Solid	3 Strand			
81RSC	\$66.80	8	...	25	30	

## Reliable Straightline Insulated Splices



With Clips

### For Copper Wires

Two Sizes, 1 and 3-Inch Insulation

Furnished with clips for attaching fuse or tap wires at extra cost.

No.	Per 100	MAXIMUM WIRE SIZE, A.W.G.			Insulated Length Inches	Std. Pkg.	Ship. per 100
		Solid	7 or 19 Strand	3 Strand			
61XM-1	\$117.85	6	8	...	1	25	24
41XM-1	143.25	4	6	6	1	25	28
61XM-3	.....	6	8	...	3	25	26
41XM-3	.....	4	6	6	3	25	30

### With Clips For Attaching Fuse or Tap Wires

No.	Per 100	MAXIMUM WIRE SIZE, A.W.G.			Insulated Length Inches	Std. Pkg.	Ship. per 100
		Solid	7 or 19 Strand	3 Strand			
61XMC-1	.....	6	8	...	1	25	24
41XMC-1	.....	4	6	6	1	25	28
61XMC-3	.....	6	8	...	3	25	26
41XMC-3	.....	4	6	6	3	25	30

## Reliable Splicing Sleeves



### Double Tube Copper

No.	Per 100	MAXIMUM WIRE SIZE			Length Inches	Std. Pkg.	Ship. per 100
		A.W.G. Solid	A.W.G. 7 Strand	B.W.G. NBS Solid			
S810	\$2.61	17	...	...	4	100	1 1/2
S811	2.64	16	...	...	4	100	1 3/4
S812	2.73	14	...	16	4	100	2
S813	2.85	12	...	14	4 1/2	100	3
S814	3.33	10	...	12	4 3/4	100	3
S815	4.99	9	...	11	5 1/4	100	5
S816	5.82	8	...	10	5 3/4	100	7 1/2
S817	6.42	7	8	9	5 3/4	100	8 1/2
S818	7.13	6	...	8	6 3/4	100	12
S820	11.52	4	5	6	6 3/4	100	13

Suffix H for half length sleeves and deduct 25 per cent per 100 from prices of Nos. S810 to S815; 40 per cent per 100 from prices of Nos. S816 to S820. Suffix T for tinned copper sleeves and add 20 per cent to prices of Nos. S816 to S820; \$.30 per 100 to prices of Nos. S810 to S815.

Combination sizes are available at \$.20 per 100 extra.

### Double Tube Tinned Steel

No.	Per 100	B.W.G. Solid	Length Inches	Std. Pkg.	Ship. per 100
S831	\$3.36	14	4 1/2	100	3
S832	3.60	12	4 3/4	100	3 1/2
S833	4.37	10	5 1/2	100	5 1/2
S834	6.19	9	5 3/4	100	6

Suffix H for half length sleeves and deduct 20 per cent from prices.

## Reliable Splicing Sleeves



### Single Tube Seamless Copper Grooved Oval Type

No.	Per 100	MAXIMUM WIRE SIZE			Length Inches	Std. Pkg.	Ship. per 100
		A.W.G. Solid Copper	A.W.G. 7 or 19 Strand Copper	COPPERWELD Composite or Type A			
S010	\$3.33	10	...	...	12	4	100
S011	4.99	9	...	...	11	5	100
S012	5.82	8	...	...	10	5	100
S013	7.13	6	...	...	8	6	100
S026	9.86	5	6	8C, 9 1/2 D	12	5	100
S014	12.95	4	5	8A	...	6	7 1/2
S015	15.21	3	4	6A or 7A	10	...	8 1/2
*S016	20.08	2	3	5A	8, 9 1/4	9 3/4	50
*S017	25.66	1	2	4A	7 1/2	11	50
*S018	36.12	1/0	1	3A	6 5/16	12 1/2	50
*S019	45.62	2/0	1/0	2A	5 3/8	14	25
*S020	63.68	3/0	2/0	...	7/16	16	20
*S021	97.77	4/0	3/0	...	1/2	18	10
S022	105.37	...	4/0	...	...	19 1/2	10
S023	124.50	...	250MCM	...	...	21	10
S024	149.92	...	300MCM	...	...	21 3/4	5
S025	262.55	...	500MCM	...	...	24	5

\*Suffix T to number and add 20 per cent to prices for tinned copper sleeves for galvanized steel wire and strand.

For 3-strand cables, use next larger size 7 or 19-strand sleeve.

### Single Tube Seamless Tinned Copper Sleeves 3-Strand Steel Wires

No.	Per 100	MAXIMUM WIRE SIZE			Length Inches	Std. Pkg.	Ship. per 100
		Amerductor SCG or SCP	B.W.G. Solid Steel	3 Strand Steel			
S030	\$16.50	8 and 12	6	8	8 3/4	50	16
S031	25.90	8X	...	...	11	50	33 1/2
S032	27.00	6	4	6	11 3/4	50	30
S033	46.50	4	...	4	13	50	55

For splicing type conductors: Amerductor SCG or SCP, Amersteel Type 3S, Crapo HTC-130, Ruralductor Type R3-A.



### Reliable Split Tinned Copper Cable Sleeves



No.	Per 1000	Wire Size, A.W.G. Strand	Solid	Length Inches	Std. Pkg.	Ship. Wt., Lb. per 1000
SC10	\$27.32	12	12	1 1/2	500	5
SC11	37.30	10	10	1 1/2	300	5
SC12	39.20	10	10	1 1/2	200	5 1/2
SC13	41.34	9	9	1 1/2	200	6 1/2
SC14	45.50	8	8	1 1/2	200	6 1/2
SC15	49.54	7	7	1 1/2	200	10
SC16	54.41	6	6	1 1/2	150	20
SC17	59.40	5	5	1 1/2	125	20
SC18	63.08	4	4	2	100	30
SC19	66.29	3	3	2	100	25
SC20	71.64	2	2	2	100	40
SC21	80.42	1	1	2	100	40
SC22	132.10	1/0		2	100	50
SC23	140.18	2/0		2	100	65
SC24	163.11	3/0		2	75	85
SC25	187.70	4/0		2 1/2	50	140
SC26	217.40	250MCM		2 1/2	50	150
SC27	236.53	300MCM		2 1/2	20	180
SC28	266.94	350MCM		2 1/2	20	240
SC29	351.17	400MCM		3	10	280
SC30	357.94	450MCM		3	10	320
SC31	364.48	500MCM		3	10	340
SC32	458.92	550MCM		3	10	410
SC33	577.49	600MCM		3 1/2	10	500
SC34	629.16	650MCM		3 1/2	10	520
SC35	653.16	700MCM		3 1/2	10	540
SC36	660.53	750MCM		3 1/2	10	600
SC37	741.55	800MCM		4	Bulk	620
SC38	819.72	850MCM		4	Bulk	690
SC39	886.01	900MCM		4	Bulk	750
SC40	967.51	950MCM		4	Bulk	840
SC41	1025.96	1000MCM		4 1/2	Bulk	1030
SC42	1493.67	1250MCM		4 1/2	Bulk	1200
SC43	1821.20	1500MCM		5	Bulk	1650
SC44	2269.91	1750MCM		5 1/2	Bulk	2100
SC45	3061.83	2000MCM		6	Bulk	2725
SC46	3743.39	2500MCM		6 1/2	Bulk	3300

### Reliable Telephone Drop Wire Clamps



An ideal device for attaching No. 17 B.&S. twisted pair or parallel drop wire to poles and buildings.

The clamp makes a very neat appearing installation. It is easy and quick to install. Two of them can be used to make an angular turn. Slack in drop wires can be taken up quickly without leaving any weak spots.

**The P Clamp** is wedge-shaped, with a copper wire loop at one end for hooking over a common drive hook, masonry hook or porcelain knob. When using twisted pair wire, it is essential to parallel the wires through the clamp.

**The R Clamp** for resistance braid (heavy duty drop wire) is the same design as the P clamp but is slightly larger.

No.	Per 100	Cable	CLAMP RANGE, IN. Max. Min.	Width In.	Bail Lgth. In.	Std. Pkg.	Ship. Wt. Lb. per 100
P	\$7.00	Twisted Pair or Parallel	.160 .140	.250	4	25	14
R	7.50	Twisted Pair or Parallel	.270 .250	.343	4	25	14

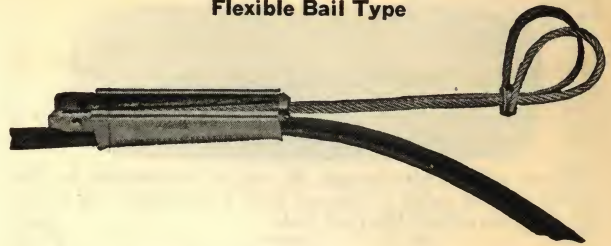
#### Steel Drive Hooks

Hot dipped galvanized, 7/16-inch diameter, 5 1/4 inches long. Shipping weight per 100, 26 pounds.

Per 100..... \$8.20

### Reliable Concentric Cable Clamps

#### Flexible Bail Type



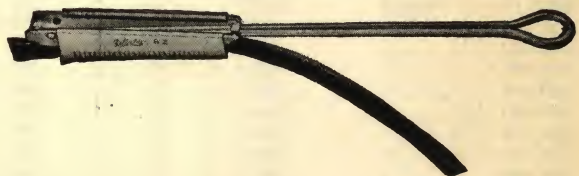
The concentric cable clamp is a low cost clamp that holds the cable securely under all conditions without bending or snubbing or otherwise damaging the insulation.

It is made of non-corrosive metals and has a large margin of strength over field requirements. It is easy to install and neat in appearance.

Round Conductor										Ship. Wt. Lb. per 100
No.	Per 100	Cable No.	Con- ductors	CLAMP RANGE, IN. Max. Min.	Width Inches	Bail Lgth. In.	Std. Pkg.			
82	\$36.00	8	2	.435 .355	.....	9	25	32		
62	38.00	6	2	.530 .405	.....	9	25	36		
22	46.00	2	2	.687 .625	.....	10	25	60		

Oval Conductor										Ship. Wt. Lb. per 100
No.	Per 100	Cable No.	Con- ductors	CLAMP RANGE, IN. Max. Min.	Width Inches	Bail Lgth. In.	Std. Pkg.			
83	\$43.00	8	3	.450 .350	.770	9	25	42		
63	47.00	6 or 8	3	.580 .450	.900	10	25	50		
63A	47.00	6 or *8	3	.620 .500	.900	10	25	50		
43	65.00	4	3	.720 .560	1.100	10 1/2	10	76		

#### Solid Bail Type



Round Conductor										Ship. Wt. Lb. per 100
No.	Per 100	Cable No.	Con- ductors	CLAMP RANGE, IN. Max. Min.	Width Inches	Bail Lgth. In.	Std. Pkg.			
82S	\$26.00	8	2	.435 .355	.....	6 1/2	25	34		
62S	29.00	6	2	.530 .405	.....	6 1/2	25	38		
22S	38.00	2	2	.687 .625	.....	7 1/2	25	62		

Oval Conductor										Ship. Wt. Lb. per 100
No.	Per 100	Cable No.	Con- ductors	CLAMP RANGE, IN. Max. Min.	Width Inches	Bail Lgth. In.	Std. Pkg.			
83S	\$35.00	8	3	.450 .350	.770	6 1/2	25	44		
63S	35.00	6 or 8	3	.580 .450	.900	6 1/2	25	52		
63AS	35.00	6 or *8	3	.620 .500	.900	6 1/2	25	52		
43S	50.00	4	3	.720 .560	1.100	6 1/2	10	78		

\*Armored.

### National Messenger Hangers



Non-breakable.

Strand Size.....	inches	5/16 or Smaller	3/8 or Larger
Stock No.....		404	405
Approx. Ship. Wt. per 100.....	pounds	150	150



## National Split Tinned Copper Connectors

For Splicing Underground Power Transmission Cables  
N.E.L.A. Specifications



Sleeve split entire length to enable hot solder to flow evenly around cable. Covered with a coating of tin to permit easy soldering. Beveled ends.

Size Conductor	Inside Diameter Inches	Length Inches	Approx. Shipping Wt., Lb. per 1000
12 B. & S. Solid	.086	1½	5
11 B. & S. Solid	.096	1½	5
10 B. & S. Solid	.107	1½	5
10 B. & S. Strand	.116	1½	5
9 B. & S. Solid	.119	1½	5½
8 B. & S. Solid	.133	1½	6
8 B. & S. Strand	.151	1½	6½
7 B. & S. Solid	.149	1½	6½
7 B. & S. Strand	.169	1½	7½
6 B. & S. Solid	.167	1½	8
6 B. & S. Strand	.189	1½	12
5 B. & S. Solid	.187	1½	12
5 B. & S. Strand	.211	1½	15
4 B. & S. Solid	.209	1½	15
4 B. & S. Strand	.237	2	20
3 B. & S. Solid	.234	2	20
3 B. & S. Strand	.265	2	25
2 B. & S. Solid	.263	2	25
2 B. & S. Strand	.297	2	35
1 B. & S. Solid	.294	2	35
1 B. & S. Strand	.337	2	40
0 B. & S. Strand	.378	2	50
00 B. & S. Strand	.423	2	65
000 B. & S. Strand	.475	2	85
0000 B. & S. Strand	.533	2½	125
250,000 C.M.	.581	2½	150
300,000 C.M.	.635	2½	180
350,000 C.M.	.690	2½	210
400,000 C.M.	.740	3	280
450,000 C.M.	.784	3	320
500,000 C.M.	.826	3	340
550,000 C.M.	.868	3	410
600,000 C.M.	.906	3½	500
650,000 C.M.	.948	3½	520
700,000 C.M.	.983	3½	540
750,000 C.M.	1.018	3½	580
800,000 C.M.	1.052	4	620
850,000 C.M.	1.083	4	690
900,000 C.M.	1.115	4	750
950,000 C.M.	1.145	4	840
1,000,000 C.M.	1.175	4½	1030
1,250,000 C.M.	1.320	4½	1200
1,500,000 C.M.	1.440	5	1650
1,750,000 C.M.	1.560	5½	2100
2,000,000 C.M.	1.664	6	2725
2,500,000 C.M.	1.855	6½	3300

## National Tinned Copper Cable Sleeves



Type S  
For Straight Splices

B&S Gage	Type S			Type D		
	Diam. Wire In.	Length In.	Approx. Ship. Wt. Lb. per 100	Diam. Wire In.	Length In.	Approx. Ship. Wt. Lb. per 100
16	.051	1½	.3	.051	1½	.5
15	.057	1½	.3	....	...	...
14	.064	1½	.4	.064	1½	.6
13	.072	1½	.4	.072	1½	.6
12	.080	1½	.4	....	...	...
10	.102	1½	.5	.102	1½	.75
9	.114	1½	.5	....	...	...

Type D  
For Butt Splices

## National Nicopress Splicing Sleeves

The Nicopress sleeves, for the splicing of copper, copper-weld, steel, and A.C.S.R. conductors, are easily installed, and the resultant splice, which is of permanently high conductivity, exceeds the rated strength of the conductor.

### Stock Number—Nicopress Sleeves

Every Nicopress sleeve has a stock number. This is of value to the customer as well as the manufacturer, in that the stock number, which consists of three parts, alludes to the material of which the sleeve is made, the diameter of the wire on which the sleeve is used, and the proper tool groove for compressing the sleeve.

The first section of the stock number identifies the metal of which the sleeve is made by means of any one of the numerals from 1 to 5. Numeral 1 designates copper sleeves, 2 designates galvanized copper sleeves, 3 designates bronze sleeves, 4 designates galvanized bronze sleeves, and 5 designates galvanized steel sleeves.

The middle section or next three numerals of the sleeve stock number denotes the decimal equivalent of the diameter of the wire for which the sleeve is suitable.

The third part, or letter, at the end of the sleeve stock number indicates the Nicopress tool groove required to properly compress the sleeve. The several Nicopress tool grooves or dies are identified and marked by a letter and any Nicopress sleeve whose stock number ends with that letter can be compressed in that particular tool groove.

### For Example: (Sleeve No. 1-162J)

- 1 Indicates Copper
- .162 Indicates Diameter of 6B & S Copper
- J Indicates Proper Tool Groove

### Stock Number—Nicopress Dead-Ends

The stock numbers of Nicopress dead-ends are practically the same as for the splicing sleeves except that they have a prefix of either 7 or 9. The figure 7 indicates that it is a suspension dead-end, and the figure 9 indicates that it is an offset type dead-end; thus 71-162J and 91-162J, respectively, are the stock numbers of the suspension and offset dead-ends.

## Nicopress Splicing Sleeves

### For Telephone Drop, Bridle, and Inside Wire



Completed Splice

Wire Size	Type	For Tool No.	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 200
19, 20, 22 B&S	Copper	17-2	3-036A	1½
17, 18 A.W.G.	Copperweld	17-2	3-045B	¾
17 B&S	Bronze	17-2	3-045B	¾
17, 18 B&S	Copper	17-2	3-045B	¾
16 B&S	Copper	17-2	3-051B	¾
16 A.W.G.	Copperweld	17-2	3-051B	¾
14 B&S	Copper	17-2	3-064B	¾
18, 19 B.W.G.	Ironite	17-2	4-049B	¾



### Nicopress Splicing Sleeves For Solid Copper Wire



Sleeve



Completed Splice

Wire Size B&S	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100	Wire Size B&S	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
12	C	1-080C	1 1/2	8	J	1-128J	4 1/2
12	D	1-080D	1 1/2	6	J	1-162J	4 1/2
10	C	1-102C	1 1/4	4	M	1-204M	6 3/4
10	D	1-102D	1 1/2	4	P	1-204P	6 3/4
10	E	1-102E	2	3	P	1-229P	7 1/4
9	D	1-114D	1 1/2	2	T	1-258T	11 3/4
9	E	1-114E	2	2	X	1-258X	14
8	E	1-128E	1 1/2	1	X	1-289X	13

### For Stranded Copper Wire

Wire Size B&S	Strands	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
8 B&S	7	J	1-128/7J	4 1/2
6 B&S	7	J	1-162/7J	4 1/4
4 B&S	7	M	1-204/7M	6 1/2
4 B&S	7	P	1-204/7P	7
2 B&S	7	T	1-258/7T	12 1/2
2 B&S	7	X	1-258/7X	13
1 B&S	7	E8	1-289/7E8	....
1 B&S	3	E8	1-289/3E8	....
...	3 No. 10 Copper	P	1-3/102P	7
...	3 No. 8 Copper	X	1-3/128X	26
...	3 No. 6 Copper	E8	1-3/162E8	....
1/0	7, 12 or 19	F6	1-325/7F6	34
2/0	7, 12 or 19	G3	1-365/7G3	45
3/0	7, 12 or 19	*G9	1-410/7G9	57
4/0	7, 12 or 19	*H5	1-460/7H5	62

\*No. 635 hydraulic tool necessary for these dies.

### For Copperweld



Sleeve



Completed Splice

Wire Size A.W.G.	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
14 Solid	C	1-064C	1 1/2
12 Solid	C	1-080C	1 1/2
12 Solid	D	1-080D	1 1/2
12 Solid	E	1-080E	2 1/2
10 Solid	J	1-102J	5
9 Solid	J	1-114J	3 3/4
8 Solid	M	1-128M	8 1/4
8 Solid	P	1-128P	13 1/2
6 Solid	P	1-162P	12 1/2
4 Solid	X	1-204X	24 1/2
3 No. 12	M	1-3/081M	8 1/2
3 No. 12	P	1-3/081P	13
3 No. 10	P	3-3/102P	13
3 No. 8	E8	3-3/128E8	....
3 No. 7	F6	3-7/102F6	42
8A	M	1-8A-M	12
8A	P	1-8A-P	15 1/2
7A	P	1-7A-P	15 1/2
6A	P	1-6A-P	15 3/4
4A	X	1-4A-X	26
2A	F6	3-2A-F6	....
8C	M	1-3/081M	8 1/2
8C	P	1-3/081P	13
9 1/2 D	M	1-3/081M	8 1/2
9 1/2 D	P	1-3/081P	13
8D	P	3-8D-P	....
6D	X	3-6D-X	....
2F	F6	3-7/102F6	42

### For High and Extra High Strength Copperweld Strand

Strand.....inches	5/16	11/32	3/8
Sleeve Stock No. ....	3-7/102F6	3-7/114G3	3-7/128H52
Hydraulic Tool Die..	F6	G3	H52

### Nicopress Splicing Sleeves For Steel Conductors

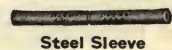
Wire Size B.W.G.	For Galvanized Wire	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
14	BB or 85	C	2-083C	1 1/2
14	BB or 85	C	5-083C	1 1/2
12	BB	C	4-109C	1 1/4
12	BB	C	5-109C	1 1/2
12	BB	D	2-109D	1 3/4
12	85	D	5-109D85	2
12	135	D	5-109D135	2 1/2
10	BB	J	2-134J	3
10	85	J	2-134J85	4 1/2
9	BB or 85	J	2-148J	4 1/2
8	BB	J	2-165J	4 1/2
8	130	L	5-165L	11 1/2
6	130	S	5-203S	16 1/2
4	130	W	5-238W	43
8	3 Str. 130	L	5-165/3L	11 1/2
6	3 Str. 130	S	5-203/3S	18 1/2
4	3 Str. 130	W	5-238/3W	35

### For Galvanized Steel Strand

Strand Inches	Type	No. 635 Hydraulic Tool Die	Sleeve Stock No.
5/16	Siemens Martin.....	*W	5-7/104W
5/16	High and Extra High Strength.	F92	5-7/104F92
3/8	Siemens Martin.....	F62	5-7/120F62
3/8	High and Extra High Strength.	G92	5-7/120G92
7/16	Siemens Martin.....	G92	5-7/145G92

\*Groove also available in Type No. 3 tool.

### For Aluminum Cable, Steel Reinforced (A.C.S.R.)



Steel Sleeve



Aluminum Sleeve

### Completed Splice

A.C.S.R. Size	Stranding	Stock Legend for Tool	Word for Splicing Unit	Approx. Ship. Wt., Lb. per 100
6	6/1	51-Apple	Apple	24
5	6/1	51-Apple	Grape	24
4	6/1	51-Orange	Orange	28
4	7/1	51-Orange	Tangerine	28
2	6/1	51-Peach	Peach	36
2	7/1	51-Peach	Pear	36
1/0	6/1	51-Plum	Plum	50

### For Amerductor

Wire Size SCP or SCG	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
12	P	2-12 SC-P	28
8	P	2-8 SC-P	25
8X	No. 51-JD5	25-8X-JD5	11
6	E5	2-6 SC-E5	58

### Nicopress Repair Sleeves For Replacing Defective Line Wire Joints



When cutting out defective joints in line wire, the ideal way to re-splice is with the Nicopress repair sleeve. The length and the design of this sleeve allows the wire to be re-spliced without having to change the initial line wire sag and eliminates the cutting in of a new section of wire.

### For Copper Wire

Wire Size	Tool Groove	Sleeve Length Inches	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
12B&S	C	7	R1-080C	6
12B&S	D	7	R1-080D	7 1/2
10B&S	C	7 1/2	R1-102C	5 1/4
10B&S	D	7 1/2	R1-102D	7 1/4
9B&S	D	8	R1-114D	7
9B&S	E	8	R1-114E	9
8B&S	E	8	R1-128E	8 1/2
6B&S	J	10	R1-162J	16 1/2

### For BB Iron Wire

Wire Size	Tool Groove	Sleeve Length Inches	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
14B.W.G.	C	7	R2-083C	6
12B.W.G.	C	7 1/2	R4-109C	5 1/2
12B.W.G.	D	7 1/2	R2-109D	7
10B.W.G.	J	8 1/2	R2-134J	16 1/2
9B.W.G.	J	9	R2-148J	16
8B.W.G.	J	10	R2-165J	16 1/2



### Nicopress Split Repair and Reinforcing Sleeves



By applying the Nicopress split repair sleeves or reinforcing sleeves to the damaged strands of A.C.S.R. or copperweld, conductivity and strength are re-established without the bother of cutting and re-splicing the conductor at the damaged point.

#### For Aluminum Cable Steel Reinforced—A.C.S.R.

A.C.S.R. Size	Repair Sleeve Length Inches	Tool Required	Approx. Ship. Wt., Lb. per 100
5 and 6	12	51-Apple	11
4	8	51-Orange	19
4	12	51-Orange	29
2	8	51-Peach	22
2	12	51-Peach	32
1/0	8	51-Plum	25
1/0	12	51-Plum	35

#### For Copperweld

Conductor Size	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
8A	P	RE1-8A-P	...
6A	P	RE1-6A-P	...
8C	P	RE1-3/081P	...
9 1/2 D			
3 No. 12			

### Nicopress Reducing Sleeves



#### For Copper Wire

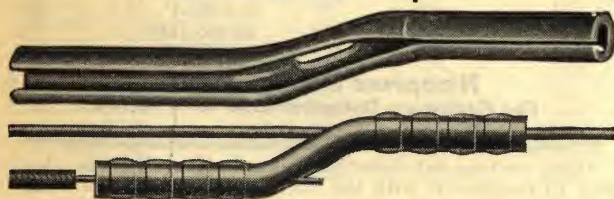
Wire Size B&S	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
12 to 17	C	1-080x045C	1 1/2
10 to 17	C	1-102x045C	1 1/2
10 to 14	C	1-102x064C	1 1/2
10 to 12	C	1-102x080C	1 1/2
8 to 10	E	1-128x102E	2
6 to 8	J	1-162x128J	3 1/4

#### For Steel Wire

Wire Size	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
12 B.W.G. to 17 B&S	C	2-109x045C	2
12 B.W.G. to 14 B.W.G.	C	4-109x083C	1 1/2
10 B.W.G. to 12 B.W.G.	J	2-134x109J	3

Also available in other sizes. Information upon request.

### National Nico-Taps



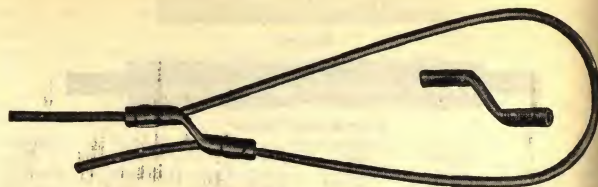
#### Completed Tap

For tap-off connections of line to drop, line to line, and pair to drop. Easily and quickly installed.

Features installation over conductor without cutting or disturbing the line wire in any way.

Wire Size	Tool Groove	Stock No.	Wt., Lb. per 100
17 B&S to 17 B&S	No. 17-2	T2-045B	1 1/2
12 B.W.G. to 12 B.W.G.	D	T2-109D	2 1/2
12 B.W.G. to 17 B&S	D	T2-109x045D	2 1/2
12 B.W.G. to 16 B&S	D	T2-109x051D	2 1/2
12 B.W.G. to 14 B&S	D	T2-109x064D	2 1/2
10 B&S to 10 B&S	D	T1-102D	2 1/2
10 B&S to 17 B&S	D	T1-102x045D	2 1/2
10 B&S to 16 B&S	D	T1-102x051D	2 1/2
10 B&S to 14 B&S	D	T1-102x064D	2 1/2
9 B&S to 9 B&S	D	T1-114D	2 1/2
9 B&S to 17 B&S	D	T1-114x045D	2 1/2
9 B&S to 16 B&S	D	T1-114x051D	2 1/2
9 B&S to 14 B&S	D	T1-114x064D	2 1/2

### Nicopress Offset Dead-Ends



Offset Dead-End Sleeve and Completed Dead-End

Installed with the same tool groove that is used on the splicing sleeves. For pin or strain insulator dead-ending.

#### For Solid Copper

Wire Size B&S	Tool Groove	Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
12	C	91-080C	1 1/2
12	D	91-080D	1 3/4
10	C	91-102C	1 1/2
10	D	91-102D	1 1/2
10	E	91-102E	1 3/4
9	D	91-114D	1 1/2
9	E	91-114E	1 3/4
8	E	91-128E	1 1/2
8	J	91-128J	5 1/2
6	J	91-162J	4 1/2
4	M	91-204M	8
4	P	91-204P	8
3	P	91-229P	11 1/2
2	T	91-258T	17
2	X	91-258X	...

#### For Stranded Copper Wire

Wire Size B&S	Strands	Tool Groove	Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
8	7	J	91-128/7J	5 1/2
6	7	J	91-162/7J	4 1/4
4	7	M	91-204/7M	6 1/2
4	7	P	91-204/7P	7

Available in other sizes and types of stranded copper.

#### For Solid and Stranded Copperweld

Size A.W.G.	Tool Groove	Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
12 Solid	D	91-080D	1 3/4
10 Solid	J	91-102J	5 3/4
8 Solid	M	91-128M	11
8 Solid	P	91-128P	14
6 Solid	P	91-162P	12 1/2
8 A	P	91-8A-P	18
6 A	P	91-6A-P	15 3/4
8 C	P	91-3/081P	14 1/2
9 1/2 D	P	91-3/081P	14 1/2
3 No. 12	P	91-3/081P	14 1/2

Available in other types of copperweld.

#### For Steel Conductors

Wire Size B.W.G.	For Galvanized Wire	Tool Groove	Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
14	BB or 85	C	95-083C	1 1/4
14	BB or 85	C	92-083C	1 1/2
12	BB	C	95-109C	1 1/2
12	85	D	95-109D85	1 3/4
12	135	D	95-109D135	2 1/2
10	BB or 85	J	92-134J	5 1/4
9	BB or 85	J	92-148J	5
8	BB	J	92-165J	5



## Nicopress Suspension Dead-Ends



Completed Suspension Dead-End

Conductor is inserted straight through the shouldered sleeve and compressions are then made with the same Nicopress tool groove that is used for the splicing of that size wire. No bending, bolting of, or damage to the conductor occurs.

### For Copper Wire

Wire Size B&S	Tool Groove	Suspension Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
6	J	71-162J	50
4	M	71-204M	53
4	P	71-204P	54
3	P	71-229P	54
2	T	71-258T	58
2	X	71-258X	61
1	X	71-289X	61

### For Stranded Copper

Wire Size B&S	Strands	Tool Groove	Suspension Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
2	7	T	71-258/7T	60
2	7	X	71-258/7X	66

Available in other sizes.

### For Copperweld—Solid and Stranded



Wire Size A.W.G.	Tool Groove	Suspension Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
8 Solid	M	71-128M	55
8 Solid	P	71-128P	60
6 Solid	P	71-162P	58
4 Solid	X	71-204X	70
3 No. 12	M	71-3/081M	58
3 No. 12	P	71-3/081P	60
3 No. 10	P	73-3/102P	60
8A	P	71-8A-P	62
7A	P	71-7A-P	62
6A	P	71-6A-P	61
4A	X	71-4A-X	70
8C	M	71-3/081M	58
8C	P	71-3/081P	60
9 1/2 D	M	71-3/081M	58
9 1/2 D	P	71-3/081P	60
8D	P	73-8D-P	..
6D	X	73-6D-X	..

### For Steel Conductor

Wire Size B.W.G.	For Galvanized Wire	Tool Groove	Suspension Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
8 Solid	130	L	75-165L	65
6 Solid	130	S	75-203S	60
4 Solid	130	W	75-238W	85
8	3 Str. 130	L	75-165/3L	65
6	3 Str. 130	S	75-203/3S	61
4	3 Str. 130	W	75-237/3W	85

## Nicopress Tools

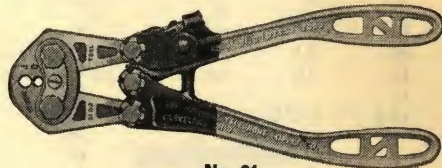
For Telephone, Telegraph, and Signal Work

In making the splice the tool must be of a size that is convenient and practical for the lineman to handle either in the air or on the ground. It must be so efficient in use that pressure can be applied with a certainty that each compression made will be exactly as required.



No. 17

No. 17-2. For splicing drop, bridle, and inside wire. Length, 8 inches. Weight, 9 ounces.



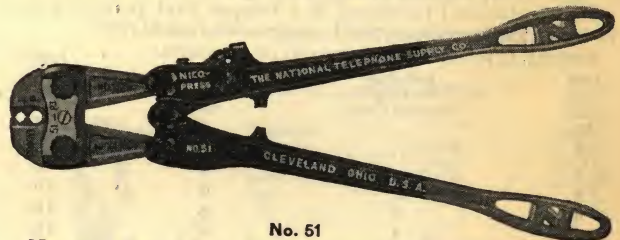
No. 31

No. 31. For communication line wire. Available in groove combinations, DC, DJ, CE, DE, CJ and EJ. Also available with single grooves. Length, 11 1/2 inches. Weight, 2 pounds.



No. 41

No. 41. Available in groove combination MJ. Length, 15 inches. Weight, 3 1/2 pounds.



No. 51

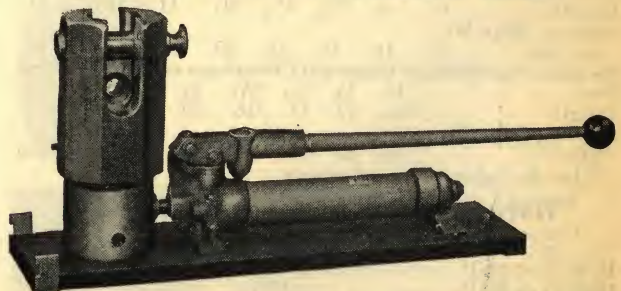
No. 51. For copper and copperweld power conductors. Available in groove combinations PJ, TJ and XJ. Tools for A.C.S.R. are 51-Apple for 6 and 5 A.C.S.R.; 51-Orange for 4 A.C.S.R.; 51-Peach for 2 A.C.S.R.; and 51-Plum for 1/0 A.C.S.R. Length, 18 inches. Weight, 4 pounds.

No. 3

No. 3. Single groove only for W, G3, E5, S and L. In two-groove combination F6 and E8.

Hand operated and are similar in design to tools above except that the length is 35 inches and the weight 12 pounds.

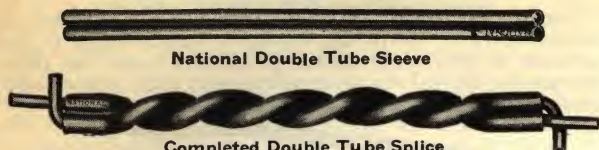
## No. 635 Nicopress Hydraulic Tools



For splicing large conductors and high tensile overhead ground wires. Interchangeable dies cover a wide range of sleeves for copper, A.C.S.R., copperweld, and steel strand. Approximate weight, 50 pounds.



### National Twist Sleeves National Double Tube Copper Sleeves



Completed Double Tube Splice

Made from the best grade of pure copper, exact to size.

Solid B&S Gage	Solid B.W.G. Gage	Solid N.B.S. Gage	B&S Gage 7-Wire Stranded Cable	Length Inches	Approx. Ship. Wt. Lb. per 100
18	..	..	..	4	1.5
17	..	..	..	4	1.5
16	..	..	..	4	1.8
14	16	..	..	4	2.0
12	14	14	..	4 1/2	2.3
10	12	12	..	4 3/4	3.0
9	11	..	..	5 1/4	5.0
8	10	..	..	5 1/2	6.0
7	9	..	..	5 3/4	8.5
6	8	..	..	6	10.0
4	..	..	..	8	16.0
3	..	..	4	8 3/4	19.0
2	..	..	3	9 1/2	25.0
1	..	..	2	12	33.5
0	..	..	1	14	55.0
00	..	..	0	16	67.5
000	..	..	00	18	102.5
0000	..	..	000	20	140.0
....	..	..	0000	20	151.0

Also available in tinned copper.

### National Seamless Single Tube Copper Sleeves For Copper and Copperweld Wire and Strand



Grooved Oval Type

Made from highest grade electrolytic copper, formed exactly to size and furnished in a temper that permits easy twisting. In two types, oval and grooved oval.

Specify type and whether solid or stranded.

Solid B&S Gage	B&S Gage 7 or 19-Wire Stranded Cable	Length Inches	Approx. Ship. Wt. Lb. per 100
10	..	4 1/4	3 1/2
9	..	5 1/4	4 1/2
8	..	5	6
6	..	6	10
4	5	8	16
3	4	8 1/2	19
2	3	9 3/4	25
1	2	11	33 1/2
0	1	12 1/2	55
00	0	14	67 1/2
000	00	16	102
0000	000	18	140
....	0000	19 1/2	151
....	250,000 C.M.	21	180
....	300,000 C.M.	21 3/4	220
....	500,000 C.M.	24	320

### For Copperweld-Copper Conductors (Oval)

Conductor No.	8A	7A	6A	5A	4A	3A	2A
Length.....in.	8	8 1/2	8 1/2	9 3/4	11	12 1/2	14
Approx. Ship. Wt. per 100.....lb.	16	19	19	25	33 1/2	55	67 1/2
For Extra High Strength Copperweld Messenger and Ground Wires							
Size.....in.	1/4	5/32	5/16	3/8	7/16	1/2	5/8
Length.....Min.	12	14	16	20	24	26	26
Approx. Ship. Wt. per 100.....lb.	50	60	90	120	190	210	325

Also available in tinned copper.

### National Amerductor Twist Sleeves

Conductor No.	Length Inches	Stock No.
12 SCG or SCP	8 3/4	4008
10 SCG or SCP	10 3/4	4010
8 SCG or SCP	8 3/4	4008
6 SCG or SCP	11 3/4	4006
4 SCG or SCP	13	4004
2 SCG or SCP	16	4002
8 X	11	4008X

### National Galvanized Cable Rings With Tension Grip For Hanging Cable



2 Cables on Single Strand with Regular and Extra Long Rings

Handy-Five Cluster

The Extra Long Ring

Quickly and easily placed on the messenger, and once in position, will not slip along or jump off, remaining rigid in position because of the tension grip design. Use of these rings enables pulling the cable from either direction and eliminates necessity of reriding the messenger to replace or respace rings. Made from flat, high carbon steel wire with rounded edges. Hot-dip galvanized, with an even deep coating of zinc assuring smoothness and long life.

Gathered in Handy-Five Clusters for convenience in handling. This simple method of gathering, prevents hooking together of rings and does away with all ground litter.

### National Regular Cable Rings

Size In.	Cable Diameter Inches	*Strand Size	Std. Pkg.	Approx. Ship. Wt. Lb. per 1000
1 1/2	1/2 to 1 3/16	....	1000	47
2 Light	1 5/16 to 1 9/16	....	500	66
2 Heavy	1 5/16 to 1 9/16	....	500	90
2 1/2	1 5/16 to 1 15/16	....	500	108
3	1 15/16 to 2 1/4	....	400	125
3 1/2	2 1/4 to 2 5/8	....	300	140
4	2 5/8 to 3	....	250	192
4 1/2	3 to 3 1/2	....	200	210

### National Copperweld Cable Rings

Size In.	Strand Size	Std. Pkg.	Approx. Ship. Wt. Lb. per 1000
1 1/2	5/16 and 3/8	1000	48
2	5/16 and 3/8	500	96
2 1/2	3/8	500	110
3	7/16	400	125
3 1/2	1/2	300	140

Also furnished in calsun bronze.

### National Extra Long Cable Rings

Size In.	*Strand Size	Length Under Strand Inches	Std. Pkg.	Approx. Ship. Wt. Lb. per 1000
1 1/2	....	4 3/4	500	114
2	....	5 1/4	300	170
2 1/2	....	6 3/4	250	216
3	....	7 1/2	200	255
3 1/2	....	8	200	270

Can also be furnished in copperweld and calsun bronze.

\*Made in all strand sizes. Specify size desired.



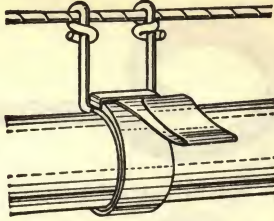
### National Cable Ring Saddles

Furnished in aluminum, galvanized steel, and bronze.

Made in sizes 1 1/2, 2, 2 1/2, 3, and 3 1/2 inches.



## Diamond Aerial Cable Supports



The purpose of aerial cable supports is to supply flexible supports at each side of the pole to prevent ring cut. The strap is wrapped around the cable three times over itself, passing through the hinge member. Adjustable to any height. Provides a flat bearing which will not injure the cable sheath.

The supports are placed two on each side of each pole. They are placed 20 inches apart.

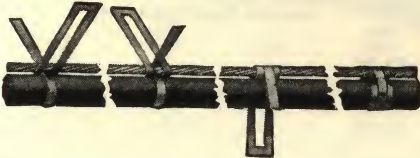
The aerial cable support is composed of a zinc strip, a hinge joint member which holds the free end of the zinc strip in position on a soft galvanized U-shaped wire, 5 inches long.

No.	Per 1000	Length Strap Inches	Maximum Diameter of Cable or Sleeve Inches	Maximum Circumference of Cable or Sleeve Inches	Standard Carton	Weight Pounds per 1000
891	\$75.00	10	3/4	2 5/16	500	84
892	91.00	16	1 1/16	3 5/8	500	110
893	107.00	22	2	6 5/16	300	130
894	130.00	28	2 5/8	8 5/16	300	162
895	147.00	34	3 1/8	10	300	186
896	189.00	50	4 5/8	15 1/16	200	256
897	225.00	64	6 1/2 S	20 1/2	200	315
*898	264.00	64	6 1/2 S	20 1/2	200	350

\*No. 8 is exactly the same as No. 7 except No. 8 has 10-inch long U-shaped wire on end instead of 5-inch long wire as on regular supports.

†Maximum diameter of sleeve.

## Reliable Cable Hangers



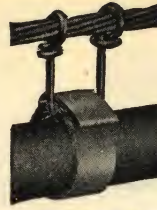
Cable hangers have proved that wear on cable sheath can be eliminated. Entire sheath is grounded solidly to messenger and grade clamp is not needed as cable does not creep on steepest grade.

Hanger is rust-proof and unusually neat in appearance. Maintenance cost of aerial cable is materially reduced and enclosure of entire cable and messenger with cable molding in trees is facilitated.

Zinc hangers are used for supporting lead-covered cable sheath to steel strand. Copper hangers are used for supporting insulated wires or cable to Copperweld strand.

Lgth. In.	Zinc		Copper		WIRE SIZE, INCHES		
	No.	Per 1000	No.	Per 1000	Strand	Max.	Min.
7 7/8	1	\$18.00	1C	\$22.00	5/16	3/4	1/2
11	2	30.00	2C	35.00	3/8	1 1/8	1/2
14	3	40.00	3C	45.00	3/8	1 5/8	1/2
16	4	50.00	4C	53.00	3/8	1 7/8	7/8
18	5	60.00	5C	71.00	3/8	2 1/4	1 1/2
19 1/2	6	70.00	6C	80.00	3/8	2 5/16	2
21	7	80.00	7C	80.00	3/8	2 5/8	2 3/8
22 1/2	8	90.00	8C	90.00	3/8	2 5/8	2 3/8

## National Aerial Cable Supports



Broad, flat smooth zinc strap of support, wrapped 3 times around cable in installation, assures maximum strength and permanence. Support wires applied so that they do not bind but slide easily, to assure flexibility as cable vibrates, expands, contracts or sways.

MAXIMUM SIZE CABLE, INCHES		Length Strap Inches	Lgth. Wire Support Inches	Stock No.	Approx. Ship. Wt. Lb. per 100
Diameter	Circum.				
3/4	2 5/16	10	5	1	8
1 1/8	4 5/16	16	5	2	10
2	6 5/16	22	5	3	12 1/2
2 5/8	8 5/16	28	5	4	15 1/2
3 3/16	10	34	5	5	17
5 Sleeve	15 3/4	50	5	6	24 1/2
6 1/2 Sleeve	20 1/2	64	5	7	28
6 1/2 Sleeve	20 1/2	64	10	8	30 1/2

## National Zinc Cable Clips



The broad flat zinc strap of the assembly provides a wide surface for the cable to rest on and the hooks are so constructed that they move on the strand allowing the necessary play as the cable vibrates, expands, and contracts.

Specify length of strap when ordering.

Strap Length....in.	4-5	6-7-8	9-10-11	12-14	Over 14 to 20
Approx. Ship. Wt. per 100.....lbs.	7	8 1/2	10	11	14

## National Marline Cable Hangers

Specify length of loop.



Maximum Diameter Cable Inches	Length Loop Inches	Approx. Ship. Wt. Lb. per 1000
7/8	9	35
1	10	36
1 1/8	11	37
1 1/4	12	38
1 1/2	13	39
1 5/8	14	40
1 3/4	15	42
2	16	45
2 1/4	18	49
2 1/2	20	62

## National Marline Twine

Furnished in 1-pound balls.

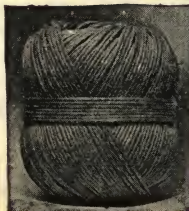


No.....	415	416
Ply.....	2	3

## American Brand Tarred Marline

A 2 or 3-yarn tarred jute twine used principally by power and light companies, contractors, telephone companies and by manufacturers of conduits and cables.

Put up in 1-pound balls. Prices upon application.





## National Angle Screws



Designed for use with porcelain knobs in dead ending drop wires on building, where angle between drop and building is 30° or more.

Hot-dip galvanized.

Made to A.T.&T. standard.

Size.....	inches	5/16
Approx. Shipping Weight per 100.....	pounds	12

## Diamond Angle Screw Fixtures



For attaching knobs for drop wiring on wood or stone structures. Price does not include porcelain knobs.

No.....	840	841
Per 100.....	\$5.50	9.00
Size.....	5/16 inches	3/8
Length Screw End.....	1 3/4 inches	2
Length Shank.....	2 1/4 inches	3 1/2
Size Anchor.....	16-18x1"	20-24x1 3/4"
Weight per 100.....	pounds 12	20

## Diamond Insulated Screw Eyes



Hot galvanized by the Diamond process.

Porcelain ring has a diagonal opening which allows the

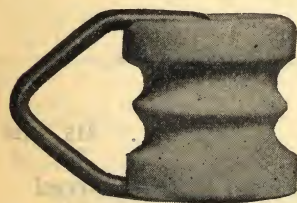
easy insertion of wires and when pulled taut they cannot become released from the ring.

Size steel, 1/4 inch. Opening size, 5/16 inch.

Packed 100 in a container.

No.....	830	831	832	833
Per 1000.....	\$76.67	83.34	100.00	103.34
Type.....	5/8"S	5/8"L	1"S	1"L
Eye.....	5/8 inches	5/8	1	1
Shank.....	1 inches	2	1 1/8	2 1/8
Weight per 1000.....	pounds 85	95	180	190

## National C-B Knobs for Drop Wires



For use on buildings and in trees, C-B Knobs offer many advantages over the rigid knob or insulator.

The knob is hooked into the bridge ring and the drop is dead ended on the knob. When used in trees to prevent abrasion, the drop wire

is simply carried over the knob with a simple tie.

It makes no difference at what angle the drop wire approaches, as the knob provides a flexible and self-adjusting support, equalizing the strain and taking up all vibration.

No.....	190	191
Style.....	Single Groove	Double Groove
Shipping Wt. per 1000..lb.	250	250

## National Galvanized Bridle Rings



These rings are hot-dip galvanized, giving them high rust resistance.

They are a screw type ring, made to A.T.&T. standard, for running twisted pair, bridge, or parallel drop wire on building walls, fences, and poles.

Style.....	A	C	E	F
Eye Size.....	1 5/8 inches	1 1/4	5/8	3
Approx. Shipping Wt. per 1000...pounds	115	75	30	300

Diamond Bridle Rings  
Wood and Machine Screw Thread

Wood Screw



Machine Screw

For pole line and interior block distribution. When using Style A, C, E, or F in masonry installations, use the size anchor shown.

No.	Per 100	Style	Wood Screw Thread				Size Anchor	Wt. Lb. per 1000
			Eye Inches	Shank Inches	Steel Inches	Hot-Dip Galvanized or Enameled		
810	....	A	1 5/8	1 1/4	1/4	10-14x1	110	150
812	....	C	1 1/4	1 1/4	1/4	10-14x1	95	125
814	....	E	5/8	7/8	3/16	10-14x 3/4	35	50
816	....	F	3	1 7/8	3/16	16-18x1 1/2	300	335

Opening 5/16-inch. Specify galvanized or enameled.

No.	Per 100	Style	Machine Screw Thread			Wt. Lb. per 100
			Eye Inches	Thread	Hot-Dip Galvanized Only	
821	\$3.50	K	3/4	10-24		4
823	3.75	M	1 1/4	10-24		6
825	7.80	Q	1 1/4	1/4-20		9.5
827	8.30	R	1 5/8	1/4-20		11

## Diamond Drive Rings



Hot galvanized by the Diamond process.

Accomplishes the same purpose as the screw threaded pigtail bridge ring, but is designed for driving instead of screwing into structures. When attached to wood, drive as an ordinary wire nail. When attached to hard substances, brick, stone, or concrete, use the 1/2-inch size with the 3/16x1/8-inch Diamond Hammer drive

anchors, and the 5/8 and 3/4-inch size with 1/4x1-inch Diamond hammer drive anchor. Packed 100 to a box.

No.....	801	802	803
Per 1000.....	\$7.00	12.00	17.00
Diameter Eye.....	1/2 inches	5/8	3/4
Overall Length.....	2 1/8 inches	2 1/4	2 3/8
Size Hammer Drive Anchor to Use.in.	3/16x1/8	1/4x1	1/4x1
Weight per 1000.....pounds	18	28	53



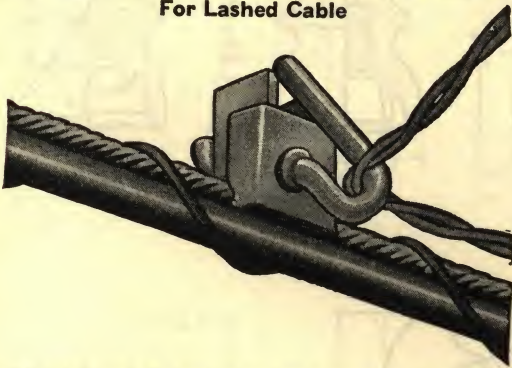
## No. 865 Diamond Style A Span Clamps For Suspended Cable



Used for taking off drop wire leads along the span.  
Also used for pull-offs to hold the cable away from trees, thus avoiding the use of tree guards.  
Can only be used with suspended cable.  
Plate is made of  $\frac{1}{8}$ -inch steel. Hooks are made of  $\frac{5}{16}$ -inch round, high tensile strength steel.  
All parts are hot-dipped galvanized after fabrication.  
Packed 100 to a carton.  
Shipping weight, 47 pounds.

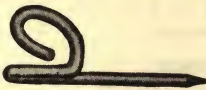
No. 865.....per 100 \$25.00

## No. 866 Diamond Style B Span Clamps For Lashed Cable



Used for taking off drop wire leads along the span.  
Also used for pulloffs to hold the cable away from trees, thus avoiding the use of tree guards.  
Can be used for both lashed and suspended cable.  
Plate is made of  $\frac{1}{8}$ -inch steel. Hooks are made of  $\frac{5}{16}$ -inch round, high tensile strength steel. All parts are hot-dipped galvanized after fabrication. Packed 100 to carton.  
No. 866, Shipping Weight, 41 Pounds.....per 100 \$25.00

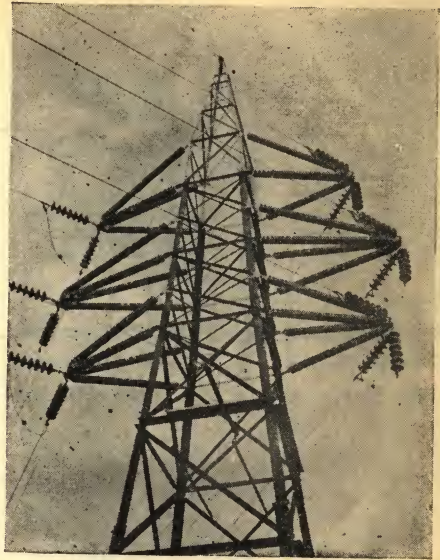
## National Drive Rings



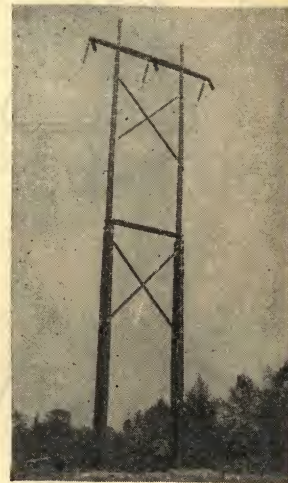
Low cost, efficient, hammer drive rings for use where only a few pairs of wire are being run. Hot-dip galvanized. Made to A.T.&T. standard. Eye size,  $\frac{1}{2}$  inch. Length, 2 inches. Approximate shipping weight per 1000, 17 pounds.



## Hubbard High Tension Hardware



Conversion of Steel Tower Arms to Hubbard Dual-Member Wood Arms



River Crossing Structure

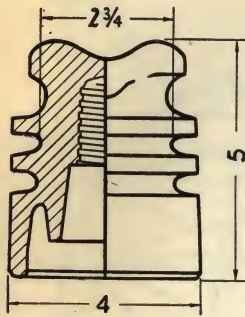


Hubbard K-Frame Structure with Flexible Center Assembly

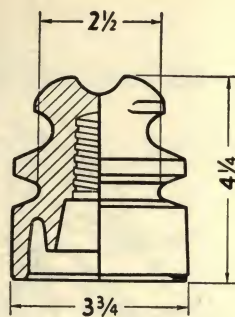
For Complete Information and Prices Covering Hubbard High Tension Hardware, Write for Catalog



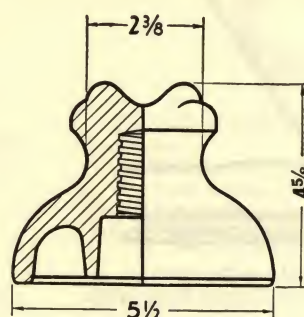
## Owens-Illinois Power Insulators



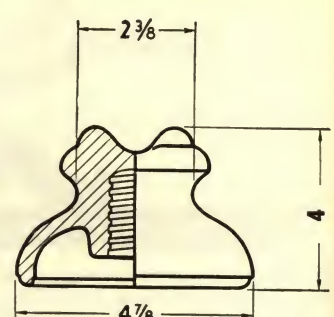
NO. 680



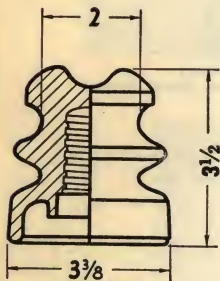
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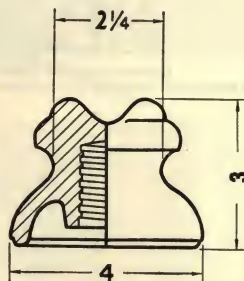
NO. 514



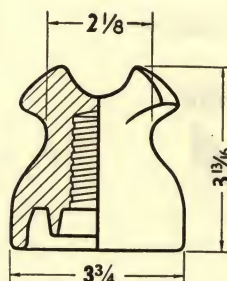
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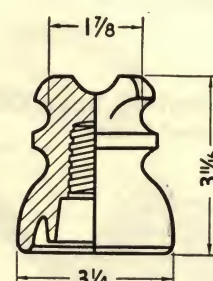
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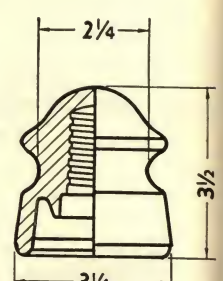
NO. 512



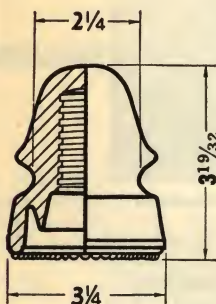
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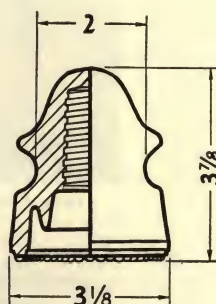
NO. 61



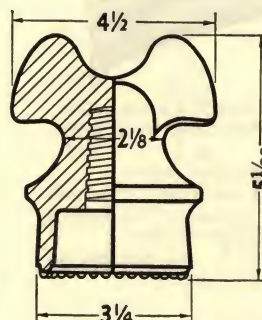
NO. 510



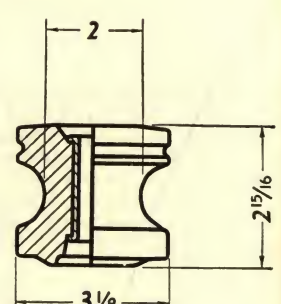
NO. 19



NO. 20



NO. 60



NO. 518LB

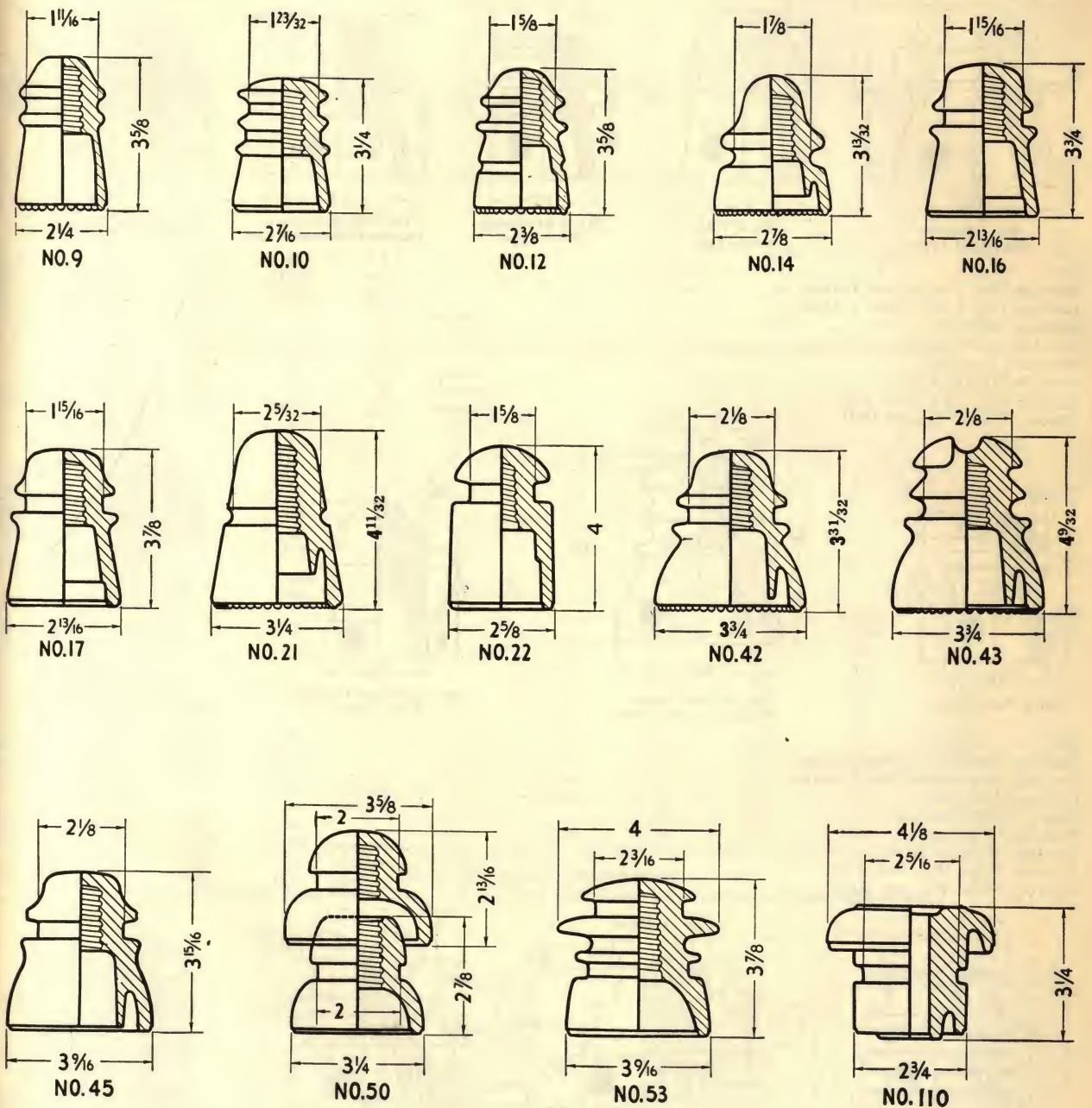
All Insulators Above Have Pin Hole Size of 1 Inch

No.	680	670	514	513	660	512	62	61	510	19	20	60	518-LB.
Flashover:													
60 Cycles Dry..... kilowatts	70	65	70	60	55	50	55	45	35	35	35	40	..
60 Cycles Wet..... kilowatts	45	40	40	35	35	25	27	25	20	20	20	25	..
1 1/2x40 Wave..... kilowatts	120	100	120	95	85	85	85	80	75	75	75	80	..
Leakage Distance..... inches	9 1/2	7 1/2	8	5	5 1/8	4	4 1/2	4	4	4 1/8	4 3/8	4 1/2	..
Arcing Distance:													
Dry..... inches	5	4 1/2	4 5/8	4	3 1/2	3	3 1/4	3	2 3/8	2 3/8	2 3/8	3	..
Wet..... inches	1 1/4	1 1/8	2	1 3/4	1	1 1/4	1 1/8	1	1	1	1	1 1/8	..
Mechanical Strength..... pounds	3000	2500	2000	2500	2500	3000	2500	2500	4000	2500	2500	2500	4000
Minimum Pin Height..... inches	5 1/2	5	5	5	4	4	3 1/16	3 1/16	4	3 19/32	3 7/8	5 1/2	..
Standard Package.....	24	24	24	30	50	50	40	50	50	50	50	50	..
Weight per Std. Pkg..... pounds	68	51 1/2	69 1/2	52 1/2	66	69 1/2	72	64	64	56 1/2	58 1/2	49	69 1/2

Prices on Request



## Hemingray Communication Insulators



All Insulators Above Have Pin Hole Size of 1 Inch

No.	9	10	12	14	16	17	21	22	42	43	45	50	53	110
Carton.....	50	50	50	50	50	50	40	50	40	40	40	25	30	40
Weight per Carton..... pounds	30	35½	32½	40	54½	52½	56	57	60	78½	67	48½	58½	76
Approximate Weight per 1000..... pounds	600	710	650	800	1090	1050	1400	1140	1500	1963	1675	1940	1950	1900

Prices on Request

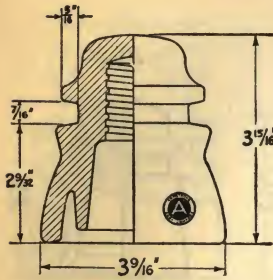


## Armstrong's Glass Insulators

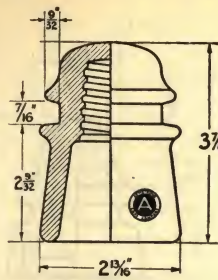
Made by the Armstrong Cork Company

Armstrong's No. 1 meets the Bell System's standards for "DP", No. 2 for "Toll Line," No. 3 for "Exchange Line," and "TW" for "Transposition."

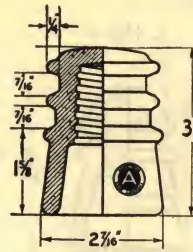
Western Union and the country's leading railroads use Armstrong's No. 1.



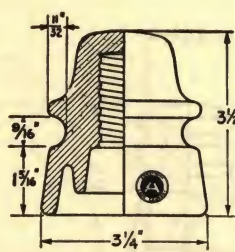
No. 1 Double Petticoat Type



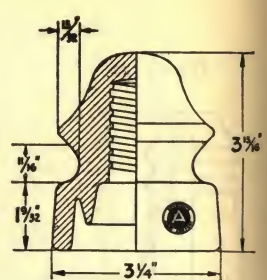
No. 2 Toll Line Type



No. 3 Exchange Line Type

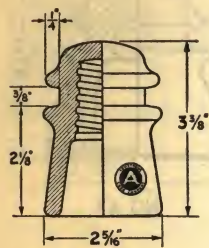


No. 4 Deep Groove, Double Petticoat Type

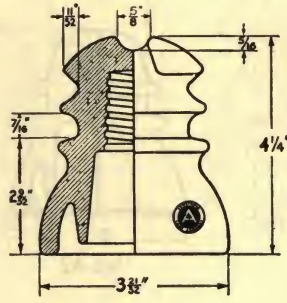


No. 5 Extra Deep Groove, Double Petticoat Type

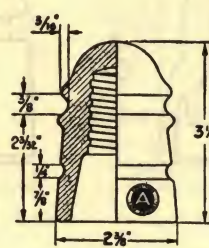
No.	1	2	3	4	5
Average Wet Flash-Over Voltage.....	25,000	22,000	22,300	20,500	23,000
Average Dry Flash-Over Voltage.....	52,900	39,300	38,600	42,100	43,000
Leakage Distance.....inches	7 1/4	5	4 1/2	4 15/16	5 5/16
Wet Arcing Distance.....inches	1 1/8	5/8	1 1/2	7/8	15/16
Standard Package.....	40	50	50	50	50
Average Weight Each.....ounces	24 1/4	16	10 3/4	17 1/4	18 1/2
Approx. Ship. Wt., Std. Pkg.....pounds	65	54	36	59	61
Approx. Ship. Wt., per 1000.....pounds	1625	1080	720	1174	1220



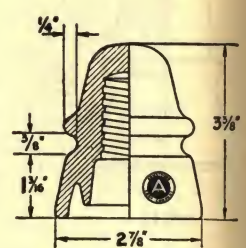
No. 9 Pony Type



No. 10 Top Groove, Western Union Type

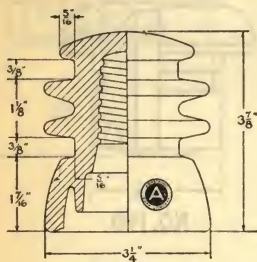


No. 13 Double Groove, Pony Type

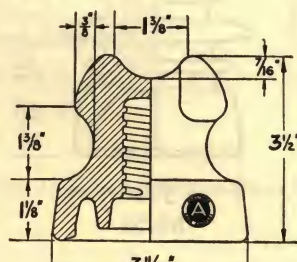


No. 14 Deep Groove, Double Petticoat Pony Type

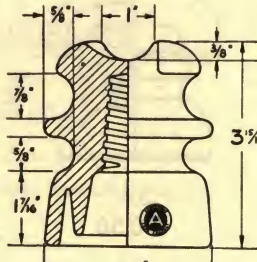
No.	9	10	13	14
Average Wet Flash-Over Voltage.....	20,800	26,700	20,100	16,500
Average Dry Flash-Over Voltage.....	34,900	59,500	37,000	35,600
Leakage Distance.....inches	4 1/8	8 1/8	4 1/4	3 5/16
Wet Arcing Distance.....inches	3/8	1	1 1/2	7/8
Standard Package.....	50	40	50	50
Average Weight, Each.....ounces	9 3/8	26 1/2	9 5/8	12 1/2
Approx. Ship. Wt., Std. Pkg.....pounds	31	72	32	41
Approx. Ship. Wt., per 1000.....pounds	620	1800	640	820



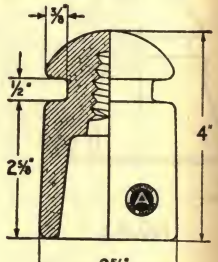
TW One-Piece Transposition Type



No. 511A Cable Type



No. 512U Universal Distribution Type



CSC For mounting on a steel pin cushioned with a .016-inch lead thimble.

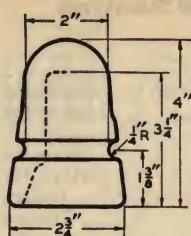
No.	15	511A	*512U	CSC
Average Wet Flash-Over Voltage.....	26,600	26,000	.....	.....
Average Dry Flash-Over Voltage.....	54,500	59,000	.....	.....
Leakage Distance.....inches	6 5/8	4 1/2	.....	.....
Wet Arcing Distance.....inches	1	1	.....	.....
Standard Package.....	30	32	50	50
Average Weight Each.....ounces	29 1/4	23 3/4	.....	.....
Approximate Ship. Wt., Std. Pkg.....pounds	58	50	73	56
Approximate Ship. Wt., per 1000.....pounds	1930	1562	1440	1120

\*Furnished in brown glass only

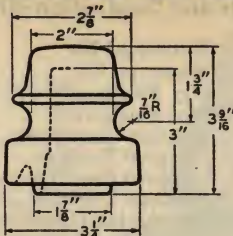
Prices Upon Application



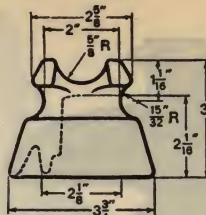
### O-B Low-Voltage Pintype Insulators For Distribution and Farm Lines



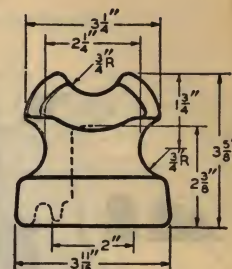
No. 30418



No. 29207



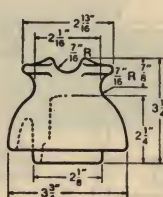
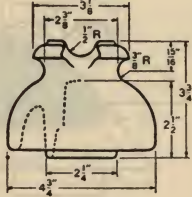
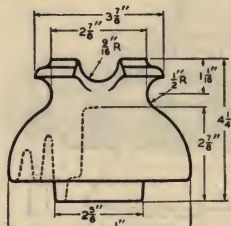
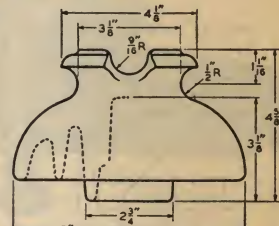
No. 9404



No. 9953

Number	30418	29207	No. 9404	9953
Dry Flashover.....	30	35	50	50
Wet Flashover.....	15	20	25	25
Leakage Distance.....	2 5/8	4	4	4
Dry Arcing Distance.....	2	2 1/4	3 3/8	3 1/4
Mechanical Strength.....	2500	3000	2500	3000
Pinhole Diameter.....	1	1	1	1
Pin Recommended.....	4	4	4	4
No. in Standard Package.....	50	50	50	50
Shipping Weight per 100.....	104	117	132	164

### For Distribution and Farm Lines—Untreated Units and Conduction—Glazed Silentytypes

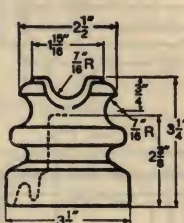
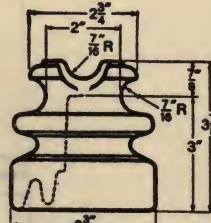
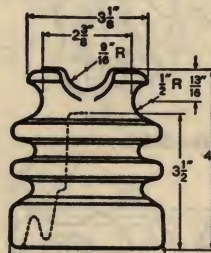
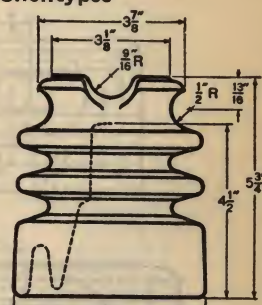
Nos. 12847  
and 38147Nos. 12848  
and 38148Nos. 12849  
and 38149Nos. 12851, 12852,  
38151, and 38152

Untreated No.	12847	12848	12849	12851	12852
Silentytype No.	38147	38148	38149	38151	38152
*Dry Flashover.....	50	65	70	85	85
Wet Flashover.....	25	35	40	45	45
Impulse Flashover, 1 1/2x40 Positive.....	75	100	110	140	140
Impulse Flashover, 1 1/2x40 Negative.....	95	130	140	170	170
Leakage Distance.....	5	7	9	12	12
Dry Arcing Distance.....	3 3/8	4 1/2	5	6 1/4	6 1/4
Mechanical Strength.....	2500	2500	3000	3000	3000
Diameter Pinhole.....	1	1	1	1	1
Pin Recommended.....	4	5	6	7	7
No. in Standard Package.....	50	32	18	12	12
Shipping Weight per 100.....	138	234	366	616	606

\*For untreated insulators. Silentytype insulators may have flashover values as much as 5 kilovolts below these values.

### O-B Kingpin Insulators

#### For Distribution and Farm Lines—Untreated Units and Conduction—Glazed Silentytypes

Nos. 34847  
and 38947Nos. 34848  
and 38948Nos. 34849  
and 38949Nos. 34851, 34852,  
38951 and 38952

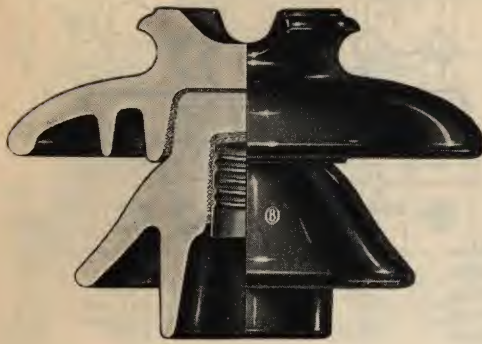
Untreated No.	34847	34848	34849	34851	34852
Silentytype No.	38947	38948	38949	38951	38952
*Dry Flashover.....	50	65	70	85	85
Wet Flashover.....	30	40	45	55	55
Leakage Distance.....	6	7 1/4	9	12 1/2	12 1/2
Mechanical Strength.....	2500	2500	3000	3000	3000
Pinhole Diameter.....	1	1	1	1	1 3/8
Pin Recommended.....	4	5	6	7	7
No. in Standard Package.....	50	32	24	12	12
Shipping Weight per 100.....	132	198	283	560	550

\*For untreated insulators. Silentytype insulators may have flashover values as much as 5 kilovolts below these values.



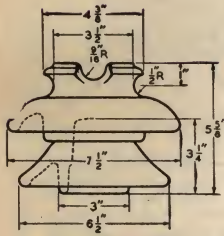
## O-B Multipart Insulators

## Untreated Units and Conduction-Glazed Silentsypes

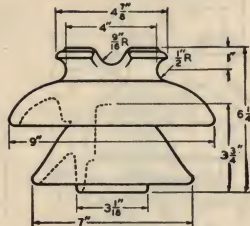


Untreated No.	31546	31622	31623	31855
Silenttype No.	38246	38222	38223	38255
Dry Flashover.....kilovolts	95	110	125	140
Wet Flashover.....kilovolts	60	70	80	95
Impulse Flashover:				
1½x40 Positive.....kilovolts	150	175	200	225
1½x40 Negative.....kilovolts	190	225	265	310
Leakage Distance.....inches	13	17	21	27
Dry Arcing Distance.....inches	7	8¼	9½	11¼
Mechanical Strength.....pounds	2,500	3,000	3,000	3,000
Pinhole Diameter.....inches	1⅜	1⅜	1⅜	1⅜
Pin Recommended.....inches	7	8	9	11
No. in Standard Package.....	6	6	6	3
Shipping Weight per 100.....pounds	867	1185	1485	2660

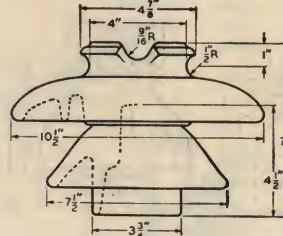
Regularly furnished with 1⅜-inch metal-thread pinholes. Other standard forms of pinholes furnished upon specification.



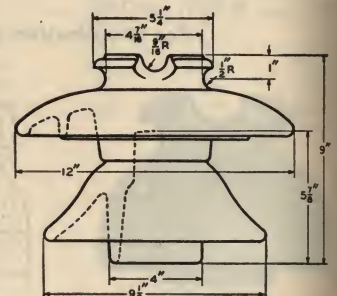
Nos. 31546  
and 38246



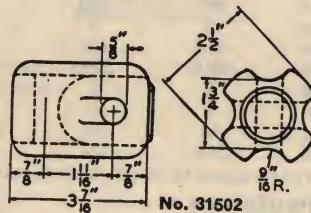
Nos. 31622  
and 38222



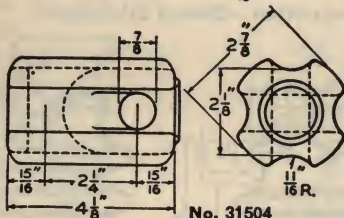
Nos. 31623  
and 38223



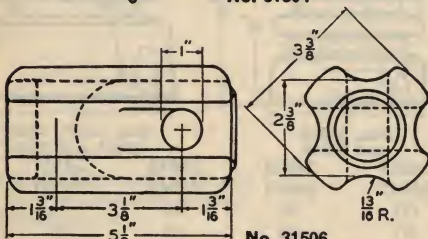
Nos. 31855  
and 38255

O-B Type J-B Strain Insulators  
For Distribution and Farm Lines

No. 31502

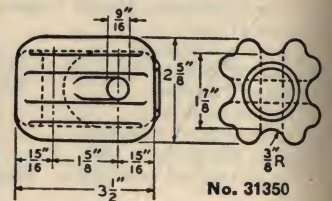


No. 31504

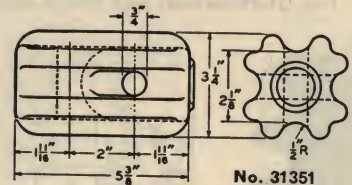


No. 31506

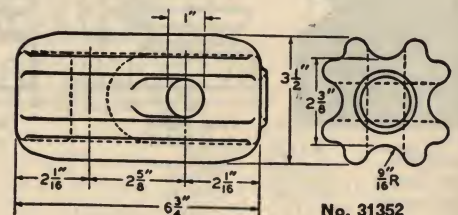
No.	31502	31504	31506
Dry Flashover.....kilovolts	25	30	35
Wet Flashover.....kilovolts	14	16	18
Leakage Distance.....inches	1⅝	1⅞	2¼
Rated Ultimate Strength.....pounds	10,000	12,000	20,000
No. in Standard Package.....	50	50	25
Shipping Weight per 100.....pounds	125	200	375

O-B Multi-Fin Strain Insulators  
For Distribution and Farm Lines

No. 31350



No. 31351

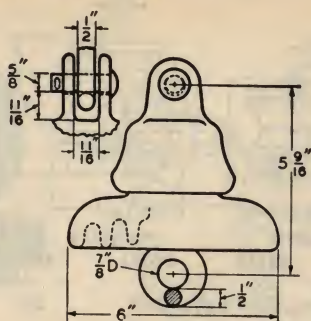


No. 31352

No.	31350	31351	31352
Dry Flashover.....kilovolts	30	35	40
Wet Flashover.....kilovolts	17	20	24
Leakage Distance.....inches	2⅞	3¼	3¾
Rated Ultimate Strength.....pounds	10,000	12,000	20,000
No. in Standard Package.....	50	25	16
Shipping Weight per 100.....pounds	150	350	485



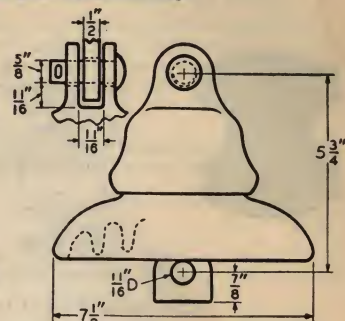
### 7½-Inch Diameter Units



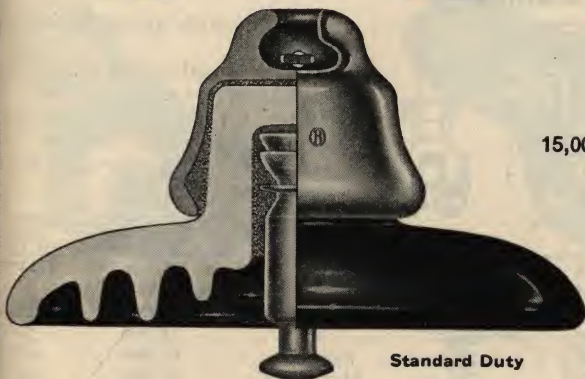
No. 32433



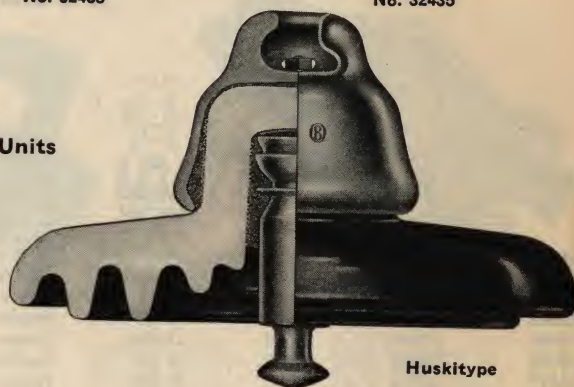
No. 32435



No. 32435

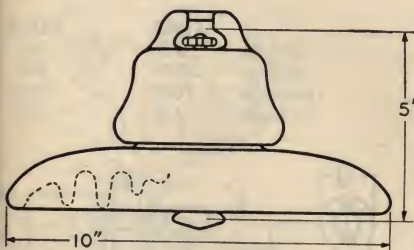


### Standard Duty

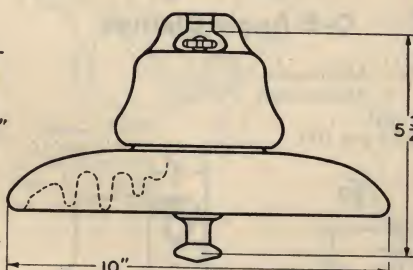


## Huskitype

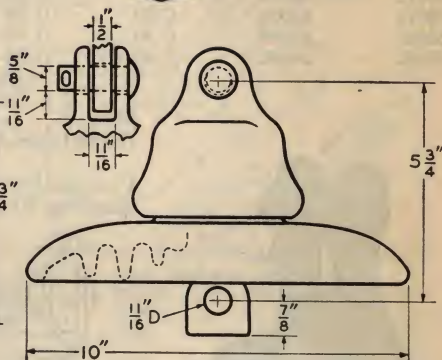
## 15,000-Pound Units



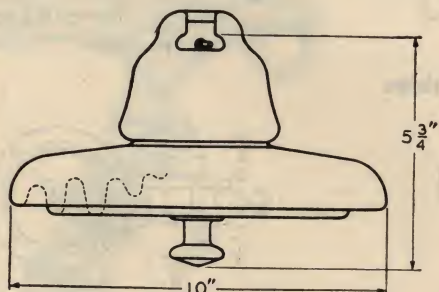
**No. 32436**



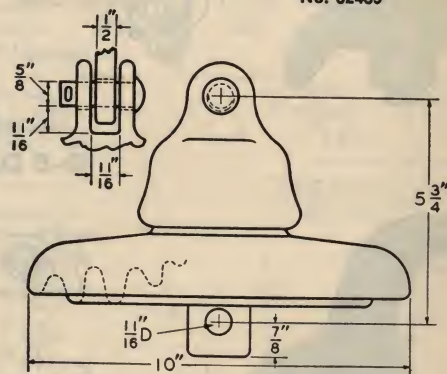
No. 32440



No. 32439



No. 34500

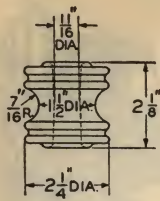


No. 35301

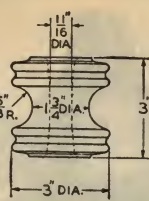
6-In. Dia. Unit		7½-In. Dia. Unit		15,000-Pound Units Standard Type			15,000-Pound Units Huskity	
32433	32435	32436	32440	32439	34500	35301		
60	65	80	80	80	80	80		
30	35	50	50	50	50	50		
7	8¾	11¾	11¾	11¾	12	12		
4½	5¾	7¾	7¾	7¾	8	8		
10,000	15,000	15,000	15,000	15,000	15,000	15,000		
.....	.....	55	55	55	90	90		
8	6	6	6	6	6	6		
550	885	1140	1040	1050	1240	1250		



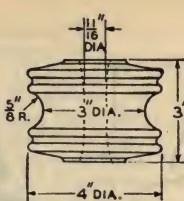
O-B Spools



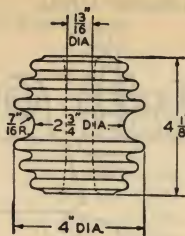
No. 36139



No. 36361



No. 38911

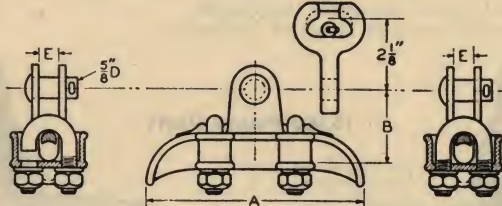
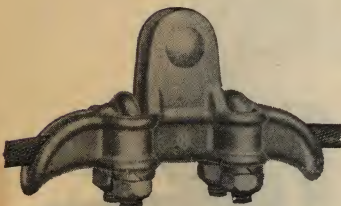


No. 36140



No.	36139	36361	38911	36361	38911	36140
Size	2 1/8	3	3	3	3	4 1/8
Shipping Weight per 100	50	125	250	250	250	245

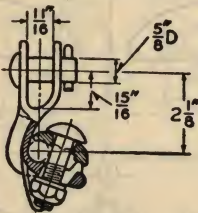
O-B Suspension Clamps



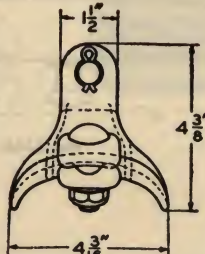
J-Bolt No.	U-Bolt No.	Cable Diam., In. Minimum	Maximum	Type of Fitting	A	B	E	Ultimate Strength Pounds	Approx. Ship. Wt. Lb. per 100
83041	83044	0.12	0.46	None	5 3/4	2 1/8		16,000	180
83042	83045	0.12	0.46	Socket	5 3/4	2 1/8		16,000	280
83061	83064	0.20	0.60	None	6 3/4	2 1/4	9/16	16,000	295
83062	83065	0.20	0.60	Socket	6 3/4	2 1/4	9/16	16,000	405
83071	83074	0.30	0.70	None	7 1/8	2 1/4	Same as Maximum	18,000	335
83072	83075	0.30	0.70	Socket	7 1/8	2 1/4	Seat	18,000	435
83081	83084	0.40	0.83	None	7 1/2	2 3/8	Diameter	18,000	410
83082	83085	0.40	0.83	Socket	7 1/2	2 3/8		18,000	520

Available with arcing horns, if desired.  
Furnished with either copper or aluminum liners when specified.  
Deduct 0.1-inch from maximum seat diameter to allow for liner.  
Information on larger sizes furnished upon request.

O-B Angle Clamps



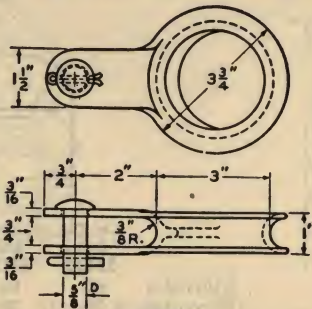
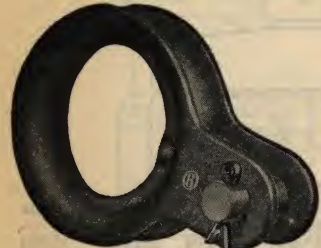
No. 81460



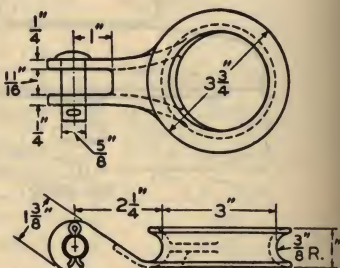
No. 82860

No.	81460	82860
Cable Diameter: Minimum	.162	.162
Maximum	.600	.600
Ultimate Strength	7000	7000
Shipping Weight per 100	145	145

O-B Dead-End Thimbles



No. 80425



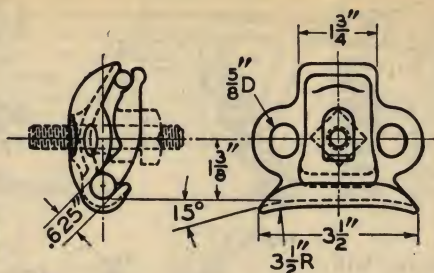
No. 82825

Either thimble attaches directly to the eye or clevis of a suspension insulator and serves as a means for dead-ending or turning angles.  
Made of O-B Flecto-processed malleable iron, hot-dip galvanized.

No.	80425	82825
Ultimate Strength	7000	7000
Shipping Weight per 100	130	150



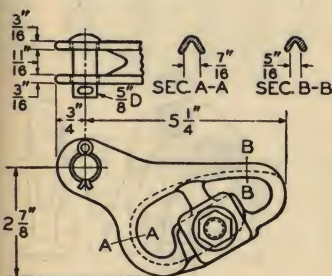
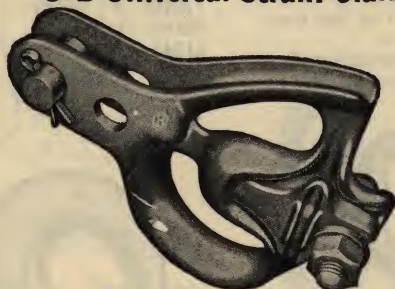
**Patented**



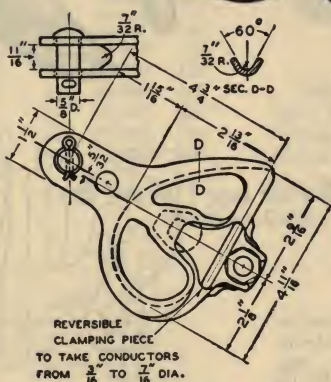
Has a seat for holding the neutral conductor, an eye on each side for dead-ending service wires, and a groove on the upper edge of the keeper piece for a ground wire or neutral secondary wire.

The portion of the main clamp casting through which the bolt passes is threaded.

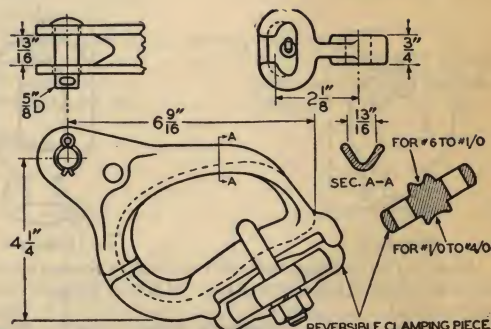
No.	Description	Ship. Wt. Lb. per 100
81000	Tapped for $\frac{5}{8}$ -Inch Bolt.....	120
81005	Tapped for $\frac{1}{2}$ -Inch Bolt.....	120



No. 80500

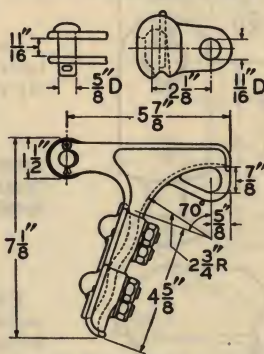


No. 81500

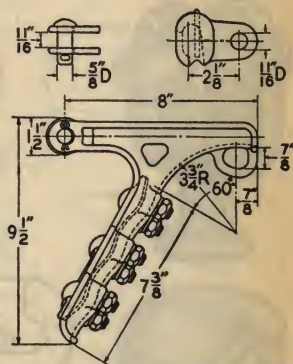


Nos. 78500 and 78501

No.	No. 80500	No. 81500	No. 80500 and 81500	No. 81500 and 78501	No. 78501
Type of Fitting	None	None	None	None	Socket
Cable Diameter: Minimum	.125	.160	.160	.160	.160
Maximum	.350	.437	.550	.550	.550
Ultimate Strength	8,000	10,000	14,000	14,000	14,000
Shipping Weight per 100	130	230	390	390	538



Nos. 83834, 83835, 85134, and 85135



Nos. 80435, 80436, 80437, and 80438

Nos. 83835, 85135, 80435, and 80436														Nos. 83834, 85134, 80434, and 80438													
Without Liners No.	*With Aluminum Liners No.	Type of Fitting	CABLE DIAM.		Ultimate Strength Pounds	Approx. Ship. Wt. Lb. per 100	Without Liners No.	*With Aluminum Liners No.	Type of Fitting	CABLE DIAM.		Ultimate Strength Pounds	Approx. Ship. Wt. Lb. per 100														
			INCHES							INCHES																	
			Min.	Max.						Min.	Max.																
83835	.....	Socket	.200	.460	14,000	415	80435	.....	Socket	.200	.550	15,000	628														
.....	85135	Socket	.190	.360	14,000	420	.....	80436	Socket	.200	.450	15,000	630														
83834	.....	None	.200	.460	14,000	300	80437	.....	None	.200	.550	15,000	495														
.....	85134	None	.190	.360	14,000	305	.....	80438	None	.200	.450	15,000	505														

\*Copper liners will be furnished when specified



## O-B Hook Bolt Strain Clamps

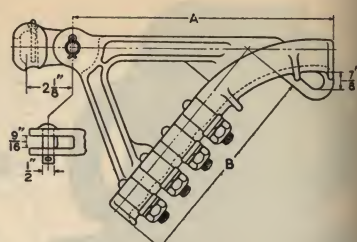
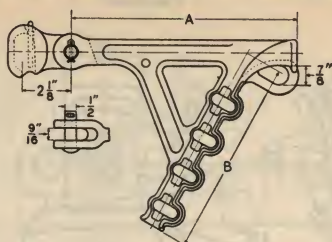
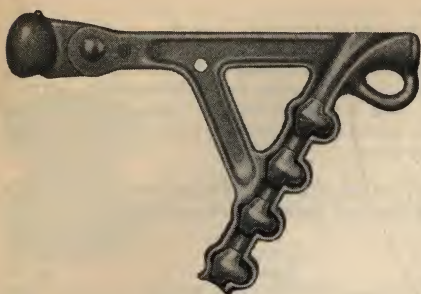


Figure 1

Figure 2

Designed primarily for use with copper conductors. Will develop slip strength in excess of the elastic limit of most cables which it will accommodate. Hook bolts need not be removed to install conductor. Merely turn out of the way before slipping cable into the conductor groove.

Body and fittings are made of O-B Flecto-processed malleable iron. Bolts and nuts are steel. All ferrous parts are hot-dip galvanized. Not furnished with liners.

No.	Fig. No.	Type of Fitting	DIMEN., IN.		CABLE DIAM. INCHES		Ultimate Strength Pounds	Ship. Wt. Lb. per 100
			A	B	Min.	Max.		
11541	1	Socket	10 1/8	8 1/2	.187	.500	8,500	610
10755	1	None	10 1/8	8 1/2	.187	.500	8,500	530
11542	2	Socket	9 3/4	8 1/4	.312	.687	15,000	805
11040	2	None	9 3/4	8 1/4	.312	.687	15,000	715
11543	2	Socket	11 5/8	9 1/8	.375	.750	15,000	870
11328	2	None	11 5/8	9 1/8	.375	.750	15,000	750

## O-B Ball Eyes

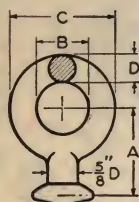
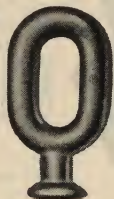


Figure 1

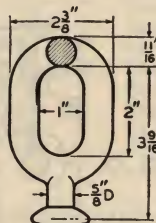
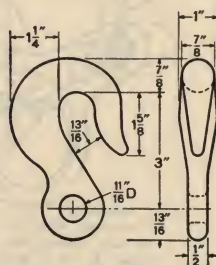
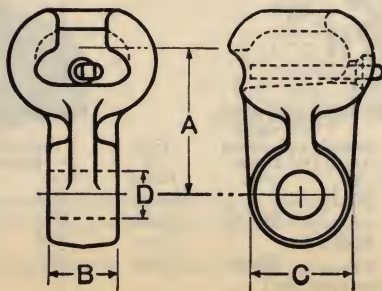
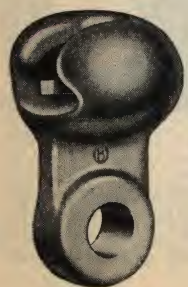
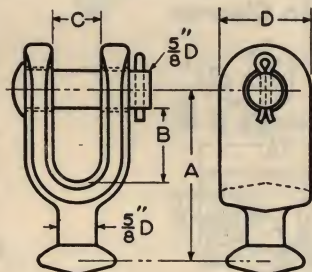


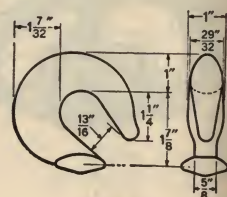
Figure 2

Used for attaching ball-and-socket type suspension insulators to supporting structures. Made of forged steel, hot-dip galvanized.

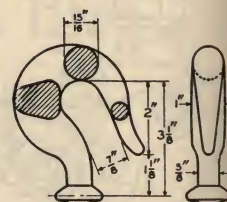
No.	Fig. No.	DIMENSIONS, INCHES				Ultimate Strength Pounds	Ship. Wt. Lb. per 100
		A	B	C	D		
11547	1	1 1/2	1 1/16	1 13/16	9/16	20,000	62
12939	1	1 3/4	1 1/16	2 3/16	9/16	20,000	52
13499	1	1 3/4	1 1/4	2 3/8	9/16	20,000	62
70167	1	1 15/16	1 3/16	2 7/16	13/16	30,000	105
70698	1	2 1/8	1 1/4	2 5/8	1 1/16	20,000	83
70776	2	...	...	...	...	30,000	94



No. 79270



No. 78420



No. 85465

Used for attaching suspension insulators to supporting structures. Made of forged steel, hot-dip galvanized.

No.	78420	79270	85465
Ultimate Strength	25,000 pounds	25,000 pounds	25,000 pounds
Shipping Weight per 100	105 pounds	115 pounds	150 pounds

## O-B Ball Clevises

Used for attaching ball-and-socket type suspension insulators to supporting structures. Made of forged steel, hot-dip galvanized.

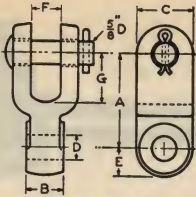
No.	DIMENSIONS, INCHES				Ultimate Strength Pounds	Ship. Wt. Lb. per 100
	A	B	C	D		
70689	2 3/4	1 3/8	1 3/16	1 1/2	20,000	115
79601	2 7/8	1 3/8	1 3/16	1 9/16	30,000	120
70488	3 3/4	2 3/8	1 3/16	1 1/2	20,000	155

## O-B Socket Eyes

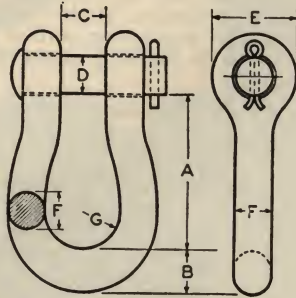
Used for attaching suspension and strain clamps to ball-and-socket type suspension insulators. Made of O-B Flecto-processed malleable iron, hot-dip galvanized.

No.	DIMENSIONS, INCHES				Ultimate Strength Pounds	Ship. Wt. Lb. per 100
	A	B	C	D		
11544	2 1/8	1 1/2	1 1/2	9/16	16,000	115
78721	2 1/8	1 1/2	1 1/2	1 1/16	16,000	105
72441	3 1/4	1 1/2	1 3/4	1 1/16	16,000	160
74593	2 1/8	5/8	1 1/2	1 1/16	18,000	115
78728	2 1/8	3/4	1 1/2	1 1/16	18,000	115
82885	2 5/8	3/4	2	1 3/16	27,000	197
82891	2 1/8	7/8	1 5/8	1 1/16	25,000	150





Used to connect suspension and strainclamps to clevis type insulators or for similar applications. Made of O-B Flecto-processed malleable iron or drop-forged steel, hot-dip galvanized.



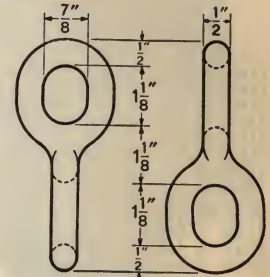
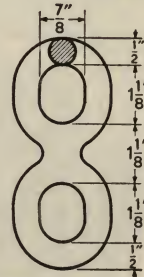
Furnished with machine bolts, nuts and cotters in place of rivets when so specified.

No.	DIMENSIONS, INCHES							Ultimate	Ship.
	A	B	C	D	E	F	G	Strength Pounds	Wt. Lb. per 100
13722	1 7/8	1 7/8	3 4/8	9 1/2	13 1/8	1 7/8	5 7/8	20,000	62
79608	2 1/2	2 1/2	7 7/8	5 7/8	13 3/8	2 1/2	11 1/16	25,000	105
79609	2 3/8	5 7/8	11 1/8	3 3/4	13 3/8	5 7/8	3 3/4	25,000	165
70706	3 1/8	7 7/8	7 7/8	3 3/4	13 3/4	3 3/4	3 3/4	40,000	220
79600	3 3/8	7 7/8	7 7/8	3 3/4	13 3/4	3 3/4	3 3/4	60,000	225
83543	3 3/8	1 1/4	13 3/8	1 1/4	3	1 1/4	1 1/8	75,000	700

Technical drawing of a lifting device, showing a side view and a top view. The side view (left) shows a vertical assembly with a central shaft and two side arms. Dimensions include 3 1/2", 2 5/8", 1 3/4", 1 1/2", 3 1/8", 2 3/4", 7 1/2", 13", 4 1/2", 1 1/8", 1 1/2", 3 1/8", 1 3/4", 2 5/8", and 3 1/8". The top view (right) shows a horizontal assembly with a central shaft and two side arms. Dimensions include 3 1/8", 2 3/4", 7 1/2", 13", 4 1/2", 1 1/8", 1 1/2", 3 1/8", 1 3/4", 2 5/8", and 3 1/8". Part numbers 70709, 79273, 70689, and 83002 are indicated. The drawing also shows 8 15/16" and 11 11/16" dimensions for the overall width and height of the side view.

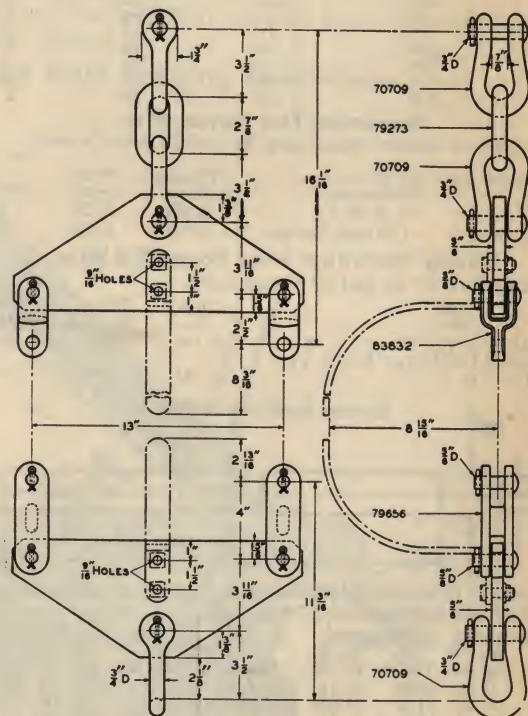
No.	Description	Strength Pounds	Wt. Lb. per 100
79650	With Fittings and Arcing Horns. . . .	36,000	4190
79631	With Fittings, Without Arcing Horns	36,000	3800

Fittings for attaching yokes to structures and strain clamps are furnished as part of each set.



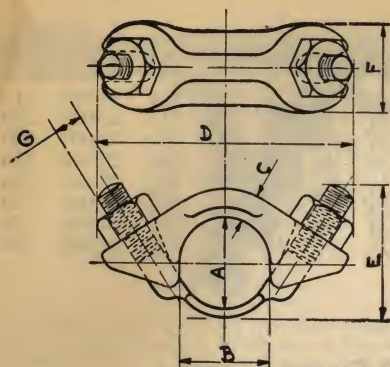
No. 72452

No.....	72451	72452
Ultimate Strength..... pounds	20,000	20,000
Shipping Weight per 100..... pounds	62	62



No.	Description	Ultimate Strength Pounds	Shp. Wt. Lb. per 100
79651	With Fittings and Arcing Horns.....	36,000	4190
79632	With Fittings, Without Arcing Horns	36,000	3800



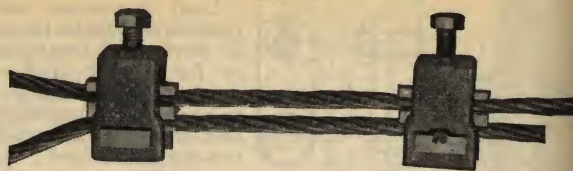


### Conductor Accessories

#### Armor Rod Clip (V-Bolt Type)

Made of strong aluminum alloy. Can be placed over armor rods by removing only one nut from the V-bolt.

### No. 422 Reliable Flip-On Loop Clamps

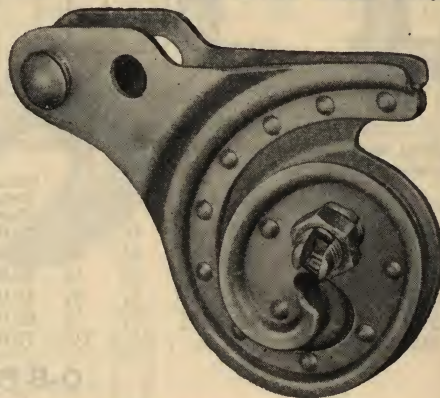


For use in secondary deadending. Fastens Nos. 2 or 4 ACSR around spool or thimble. Easily installed, only one screw to tighten. Made of all-aluminum alloy. A long bell-mouthed contacting surface of soft aluminum grips the wire to its breaking strength without damage to the conductor.

Weight, 4 ounces.

No. 422 .....each

### No. 420 Reliable Snub Dead Ends



Accommodates Nos. 2 or 4 ACSR.

Made of high strength, non-corrosive aluminum alloy.

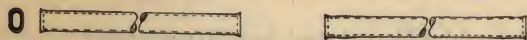
Spiral form carries the snub principle to full advantage to develop, approximately, the full strength of the conductor and to distribute the strain equally on all strands. It does not damage the conductor.

Easily installed. Light weight of clamp minimizes vibration fatigue strains, prolonging the life of the conductor.

Weight, 3/4 pound.

No. 420 .....each

### Twisting Joints for ACSR Cable



Each joint consists of two sleeves. The number specifies complete joint, i.e., two sleeves. For making this joint two twisting wrenches are required. In ordering them specify same number as joint. Joints are made of aluminum.

No.	ACSR Size CM or A.W.G.	Overall Diameter Cable Inches	Length Each Sleeve Inches	Total Wt., Lb. per Joint
544	4	0.250	12	0.28
542	2	0.316	15	0.42
540	1/0	0.398	19	0.60
529	2/0	0.447	21	0.80
528	3/0	0.502	23	0.86
527	4/0	0.563	26	1.15

### Aluminum Flat Armor Wire

Packed on spools containing 35 and 10 pounds each.

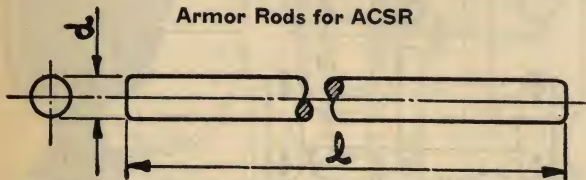
ACSR	Cable Sizes, A.W.G. All-Aluminum	Thickness Inches	Width Inches	Wt., Lb. per 1000 Ft.
6, 5	4, 3, 2, 1	0.03	0.25	8.8
4 and Larger	1/0 and Larger	0.05	0.30	17.6

### Strong Aluminum Alloy Round Tie Wire

Shipped in 10, 25 and 50 pound coils.

Size A.W.G.	Diam. In.	Tensile Str., Lb.	Wt., Lb. per 1000 Ft.
Aluminum Tie Wire No. 6	0.162	210	24.2
Strong Aluminum Alloy Tie Wire No. 7	0.144	425	18.9

### Armor Rods for ACSR

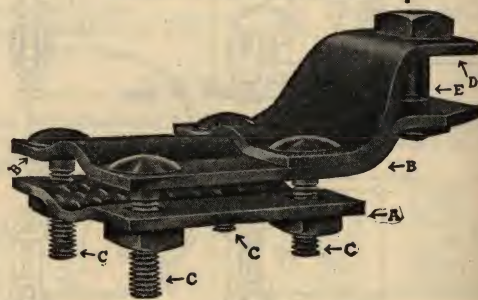


Shipped in straight bundles tied in sets at each end and at intervals not exceeding 18 inches.

Single Support		Double Support		Type	*ACSR Size	Rod per Set	Req. Clip No.	Req. Wrench Size	Req. Die No.
No.	Wt., Lb. per Set	No.	Wt., Lb. per Set						
1124	0.54	1154	0.71	Straight	4	8	1103	C	†4203
1126	0.63	1156	0.80	Straight	2	10	1103	C	†4205
1128.1	1.14	1158.1	1.51	Straight	1/0	10	1105	C	†4207
1129	1.12	1159	1.45	Straight	2/0	12	1105	C	†4225
1130	1.54	1160	1.95	Straight	3/0	12	1106	C	†4225
1131	2.11	1161	2.63	Straight	4/0	12	1107	C	†4225
1241	1.22	1291	1.68	Tapered	2/0	10	1104	C	†4207
1245	1.51	1295	2.10	Tapered	3/0	10	1105	C	†4209
1249	1.87	1299	2.70	Tapered	4/0	10	1105	C	†4209

\*Same for both conductor strands. †Wrench size "E" with integral die may be used. ‡Wrench size "D" with integral die may be used.

### Matthews Cable Clamps



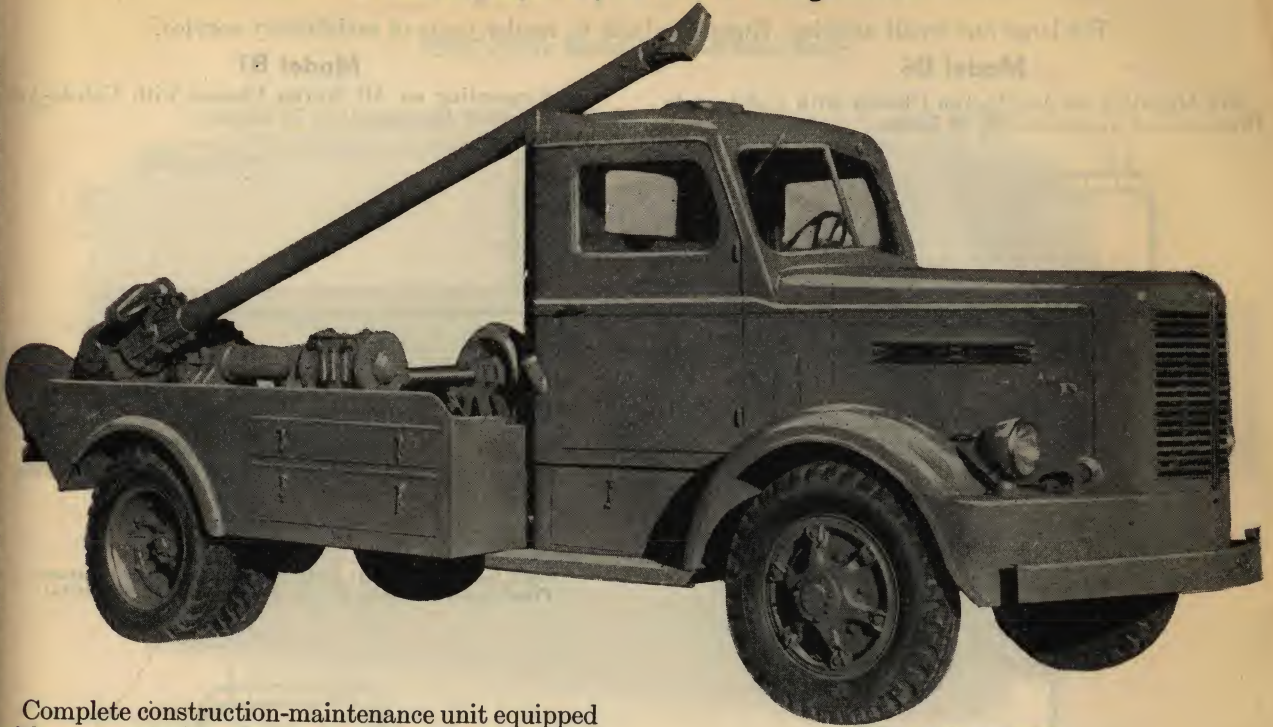
Galvanized cable clamp for use on all copper power cables from 000 to 1,500,000 C.M. inclusive. Designed to do away with the need for costly splices, hazardous soldering operations and waste of costly cable, where power cable is used in industrial plants or on transmission cables, where strains do not exceed 1200 pounds. For a.c. cables, the No. 3 clamp has two of the carriage bolts, C, on one side, made of Everdur to break the magnetic field. When used on cables carrying d.c., the four carriage bolts, C, are made of hot galvanized steel. Steel clamping plates, A, B, and D, and the steel strain insulator bolt, E, are hot galvanized.

No. 2, Shipping Weight per 100, 400 Pounds....each \$3.60

No. 3, Shipping Weight per 100, 400 Pounds....each 4.60

Prices quoted are for small quantities. Write for quotations on large quantities.



**FWD Light Duty Earth Boring Units**

Complete construction-maintenance unit equipped with roomy platform body, single drum winch, earth boring machine with integral type derrick, fully enclosed drive, attractive coupe type cab, and other accessory equipment.

Ideal for large or small utility. Bores holes 16 to 20 inches in diameter, 7-feet deep.

Handles poles up to 45 feet in length.

**Specifications**

Gross vehicle weight, 17,000 pounds. Brake horsepower, 95 at 2800 revolutions per minute. Wheelbase, 144 inches. Tread, 69 inches. Tires, 8:25x20; duals rear.

Complete specifications and information furnished upon request.

**FWD Heavy Duty Earth Boring and Pole Setting Machines**

For Power Line Construction



For boring holes up to 56 inches in diameter, 12-feet deep through ice, frost, sandstone, shale, or any soil that can be dug by hand without blasting.

Features 180° turntable, derrick integral with borer, and power elevated boring tower. Write for Bulletin No. 452 for complete information.

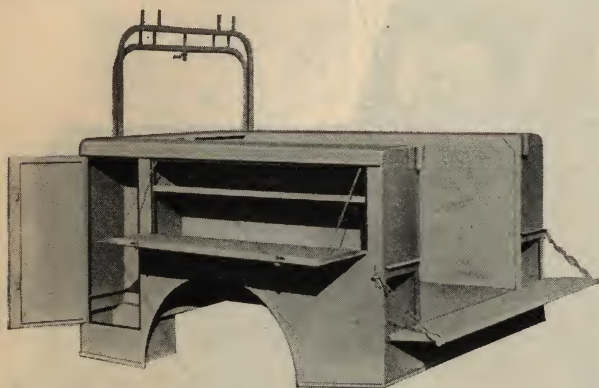


## FWD All Steel Pick-Up Bodies

For large and small utilities. Ruggedly built to render years of satisfactory service.

### Model B6

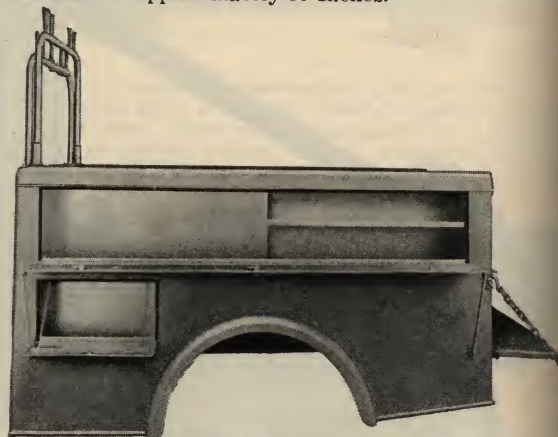
For Mounting on Any  $\frac{1}{2}$ -Ton Chassis with Cab-to-Axle Dimension of Approximately 38 Inches.



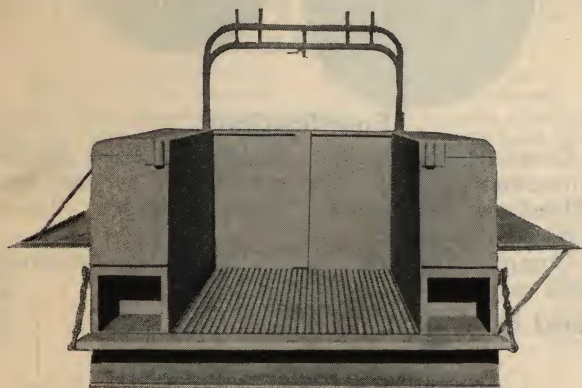
Left Side View of Model B6 Body Showing Spacious Compartments and Ladder Racks in Forward Position

### Model B7

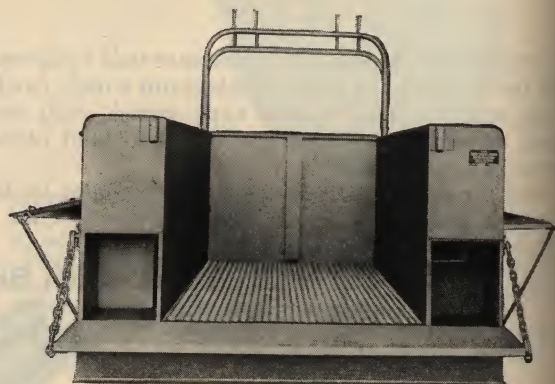
For mounting on All  $\frac{3}{4}$ -Ton Chassis with Cab-to-Axle Dimension of Approximately 50 Inches.



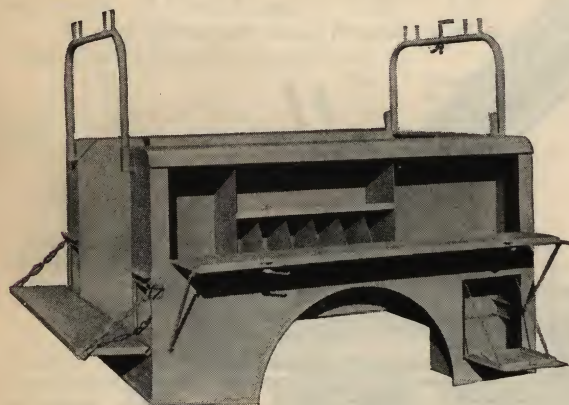
Right Side of Model B7 Body Showing Dust and Moisture Proof Compartments. All-Steel, Compact, and Practical



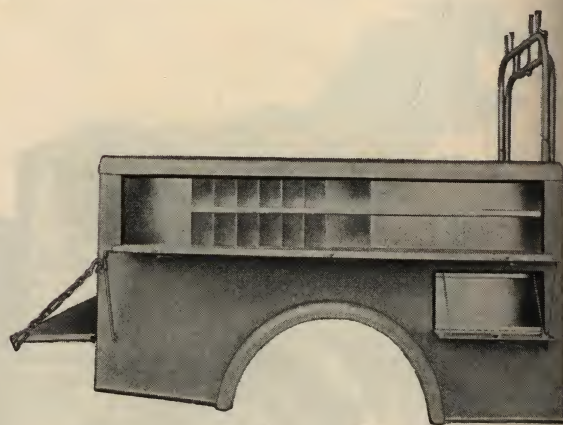
Rear View of Model B6 Body Showing Corrugated Floor Which Is Double Thick in Center to Insure Maximum Strength



Rear View. Body Has 30 Square Feet of Floor Space



Right Side of Model B6 Body. All Compartments are Weather Stripped; Dust and Moisture-proof



Left Side. Ladder Racks Shown in Forward Resting Position

### Specifications

Model B6 is of durable construction, built for long, economical service.

Length, 74 inches. Width, 67 inches. Floor width between compartments, 42 inches.

Weight, approximately 600 pounds.

### Specifications

Length, 84 inches. Width, 67 inches. Floor width between compartments, 42 inches.

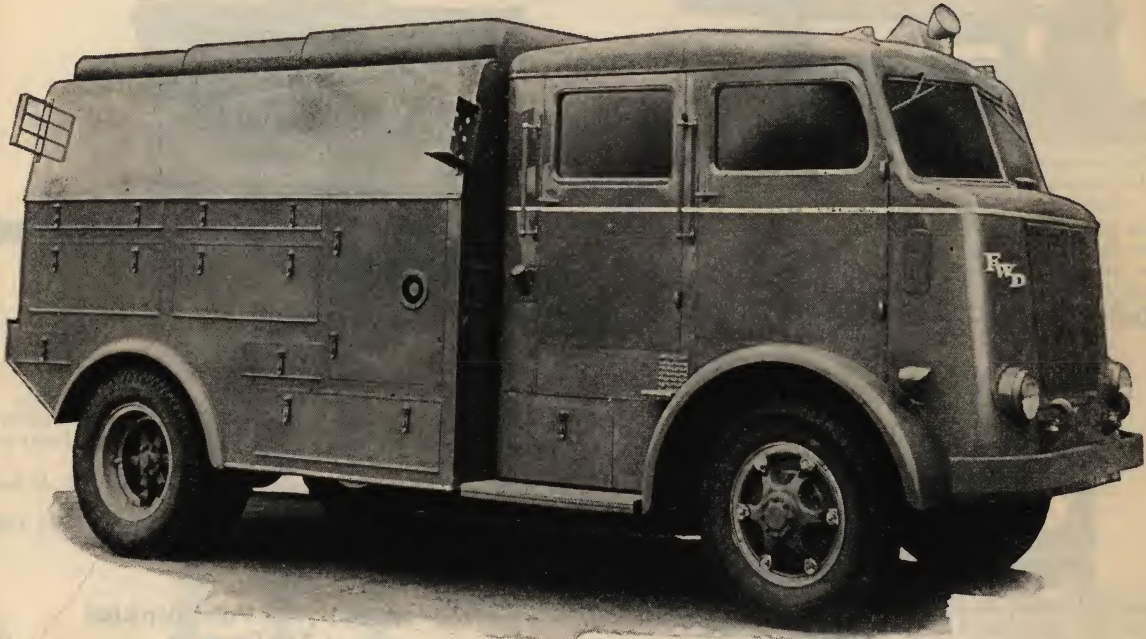
Weight, approximately, 975 pounds.

**Complete Information and Prices Furnished upon Request**



## FWD Line Construction and Maintenance Units

With Utility Model U-10 All Steel Body



Model U-10 all steel body designed for large and small utility companies is highly adaptable for mounting winch, derrick, boring machine and other accessories. For mounting on all makes of trucks with a cab-to-axle dimension of approximately 84 inches.

This line construction and maintenance unit is furnished complete as shown.

### Body Specifications

Dimensions: length, 123½ inches; height, 78 inches; and width, 90 inches.

Winch compartment is 62 inches wide, and 20 inches high, and 24 inches deep.

Write for complete information and prices.

### Model 1417 Towing Hooks



For trucks up to 3½-ton capacity.

Attaches to frame of truck with braces to the side bars.

Has coil spring to cushion starting and stopping shocks.

Positive locking latch eliminates danger of uncoupling.

Weight, 48 pounds.

Prices upon request.

### Type L Draw Bars



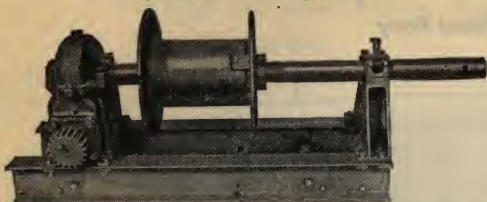
For use with pole dinkey and light trucks. Attaches to wood pole and forms link for connecting to pintle hook on truck. Inside diameter of pintle eye ring, 2½ inches.

Weight, 31 pounds.

Prices upon request.



### No. L-12 Single Drum Winches 10,000-Pound Capacity

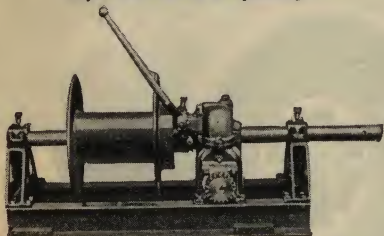


Modified version of the single drum winch, furnished without clutch or brake as winch must be power driven when pulling, raising or lowering load. Ideal for every purpose requiring pulling rope on a drum.

Automatic winch worm brake is standard equipment.

Drum measures 12 inches between flanges; holds 600 feet of  $\frac{1}{2}$ -inch steel cable. Weight, approximately 430 pounds.

### Model L-12-CD Single Drum Winches 10,000-Pound Capacity

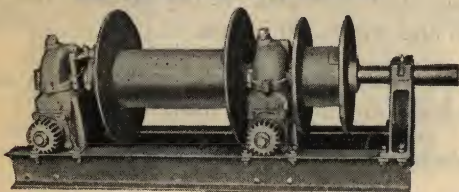


Basically the same as Model L-12 winch except that it is equipped with clutch and brake and free spooling drum.

Automatic winch worm brake is standard.

Drum measures 12 inches between flanges; holds 600 feet of  $\frac{1}{2}$ -inch steel cable. Weight, approximately 516 pounds.

### Double Drum Winches Models WD-126 and WD-186



An exceptionally sturdy double drum winch. Large drum measures 18 inches between flanges; holds 909 feet of  $\frac{1}{2}$ -inch steel cable, and is furnished with clutch and brake.

Small drum, which may be operated independently, is available in 6-inch size. Large drum on Model WD-126 measures 12 inches; small drum measures 6 inches.

Automatic winch worm brake standard on both units. Weight, approximately 880 pounds.

### Model CR Collapsible Power Reels

Picks up loose wire in neat, compact roll. Attaches to winch by means of pin type socket.

Cast of aluminum.

### Pole Binders



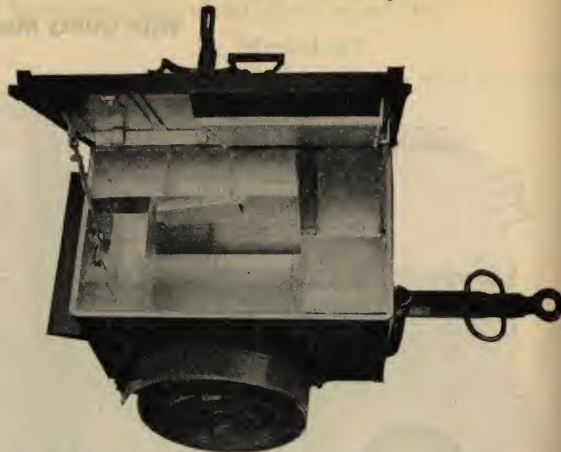
A small winch with a ratchet type holding attachment. For all bulky loads.

Furnished with 18 feet of  $\frac{5}{16}$ -inch steel cable, carried on drum.

Weight, 18½ pounds.



### Model S Cable Splicer's Carts 1000-Pound Capacity



An all steel, compact, rugged, and theft-proof cart.

Compartments provide a place for every tool within easy reach of the splicer. A folding leg supports the front end of the cart when parked.

Dimensions: overall length, 74 inches; height, 41 inches; axle,  $1\frac{1}{4}$ -inch square; tread, 34 inches.

Has steel disc wheels; Timken bearings; tires 4:00x18, 4-ply.

Weight, 480 pounds.

### Model 1775 Pole Dinkies 1-Ton Capacity



For light construction or repair work.

Triangular shaped tongue is two 3-inch, 5-pound channel beams. Bolsters are cast steel. Overall length, 104 inches. Axle is heat treated, high carbon steel 2 inches square.

Tires, 6.00x16 singles 6-ply or 6.00x20 singles 6-ply. Tread, 56 inches.

Weight, 390 pounds.

### Winch Line Hooks



For attaching two wire rope lines as used on truck winches.

It attaches easily and quickly to a line or loop and holds firmly until the pole is set. Slack in the line then permits detaching from ground with pike pole.

As line must be threaded through derrick sheave a hook that detaches easily increases the efficiency of the line crew. Weight, 4½ pounds.

### Safety Hooks



Used with derrick and truck winch when raising derrick to operating position. Line is passed over spindle bar and threaded through the derrick sheave then attached to the safety hook. Winch power will then raise the derrick so it can be bolted in place by the linemen.

Hook is forged steel, designed so that the heaviest load is carried on the heavy section of the hook.

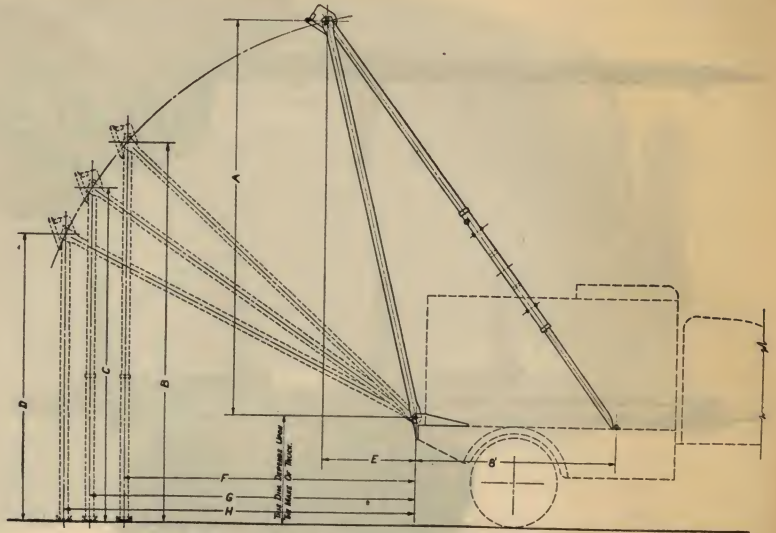
Weight, 3½ pounds.

Prices upon Request



## Utility Derricks Middle Type

Models M-35, M-40, M-45, and M-2870

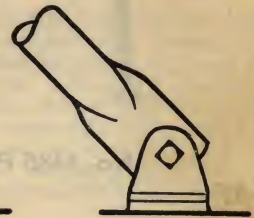


Utility derricks have kept pace with modern telephone, telegraph, and electric light and power line construction and maintenance methods. Designed by A.T. & T., the world's largest user of pole derricks, their specifications are adhered to in every detail of manufacture. Utility derricks are standard equipment on the majority of Bell system line construction trucks.

Model	COMPARISON DERRICK DIMENSIONS ASSEMBLED							
	A	B	C	D	E	F	G	H
M-35	15'	14'6"	12'9"	11'	3'9"	11'6"	12'11"	13'11"
M-40	18'8"	16'11"	13'11"	11'	3'5"	14'9"	16'3"	17'8"
M-45	20'3"	18'10"	13'10"	11'	6'9"	15'5"	19'1"	20'5"
M-2870	25'4"	21'5"	16'5"	13'7"	6'	19'6"	23'1"	24'4"



Standard Foot Type  
Center Leg Lower Section



Hinge Type  
Center Leg Lower Section  
(Optional—No Charge)

Available in four models: The M-35 for poles up to 35 feet in length, the M-40 for poles up to 45 feet in length, the M-45 for poles up to 55 feet in length, and the M-2870 for poles up to 70 feet in length.

Each derrick is designed and built to insure an ample reserve of strength for the safety of men and equipment. All models can be furnished with telescoping side legs at slight additional cost.

	LIFTING CAPACITIES, POUNDS			
	M-35	M-40	M-45	M-2870
Ground Position, Center Leg, Fully Telescoped....	10000	10000	12000	13500
Ground Position, Center Leg, Fully Extended....	6000	6000	7200	10000
Truck Position.....	2500	3000	4000	5000

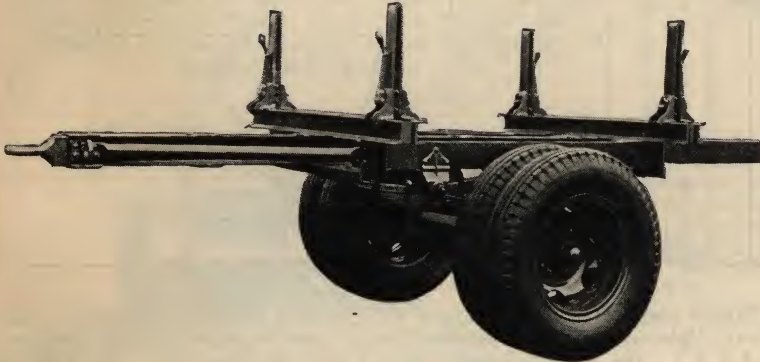


**Model P8T Combination Cargo and Pole Trailers**

The most complete combination, dual purpose trailer thus far developed.

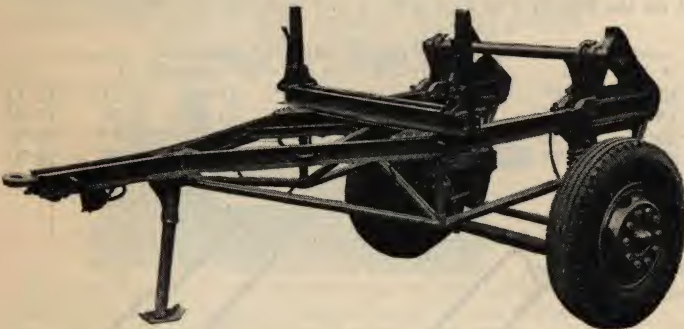
Available with or without fenders, side boards, pole carrying bolsters, load binders, brakes, or extension tongue.

Capacity from 4200 to 9800 pounds depending on tire size.

**Models M and H Heavy Duty Pole Trailers****3 and 5-Ton Capacities**

Exceptionally rugged. Built for hard usage and long trailer life.

Construction features include extension type tongue, adjustable cam locking uprights, heavy duty wheel bearings, and overall safety factors 50 per cent in excess of actual rated capacity.

**Combination Cable Reel and Pole Trailers****Models PCP and W-PCP**

An easily convertible cable reel and pole trailer. Converted by using simple hand tools.

Ideal for the utility whose requirements do not demand full-time use of two separate units. Model PCP handles cable reels from 34 to 38 inches and Model W-PCP, reels from 44 to 48 inches in width.

Furnished complete with set of bolsters, cam locking uprights, and cable reel saddles.

**No. 1485 Pole Dinkies**

All steel especially constructed for the exceptionally hard service of hauling poles. Wide tread permits high speed hauling when empty, without danger of it turning over. Tubular type axle gives maximum strength with least possible weight. Capacity, 3 to 4 tons.

**No. 1485-A Pole Dinkies**

For high speed hauling and rugged service. Has tubular tongue and axle to insure the greatest strength with a minimum of weight. Rear bunk balances trailer. Permits easier handling when empty. Capacity, 3 to 4 tons.

**Write for Complete Information and Prices**



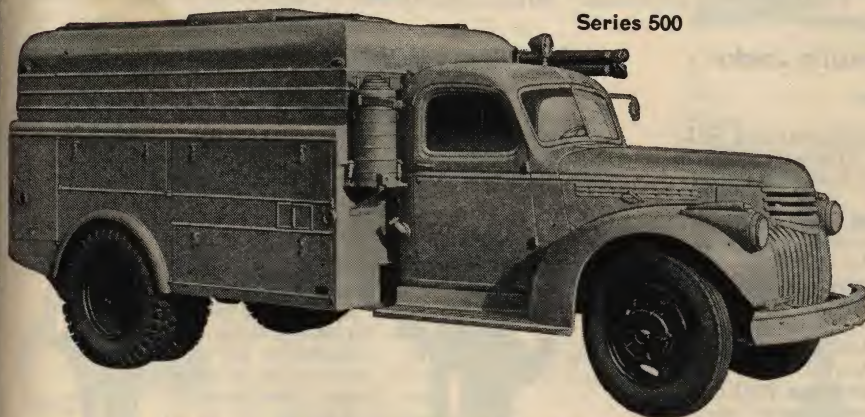
## Powers Truck Bodies For Construction and General Maintenance Series 600



**Series 600C Line Construction and General Maintenance Body**

Designed for efficiency and crew comfort. Powers' engineering and experience in building line bodies for utilities is the assurance of well-designed, well-balanced equipment, properly arranged to carry all tools and supplies for construction and maintenance. In the Series 600C model, special attention has been given to crew accommodations. A roomy compartment in the forward part of the body seats 4 men, while 3 more ride in the truck cab.

Line construction bodies and all accessories are available as a complete package unit.



**Series 500**

Powers' makes a complete line of standardized bodies for construction and general maintenance service, each model designed and constructed to meet the most exacting requirements.

Series 500 embodies the latest improvements and conveniences suggested by utility engineers and operators. Standard equipment includes a winch and pole derrick. Body comes with either telescopic steel roof or open top with tarpaulin. Models available for all conventional or C.O.E. chassis.

All equipment is carried inside of body.

**Series 500 Line Construction and General Maintenance Body**

Ideal for all types of general service utility work—electric, gas, water, street light maintenance, and telephone. Standardized models also available for plumbing, heating, and other service contractors.

All models of the general service line are available with a 24-foot, two section extension ladder and hinged ladder rack assembly.

Cast aluminum fittings on ladder rack reduce overall weight and permit easy adjustment to fit equipment carried.

**Series 25M.** For  $\frac{1}{2}$ -ton chassis.

**Series 35M.** For  $\frac{3}{4}$ -ton chassis.

**Series 50M.** For  $\frac{1}{2}$ -ton chassis.

**Series 55M.** For  $\frac{1}{2}$ -ton chassis.

**Series 60M.** For  $\frac{3}{4}$ -ton chassis.

**Series 65M.** For  $\frac{3}{4}$ -ton chassis.

### General Service Bodies

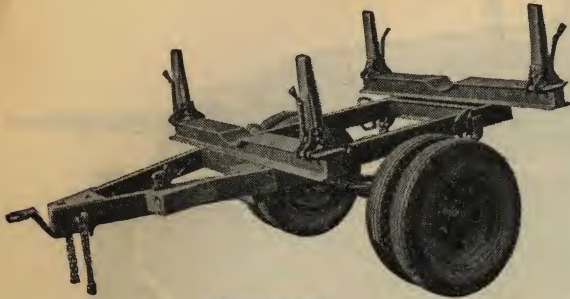


**Series 25-M General Service Body**

**Complete Bulletins Furnished on Request**



### Powers Trailers For Utility Operation



Model AP-30

Designed to give long, trouble-free service under all conditions. Nos. A-20 (2-ton), A-30 (3-ton), and A-50 (5-ton), have their forward frame ends tapered to a forged

drawbar eye. This type trailer employs the center pole of the load as a tongue by attaching a drawbar clamp to the pole. The drawbar eye is used for pulling trailer when unloaded.

Models AP-30 (3-ton) and AP-50 (5-ton), have an adjustable tubular steel tongue which eliminates use of drawbar. The 5-ton unit, in both models (A-50 and AP-50), is equipped with 6-leaf helper springs. The total load of poles is carried on the trailer in all models, thus permitting loaded trailer to be handled behind any type of line construction body.

Each of the wide double channel bolsters is equipped with two tension type, adjustable slide cam locking stanchions, and center pole saddle.

The spring suspension and mounting of axle is designed to carry maximum loads and to take care of the added stresses of power brake application. Has 10-leaf main springs.

Cab controlled electric or hydraulic brakes are available.

Model.....	
Rated Capacity.....	tons
Size of Rolled Channel Frame.....	inches
Size of Bolster Channels.....	inches
Size of Axle, Square.....	inches
Axle Capacity.....	pounds
Size of Tires (Recommended).....	
Tread.....	inches
Overall Width.....	inches
Size of Main Springs.....	inches
Size of Helper Springs.....	inches

#### —Tapered to Drawbar Eye Tongue—

A-20	A-30	A-50	Adjustable Tabular Tongue	
2	3	5	AP-30	AP-50
4	5	5	3	5
4	5	5	5	5
2	2½	3	5	5
5000	7000	12000	2½	3
32x6	7.50x20	7.00x20	7000	12000
58	63	66½	7.50x20	7.00x20
60	70	80	63	66½
5/16x2½	5/16x2½	5/16x2½	70	80
None	None	5/16x2½	5/16x2½	5/16x2½
		5/16x2½	None	5/16x2½

### Accessories for Motor Transportation Equipment

Winches	Universal Sheave Blocks	CR Reels	Spotlights	Pole Setting Spool	Safety Hooks	Draw Bars
Power Takeoffs	Pintle Hooks	Water Casks	Road Flares	Flag and Fusee Kits	Quick Hooks	Tire Carriers
Derricks	PR Reels	Ladders	Caboscopes	Winch Line Holders	Pole Binders	Helper Springs

### Duff-Norton Hy-Power Hydraulic Jacks

#### 3 to 50-Ton Capacities



No. 3H9

Used for industrial and rail-road service. Operates in both vertical and horizontal positions.

**3 to 12-Ton Sizes.** With extension screw which can be run up quickly by hand to load height, lifting starts with the first stroke of the lever bar. Heavily ribbed base is of one piece malleable iron with integral pump barrel.

**20 to 50-Ton Sizes.** With dual pumps. Speed pump brings head up to load position instantly, switchover to power pump is automatic without changing or missing a lever stroke. Base is of special alloy steel with armor plate steel guards to protect pump barrels.

Ram and cylinder are high carbon seamless steel tubing, accurately machined and ground to gages for close sliding fit. Lowering of load safely controlled at any speed.

No.	Each	Cap. Tons	Closed Extension Ht. In.	Screw Raise In.	Power Ht. In.	Total Ht. In.	Head Diam. In.	Size Base Inches	Handle Lgt. In.	Wt. Lb.
3H9	....	3	8½	3½	6	18	1½	3¼x6½	33½	16
5H9	....	5	9	4	6¼	19¼	1½	4½x7½	33½	19
8H9	....	8	9	4¼	6¼	19½	1½	4½x7½	33½	22
12H9	....	12	9¼	3¾	5½	18	1¾	4½x8¾	23½	28
20H11	....	20	11	...	7¾	18¾	2¼	6½x7¾	23½	50
25H10	....	25	10	...	6¾	16¾	2¼	6½x7¾	*23½	48
30H11	....	30	11	...	7¾	18¾	2½	6¼x8	23½	67
50H11	....	50	11	...	6	17	3½	8 x9¾	23½	110

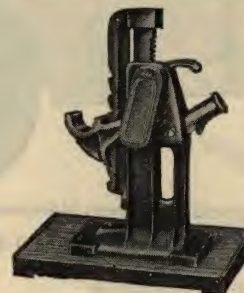
\*Pinch bar end.

### Duff-Norton Genuine Barrett Ratchet Reel Jacks

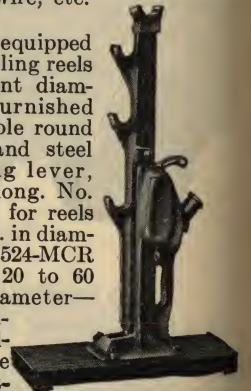
#### Single Acting — Automatic Lowering—5, 10 and 15-Ton Capacities

Used to handle reels of cable, wire, etc. Hooks will seat 2-inch spindles.

**Nos. 516-MCR and 524-MCR** equipped with adjustable hook lifts for handling reels of different diameters. Furnished with double round sockets and steel operating lever, 1x30 in. long. No. 516-MCR for reels 15 to 40 in. in diameter. No. 524-MCR for reels 20 to 60 in. in diameter—has reinforced solid oak base for use outdoors.



No. 524-M-CR



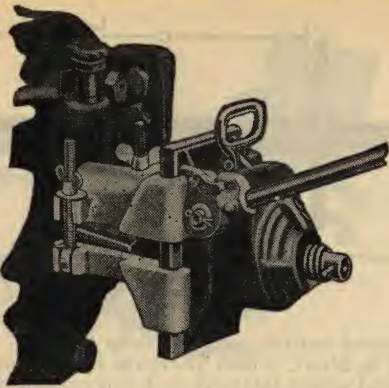
No. 1022-CR

**Nos. 1022-CR and 1522-CR** equipped with extra long lifting racks with hooks placed at various heights for handling reels of different sizes. Furnished with single round socket and steel operating lever, 1¼x62 inches long. No. 1022-CR, hooks located 12, 22½, 33 and 38 inches from ground level for handling reels from 25 to 90 inches in diameter; housing bolted to solid oak base. No. 1522-CR, hooks located 18, 26, 34 and 39 inches from ground level for handling reels from 38 to 90 inches in diameter; reinforced oak base has quick detachable clamps.

No.	Each	Cap. Tons	516-MCR	524-MCR	1022-CR	1522-CR
Each.....			\$37.00	50.00	82.00	110.00
Capacity.....	tons		5	5	10	15
Height.....	inches		16	21	38	39
Raise.....	inches		9	14	12	11
Base.....	inches		5½x7¾	9x19	9¾x24	10x24
Weight.....	pounds		42	68	100	138



## No. 55 Duff-Norton Pinion Pullers



Used to pull pinions, remove pulleys, small flywheels, etc. from shafts.

Also used for servicing bridge wheels and bearings of overhead cranes.

Pull is uniform around the entire periphery of the pinion. Worm and screw action effects a strong force.

Housing and jaws are electric-steel castings. Worm and screw are case hardened steel. Ball bearings throughout.

No. 55, Weight 50 pounds.....each \$120.00

### Extra Jaws

No.	Each	DIMENSIONS, INCHES			Weight Pounds
		*A	†B	‡C	
J-553	\$35.00	3½	5½	6¼	25
J-555	42.00	5	8¼	6¼	30
J-557	56.00	7¾	10¾	6¼	39
J-5510	63.00	10	11½	6½	45
J-5511	70.00	11	12½	6½	55

\*Minimum outside diameter of pinion that can be pulled.

†Maximum outside diameter of pinion that can be pulled.

‡Maximum allowable distance of inner edge of pinion from end of shaft.

## No. 500 Duff-Norton Genuine Barrett Pole Jacks

### Capacity, 15 Tons

For lifting, straightening or moving poles of all kinds. Eliminates the necessity of digging around stumps before moving or straightening.

Height, 37½ inches.

Raise, 23 inches.

Furnished complete with operating lever, 10 feet of ¾-inch chain and channel base.

Weight, 250 pounds.

No. 500, With Chain.....each \$110.00

No. 500, Without Chain.....each 99.50

## No. 529 Duff-Norton Small Pole Pulling Jacks Capacity, 5 Tons

Designed especially for lifting or moving small poles, such as are found on rural lines, quickly and easily. Has top lift and chain lift.

Poles are handled by means of the sling, which consists of a forged steel chain and hook. Chain fits into slot in top of jack.

Height, 28 inches. Raise, 18 inches.

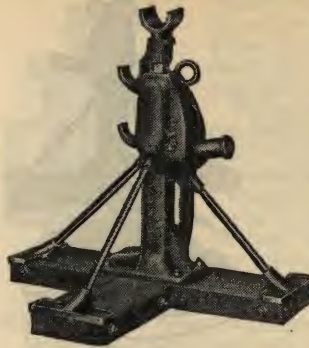
Weight, 91 pounds.

No. 529, with Chain.....each \$68.00

No. 529, without Chain....each 65.75

Deduct \$1.00 for lever bar if not required.

## No. 1030-CR Duff-Norton Automatic Lowering Cable Reel Jacks With T Base—10-Ton Capacity



For heavy cable reels 20 to 84 inches in diameter, and for outside work where uneven ground conditions are encountered.

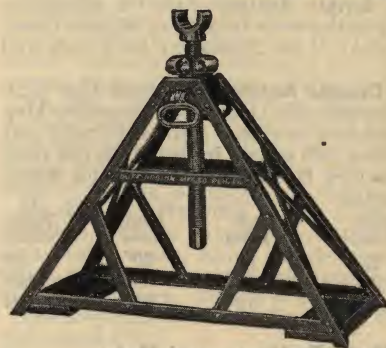
Attached to a T-frame base which has been sectioned to prevent warping. Top hook is for 3-inch diameter spindles, the two lower hooks for 2½-inch diameter spindles.

Height 30 inches. Raise, 14 inches.

Weight, 110 pounds

No. 1030-CR...each \$92.00

## Duff-Norton Screw Type Cable Reel Jacks 5-Ton Capacity



Used by utility companies. Reliable and efficient. To operate, lift the curved cap to the reel spindle, spin the 3-way nut down to the frame, and insert a ¾-inch steel bar in the 3-way nut and turn.

Lifting hook will accommodate up to 2¼-inch diameter spindles.

No.....	520-CR	530-CR
Each.....	\$32.00	42.00
For Reels, Diameter.....inches	42 to 60	60 to 90
Closed Height.....inches	20	30
Raise.....inches	11½	16½
Weight.....pounds	66	90

## Simplex Screw Type Reel or Drum Jacks



No. 1CR



No. 3CR

For economically handling heavy reels. Has one spindle cap for 2¼-inch spindles.

No. 1CR for reels 40 to 60 inches in diameter, No. 2CR for 60 to 92-inch reels. The 3-way nut makes it possible to operate easily and quickly.

No. 3CR for reels 50 to 84 inches in diameter, recommended for heavy duty field work. Braced T-base has area of 240 square inches. Has ratchet lever socket, 42-inch lever.

No.....	1CR	2CR	3CR
Each.....	\$32.00	42.00	48.00
Capacity.....tons	5	5	15
Height.....inches	19¾	30½	25½
Lift.....inches	11½	16½	17½
Weight.....pounds	60	88	72



Simplex Reel or Drum Jacks  
5 and 10-Ton Capacities  
Ratchet Lowering



No. 320A



No. 322

Equipped with laminated, oil treated, oak bases.  
**No. 320A (5 Tons), Single Acting**—For warehouse and shop service. Handles reels from 20 to 60-inch diameters. Has 3 lifting hooks: 1 for 2½-inch and 2 for 2-inch spindles.

**No. 321 (10 Tons), Single Acting**—Also for warehouse and shop service, but handles reels from 20 to 96-inch diameters. Has 5 lifting hooks: 1 for 3½-inch, 1 for 3-inch, and 3 for 2½-inch spindles.

**No. 322 (10 Tons), Double Acting**—T shaped base with the 3-threaded and adjustable steel rods insures a non-rocking foundation for heavy outdoor service. Built with right and left hand bases; base area, 319 square inches. Handles reels from 36 to 84-inch diameters. Has 3 lifting hooks: 1 for 3-inch and 2 for 2½-inch spindles.

No.	Each	Height Inches	Lift Inches	Length Lever	Weight Pounds
320A	\$50.00	21	10	30"	48
321	82.00	34¼	15	60"	108
322	92.00	29	13¾	60"	104

Simplex Pole Pulling and Pole  
Straightening Jacks



No. 329

For pulling or straightening telephone, telegraph, electric power and trolley poles quickly, without digging, and regardless of size or depth in the ground.

One or two men can pull or straighten poles, pull butts, or move loaded poles without interrupting service.

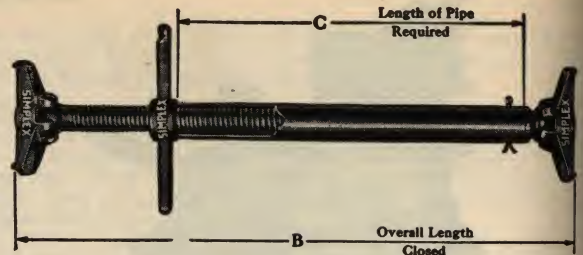
Nos. 325 and 329 are single acting and ratchet lowering.

No. 325 is a 5-ton jack, light, and durable, for pulling 25 and 30-foot poles, straightening poles, and for tightening guy lines. No. 329 is a 15-ton jack.

Standard equipment of the No. 325: a 4-foot steel pinch bar lever; 5-foot steel chain; an 8x15-inch steel channel base; 8-foot pike pole, equipped with a malleable iron forked cap for biting into wood for straightening poles. Standard equipment of the No. 329: an 8-foot scarf-welded BBB steel chain, fitted with pear-shaped link; a 10x24-inch I-beam base with hand hole; and a 5-foot steel lever bar.

No.	325	329
Each	\$78.00	110.00
Capacity	5	15
Height	50	37¾
Lift	36	22
Weight of Jack	34	95
Weight Complete	98	193

Simplex Drop-Forged Steel Trench Braces



Complete with Pipe

Constructed entirely of steel drop forgings. The safety lever nut is blunt, which prevents injuries and damage. The ball and socket joints at each end permit quick adjustment and tight gripping at all angles. Three way nuts can be furnished in lieu of lever nuts at no extra cost.

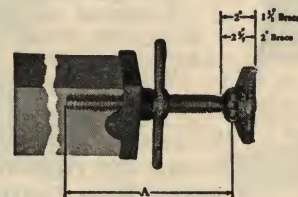
Specifications Complete with Pipe

No.	Per Dozen	Pipe and Screw Diam. Inches	A Length of Brace Closed Inches	B Length of Brace Closed Inches	C Length of Pipe Inches	Safe Extension of Screw Inches	Wt. Lb. per Doz. with Pipe
2	\$69.00	1½	12	18	10½	7	193
3	72.00	1½	14	21	13½	9	210
4	72.00	1½	14	24	16½	9	218
5	78.00	1½	16	27	19½	10	235
6	78.00	1½	16	30	22½	10	243
10	153.00	2	18	36	26	10	480
11	156.00	2	18	42	32	10	502
12	159.00	2	18	48	38	10	524
13	162.00	2	18	54	44	10	545
14	165.00	2	18	60	50	10	567

Specifications without Pipe

No.	Without Pipe per Dozen	Screw Ends Only per Dozen	Socket Butts Only per Dozen	Diameter Screw Inches	Length Screw Inches	Safe Extension of Screw Inches	Weight Pounds per Dozen
16	\$60.00	\$45.00	\$15.00	1½	12	7	164
17	63.00	48.00	15.00	1½	14	9	173
18	66.00	51.00	15.00	1½	16	10	182
20	135.00	99.00	36.00	2	18	10	385

Simplex Drop-Forged Timber Braces



Especially valuable and practical for wide and deep trenches; also for foundation and subway work.

The screw ends are the same as the Simplex Trench Braces. Timbers are not furnished.

Three-way nuts can be furnished in lieu of lever nuts at no extra charge.

No.	21	22	24	25
Per Dozen Sets	\$70.50	\$78.00	\$129.00	\$144.00
Timber Caps. per doz.	22.50	30.00	30.00	45.00
Diameter Screw	1½	1½	2	2
A, Length Screw	14	14	18	18
Size Timber Caps.	4x4	6x6	6x6	8x8
Weight per Doz.	133	169	343	353



## Simplex Util-A-Tools



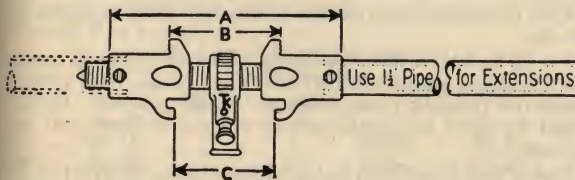
This tool pushes objects apart on the drop forged and corrugated nut ends, or on pipes inserted in nut wells or on the spreading lugs.

It pulls together, using chains with the sky hooks, which are inserted in the nut holes, or on clamping lugs.

It lifts when the triangular snap-on base is attached. Pulls spoked or solid center wheels and gears by attaching the three-way chain base, centering the live center in the shaft after removing the nut and connecting the three chains with the base and object to be pulled.

Util-A-Tool clamps parts for welding or assembly; straightens bent objects; bends pipe and structural steel members; loosens and pulls frozen objects; tensions guy wires; holds down portable machines, etc.

Specifications



Dimension A.....	inches	9 1/4
Dimension B.....	inches	3 1/2
Dimension C.....	inches	2 3/4
Capacity, on Lugs of Nuts.....	tons	2 1/2
Rated Capacity.....	tons	10

	Prices				
No.....	610	612	614	616	618
Each.....	\$18.50	19.00	19.50	20.00	20.50
Length Screw.....inches	10	12	14	16	18
Screw Travel.....inches	4 3/4	6 3/4	8 3/4	10 3/4	12 3/4
Weight.....pounds	11	12	13	14	15

### Util-a-Tool Maintenance Sets

Set consists of the following:

*No. 610 Simplex Util-A-Tool.....each	\$18.50
Sky Hooks (2), Drop Forged, Chrome Nickel Steel.....	4.80
3-Way Base, Drop Forged Steel, Heat Treated.....each	5.50
No. 3-A Spreader Jack.....each	3.40
1/2x40-Inch Heat Treated Chains (3), Fitted with Drop Forged Grab Hooks and Grab Claws.....	18.50
3/4 Inch Round by 18 Inches Long Chisel Pointed Lever Bar, Drop Forged, Heat Treated.....each	1.00
18x8x8-Inch Steel Tool Box for Carrying Set....each	4.30
Complete Set with Tool Box; Weight, 78 Pounds.....each	56.00

\*The Nos. 612, 614, 616 or 618 may be substituted in the maintenance set (see prices above). The jacks may be purchased with any of the equipment.

Stud links (3), drop forged steel, heat treated, \$3.30.

## Simplex-Jenny Center Hole Hydraulic Pullers

Used for pulling stern tubes of ships, cylinder liners, pistons, valve seats, wrist pins, bushings, wheels, gears, propellers, boiler tubes, shafts, etc. Used in shipyards for pulling-in coupling bolts through propeller shaft flanges, assuring a tight fit. Also pushes, lifts, and can easily be rigged up to press.



Will stretch or part any mild steel rod that can fit through the center hole; alloy steel pull rods or puller stems are recommended.

Operates straight, vertically or horizontally without side thrust or self-binding friction and without need for any other equipment or rigging. Is its own back-up and is self-supporting because of its center hole construction.

Tubular ram is raised or pushed out by operating the pump. It is a self-contained unit made of tough, heat-treated steel throughout. Self-retracting when the release valve is opened reducing set-up time.

Drilled and tapped for pressure gauge which can be furnished when specified. This gauge accurately shows the tonnage developed and is useful in testing tensile strength.

**No. 303.** Single pump type used to pull cylinder liners, to form ship and boiler plates and to straighten out bulges in plates. Pulls bulkheads together, structural members or double bottoms for welding or riveting; eliminates use of impact wrenches, air hose. Pulls off bolts, pins, etc.

**No. 606.** Double pump type, high and low speed, can be operated separately, alternately or together. Designed for long and heavy pulls. Used in shipyards, mines, railroad shops, oil fields, construction and general industry. Also used for pulling in utility service pipe.

**No. 803 and No. 1003.** Single pump type. Used to pull bushings, cutless bearings, cylinder liners, pistons, wrist pins, valve seats, keys, wheels, sprockets, gears, boiler tubes, pipes, etc. In shipyards, used for pressing on and pulling off propellers. Length of lever, 19 inches.

Use only Simplex-Jenny Hydraulic Oil. (De-waxed—pour test minus 5°F.)

	303	606	803	1003
No.....				
Each.....	\$130.00	225.00	175.00	175.00
Capacity.....tons	30	60	80	100
Diameter Center Hole.....in.	1 1/8	2 1/8	3 1/8	2 1/8
Outside Diameter.....inches	4 1/4	6 1/2	7 1/4	7 1/4
Height.....inches	9 1/8	14	10	10
Travel.....inches	3 1/4	6	3 1/4	3 1/4
Oil.....pints	1 1/4	4	2	3
Weight.....pounds	32	92	75	72

Price of lifting cap on application.

If gauge is desired, add \$23.75 to price.

### No. 10010 Simplex-Jenny Center Hole Hydraulic Pullers

**Heavy Duty,** 100 ton, double pump unit is especially designed for pulling in the stern tubes of all types of ships. Is also used for heavy bushing jobs. Valve gears and pistons can be pulled from the largest sump or slush pumps in a fraction of the time required by old methods. Stern tubes are installed in hulls using two Simplex-Jenny center hole hydraulic pullers, with two 2-inch diameter alloy steel pull rods. Tonnage developed on these jobs ranges from 75 to 200 tons.



Length of lever, 19 inches.

A pressure gauge, calibrated in tons for direct reading, is furnished as standard equipment.

Lifting cap available.

Use only Simplex-Jenny Hydraulic Oil. (De-waxed—pour test minus 5°F.)

No. 10010.....	each	\$405.00
Capacity.....tons	100	
Diameter Center Hole.....inches	2 3/4	
Height.....inches	19 1/2	
Travel.....inches	10	
Oil.....pints	10	
Weight.....pounds	225	



## Simplex Heavy Duty Hydraulic Jacks



3-Ton



8-Ton

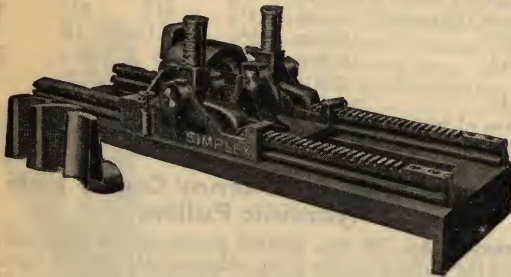


30-Ton

Drop-forged cap and machined steel piston. Bases of 30, 50, and 100-ton jacks are of special analysis solid steel bar stock; other jacks have pressure tested malleable iron bases. All jacks except 20, 30, 50 and 100-ton have screw extensions. Length lever, 20 inches. Convenient carrying handle.

Nos. 30HJ, 50HJ, and 100HJ have high and low speed pumps arranged in tandem. Pumps can be operated singly or in unison. Double sockets for operation in close quarters.

No.	Each	Cap. Tons	Low Height Inches	Hydraulic Lift Inches	Extension Screw Inches	Total Height Inches	Weight Pounds
3HJ	\$14.15	3	9	6 $\frac{9}{16}$	2	17 $\frac{1}{16}$	15
5HJ	16.90	5	9	6 $\frac{1}{2}$	3	18 $\frac{1}{2}$	18
8HJ	21.00	8	9	6 $\frac{3}{8}$	4 $\frac{3}{8}$	19 $\frac{3}{4}$	21 $\frac{1}{2}$
12HJ	32.15	12	9	6 $\frac{1}{16}$	3	18 $\frac{1}{16}$	29 $\frac{1}{4}$
20HJ	51.00	20	10	6 $\frac{7}{16}$	...	16 $\frac{7}{16}$	38 $\frac{1}{2}$
30HJ	77.00	30	11	7	...	18	65
50HJ	148.25	50	12	7	...	19	115
100HJ	275.00	100	12	6 $\frac{1}{8}$	...	18 $\frac{1}{8}$	203

Simplex Double Leverage Pipe Pushing and Pulling Jacks  
15 and 25-Ton Capacities

This jack is constructed with reversible carriages which eliminate the necessity of reversing the complete pipe pusher to pull pipe. Double levers and double track insure accurate and powerful pushing of pipe under paved streets, alleys, tracks, sidewalks, etc. Pipe can be pulled for lead pipe and duct installations, etc.

Equipment: one set of tapered jaws, one pilot, two 4-foot steel lever bars and two steel pipes for extending lever bars. Specify size of jaws and pilot required.

No.	Each	R-332R	R-334R
Extra Jaws.....	per set	38.00	49.50
Capacity.....	tons	15	25
Travel.....	inches	30	28 $\frac{1}{2}$
For Pipe Diameter.....	inches	$\frac{3}{4}$ -2	2-4
Weight Complete.....	pounds	218	321
Weight Jack Only.....	pounds	150	208

An adapter, furnished at \$41 additional enables the No. R-334R to push  $\frac{3}{4}$  to 2-inch pipe.

## Extra Pilots

Size.....in.	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4
Each.....	\$4.00	4.00	4.00	4.00	6.60	6.60	6.60	6.60	6.60

No. 125 Duff-Norton Pipe Forcing Jacks  
15-Ton Capacity

Used by many public service companies and contractors for laying water, gas, and other pipe in places difficult of access. Made of high carbon steel and steel castings. Will force pipe, from  $\frac{3}{4}$  to 4 inches, through favorable ground conditions from 60 to 300 feet. Trench, 9 feet long, required for operation of jack at starting point. Total length, 8 feet. Travel of cage, 7 feet.

No. 125; Weight, 292 Pounds.....each \$150.00

## No. 790 Greenlee Hydraulic Pipe Pushers

For underground installation in gas, electric, waterworks, telephone and other fields.



Eliminates tunneling, extensive trenching, back-filling and tamping, tearing up lawns, streets, sidewalks, railroad tracks, repaving.

Hydraulic unit does actual pushing, developing up to 75 tons piston pressure in large model.

One or two men can easily develop pressure needed to push pipe.

Unit is compact and simple to handle. Easy to carry and set up.

For  $\frac{3}{4}$  to 4-inch pipe, inclusive. Has six different operating speeds to match varying soil conditions, with pushing pressures ranging from 6,500 to 40,000 pounds. Greater speed for light soil, sufficient power for difficult soil conditions.

Power unit travels on notched steel base, supplied in 5 $\frac{1}{2}$ , 6 $\frac{1}{2}$ , 7 $\frac{1}{2}$  and 8 $\frac{1}{2}$ -foot lengths, permitting pushes of from 4 to 7 feet between changes of the pipe clamp. Each base is equipped with one backing plate and two pipe supports.

Weight of power unit only, 160 pounds.

No. 790, Power Unit Only.....each \$185.00

## Steel Bases, with Pipe Support and Backing Plate

Length.....feet	5 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{1}{2}$	8 $\frac{1}{2}$
Each.....	\$30.00	35.00	40.00	45.00
Weight.....pounds	145	165	185	205

## Quick Acting Clamps

Pipe Size..in.	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4
Each....	\$10.00	10.00	10.00	10.75	11.50	12.75	15.00	17.50	22.50

## Oshkosh Diggers



No. 2051

The blades are made of special alloy steel. Welding is used for attaching the blades instead of riveting, making a durable joint. The fulcrum members are of heavily constructed, channel-shaped, steel forgings.

There are two pivot points for the blades, one on each side. This gives much stronger leverage and greater durability.

Made in two types, with split handles or with two solid handles. The handles are made of straight grained hard wood, 8 feet long.

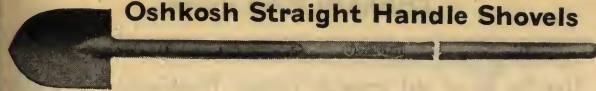
Measurement marks are placed on the handles so that the workman can easily determine the exact depth of the hole.

The diameter of the circle circumscribed by the digger blades is 6 inches.

No. 2050, Split Handle Type, Wt., 13 Pounds. each \$10.45  
No. 2051, Two Solid Handle Type, Wt., 14 $\frac{1}{2}$  Lb. each 10.45



## Oshkosh Straight Handle Shovels



BLADE—Black finish; unpolished. Strap length, 22 inches.

HANDLE—Lacquered; straight from end to end. Diameter, 1 $\frac{13}{16}$  inches. Packed 6 to a bundle.

With Carbon Steel Blade  
Maple Handle

No.	Each	Handle Length Feet	Weight Pounds	Extra Handles		
				No.	Each	Wt. Lb.
867	\$6.90	7	8	993	\$2.25	4
868	7.05	8	9	994	2.85	5
869	7.95	9	10	995	3.90	6
870	8.30	10	11	996	4.95	7
*Ash or Hickory Handle						
1032	\$7.05	7	8	1005	\$2.70	6
1033	7.25	8	9	1006	3.50	6
1034	8.10	9	10	1007	4.60	7
1035	8.60	10	11	1008	5.85	7

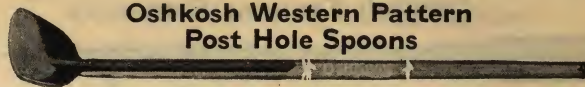
## With Alloy Steel Blade

\*Ash or Hickory Handle

No.	Each	Handle Length Feet	Weight Pounds	No.	Each	Wt. Lb.
2032	.....	7	8	2005	.....	6
2033	.....	8	9	2006	.....	6
2034	.....	9	10	2007	.....	7
2035	.....	10	11	2008	.....	7

\*For hickory handle, add letter H to No.

## Oshkosh Western Pattern Post Hole Spoons



Blade, plain black finish. Handle lacquered. Six in bundle.

## With Carbon Steel Blade

Maple Handle

No.	Each	Handle Length Feet	Strap Length Inches	Weight Pounds	Extra Handles		
					No.	Each	Wt. Lb.
859	\$6.90	7	22	10	993	\$2.25	4
860	7.05	8	22	10	994	2.85	5
861	7.95	9	22	11	995	3.90	6
862	8.30	10	22	12	996	4.95	7
*Ash or Hickory Handle							
1023	\$7.05	7	22	10	1005	\$2.70	6
1024	7.25	8	22	10	1006	3.50	6
1025	8.10	9	22	11	1007	4.60	7
1026	8.60	10	22	12	1008	5.85	7
1027	9.85	12	22	14	1009	7.20	8

## With Alloy Steel Blade

\*Ash or Hickory Handle

No.	Each	Handle Length Feet	Strap Length Inches	Weight Pounds	No.	Each	Wt. Lb.
2023	.....	7	22	10	2005	.....	6
2024	.....	8	22	10	2006	.....	6
2025	.....	9	22	11	2007	.....	7
2026	.....	10	22	12	2008	.....	7
2027	.....	12	22	14	2009	.....	8

\*For hickory handle, add letter H to No.

## Oshkosh Crooked Handle Shovels



BLADE—Black finish; strap length, 22 inches.

HANDLE—Lacquered; made of selected second-growth northern white ash, tough, strong highland hickory, or hard rock maple. Diameter, 1 $\frac{13}{16}$  inches.

Packed 6 to a bundle.

With Carbon Steel Blade  
Maple Handle

No.	Each	Handle Length Feet	Weight Pounds	Extra Handles		
				No.	Each	Wt. Lb.
874	\$9.55	7	8	1000B	\$6.55	4
875	10.20	8	9	1000	7.20	5
*Ash or Hickory Handle						
1040	\$9.55	7	8	1014	\$6.55	6
1041	10.20	8	9	1015	7.20	6
1042	10.90	9	10	1016	8.15	7
1043	11.45	10	11	1017	10.50	7

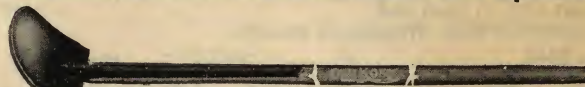
## With Alloy Steel Blade

\*Ash or Hickory Handle

No.	Each	Handle Length Feet	Weight Pounds	No.	Each	Wt. Lb.
2040	.....	7	8	2014	.....	6
2041	.....	8	9	2015	.....	6
2042	.....	9	10	2016	.....	7
2043	.....	10	11	2017	.....	7

\*For hickory handle, add letter H to No.

## Oshkosh Eastern Pattern Post Hole Spoons



## With Carbon Steel Blade

Maple Handles

Cat. No.	Each	Handle Length Feet	Strap Length Inches	Weight Pounds	Extra Handles		
					Cat. No.	Each	Wt. Lb.
859E	\$6.90	7	22	10	993	\$2.25	4
860E	7.05	8	22	10	994	2.85	5
861E	7.95	9	22	11	995	3.90	6
862E	8.30	10	22	11	996	4.95	7
*Ash or Hickory Handles							
1023E	\$7.05	7	22	10	1005	\$2.70	6
1024E	7.25	8	22	10	1006	3.50	6
1025E	8.10	9	22	11	1007	4.60	7
1026E	8.60	10	22	12	1008	5.85	7
1027E	9.85	12	22	14	1009	7.20	8

## With Alloy Steel Blade

\*Ash or Hickory Handles

Cat. No.	Each	Handle Length Feet	Strap Length Inches	Weight Pounds	Cat. No.	Each	Wt. Lb.
2023E	.....	7	22	10	2005	.....	6
2024E	.....	8	22	10	2006	.....	6
2025E	.....	9	22	11	2007	.....	7
2026E	.....	10	22	12	2008	.....	7
2027E	.....	12	22	14	2009	.....	8

\*For hickory handle, add letter H to No.

## Oshkosh Short Handled Shovels



Used for starting and filling in holes.

## With Carbon Steel Blade

The handle is made of Northern white ash, air seasoned.

No.	Each	Style of Blade	Wt. Lb.	Extra Handles		
				No.	Each	Wt. Lb.
1090R	\$3.05	Round Point	5	1091	\$1.90	4 $\frac{1}{2}$ 2
1090S	3.05	Square Point	5	1091	1.90	4 $\frac{1}{2}$ 2

## With Alloy Steel Blade

Equipped with fine quality ash handle.

No.	Each	Style of Blade	Wt. Lb.	No.	Each	Wt. Lb.
2090R	.....	Round Point	5	2091	.....	4 $\frac{1}{2}$ 2
2090S	.....	Square Point	5	2091	.....	4 $\frac{1}{2}$ 2

## Oshkosh D-Handled Shovels



Used for trench work.

## With Carbon Steel Blade

The handle is second growth Northern white ash and is fitted with a pressed steel D top.

No.	Each	Style of Blade	Wt. Lb.	Extra Handles		
				No.	Each	Wt. Lb.
1092R	\$3.05	Round Point	4	1093	\$1.90	2
1092S	3.05	Square Point	4	1093	1.90	2

## With Alloy Steel Blade

The handle is of clear straight grained ash, sharply bent, and fitted with a steel D top.

No.	Each	Style of Blade	Wt. Lb.	No.	Each	Wt. Lb.
2092R	.....	Round Point	4	2093	.....	2
2092S	.....	Square Point	4	2093	.....	2



## Oshkosh Tamping Bars



Handle is made of hard rock maple. The tamping head is faced with an iron shoe, and measures  $1\frac{3}{4} \times 4$  inches.

No.....	854	855	856
Each.....	\$7.35	8.30	9.20
Length.....feet	7	8	9
Weight.....pounds	13	14	16

Oshkosh Tamping Bars  
With Extra Heavy Iron Shoe

Made with hard rock maple handle with  $1\frac{1}{4} \times 1\frac{1}{2}$ -inch steel shoe on tamping face. Tamping face is  $1\frac{1}{4}$  inches wide and  $3\frac{1}{2}$  inches long.

No.....	1054	1055	1056
Each.....	\$8.30	9.10	10.05
Length.....feet	7	8	9
Weight.....pounds	13	15	17

## No. 1044 Oshkosh Electric Tamping Bars

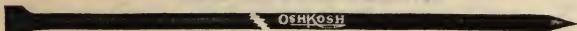


Made of steel tubing with malleable iron tampers of different size on each end.

Length, 8 feet. Weight, 15 pounds.

No. 1044.....each \$7.70

## Oshkosh Crow and Digging Bars



Made of special octagon crucible steel. Has 2-inch chisel on one end, pointed on other end.

No.....	1061	1062	1064	1065	1066
Each.....	\$7.25	7.55	7.75	8.70	10.30
Size.....	1"x7'	1"x8'	1 $\frac{1}{8}$ "x7'	1 $\frac{1}{8}$ "x8'	1 $\frac{1}{8}$ "x9'
Weight..pounds	20	23	26	28	31

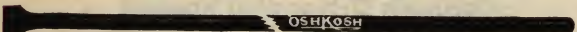
## Oshkosh Tamping and Digging Bars



Made of special octagon crucible steel, tough and stiff. Has 2-inch chisel on one end, malleable iron tamper on other end.

No.....	1071	1072	1074	1075
Each.....	\$7.55	7.90	8.20	9.30
Size.....	1"x7'	1"x8'	1 $\frac{1}{8}$ "x7'	1 $\frac{1}{8}$ "x8'
Weight.....pounds	21	24	27	30

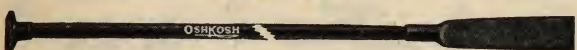
## Oshkosh Plain Digging Bars



Made of special octagon crucible steel, tough and stiff. Has 2-inch chisel on one end.

No.....	1081	1082	1084	1085
Each.....	\$6.80	7.75	7.90	8.60
Size.....	1"x7'	1"x8'	1 $\frac{1}{8}$ "x7'	1 $\frac{1}{8}$ "x8'
Weight.....pounds	20	23	26	28

## No. 852 Oshkosh Digging Spuds with Tamper



A light, evenly balanced digging tool. Handle is made of steel tubing with a tamping head of malleable iron, and the blade and socket are of one piece of forged high carbon steel. Blade measures  $3\frac{1}{2}$  inches wide.

Length, 9 feet. Weight, 20 pounds.

No. 852.....each \$12.50

## Oshkosh Pike Poles



Handle is of old growth yellow Washington fir; only straight, close-grained fir is used.

Pike is of special steel made of one piece with upset face, which takes end thrust and distributes it over the entire end of the handle. Pike is set in oil and a rivet runs through malleable iron ferrule, handle, and pike to further secure them. Pike projects 4 inches.

## Standard Light Pattern

No.	Each	HANDLE		Wt. Lb.	No.	Each	Extra Handles		Wt. Lb.
		Diam. In.	Lgth. Ft.						
806	\$5.80	2	12	8	971	\$5.15			7
807	6.15	2	14	10	972	5.55			9
808	6.85	2	16	11	973	6.15			11

## A. T. &amp; T. Pattern

818	\$7.45	*2 $\frac{1}{2}$	12	13	982	\$6.75	12
819	8.25	*2 $\frac{1}{2}$	14	14	983	7.65	13
820	8.75	*2 $\frac{1}{2}$	16	15	984	8.10	14
821	9.85	*2 $\frac{1}{2}$	18	18	985	9.10	16
822	10.95	*2 $\frac{1}{2}$	20	20	986	10.35	19

\*Diameter at center; tapers to 2 inches at both ends.

## No. 10 Oshkosh Pike Pole Guards

For guarding the hazardous point on pike poles. Will fit either the 2-inch or  $2\frac{1}{2}$ -inch pike poles.

The guard works easily and fastens securely in either the guarded or open position. When in the unguarded position, the guard is completely out of the way, snugly fitted around the pole. When in the guarded position, it automatically locks in place and provides complete protection from the pike point.

Shipping weight,  $\frac{3}{4}$  pound.

No. 10.....each \$2.10

## Oshkosh Special Pike Pole Coating

Oshkosh Pike Poles finished with this specially developed coating prevent loss of time caused by splinters and splinters.

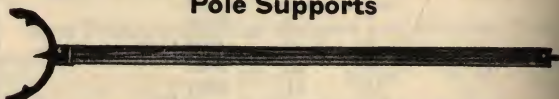
It gives a smooth, hard, transparent coating.

This coating keeps the grain from raising.

It is a non-conductor of electricity.

Can be applied at a slight additional charge.

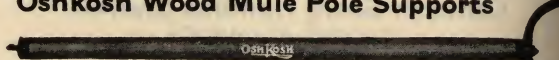
## No. 740 Oshkosh Fir Deadman Wood Pole Supports



Of clear, straight grained fir. Measures 3x3 inches square,  $8\frac{1}{2}$  feet over all. Steel fork has three prongs.

No. 740, Weight, 40 Pounds.....each \$24.10

## Oshkosh Wood Mule Pole Supports

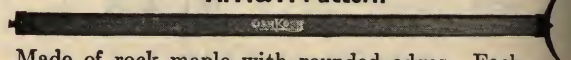


Made of Washington fir; 4 inches in diameter, tapers slightly to each end. Ends banded; with forged crucible steel fork in one end, pike in other end.

No.....	845	846	847
Each.....	\$23.25	24.10	26.30
Size.....feet	6	7	8
Weight.....pounds	23	26	29

## No. 848 Oshkosh Standard Deadman Wood Pole Supports

## A.T.&amp;T. Pattern

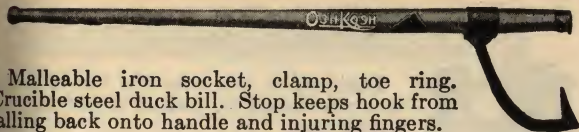


Made of rock maple with rounded edges. Each end is banded. Steel fork is fastened to upper end; pike in lower end. Thickness, 2 inches; width, 4 inches.

No. 848, Size 8 Feet, Weight 29 Pounds.....each \$26.30



## Oshkosh Cant Hooks



Malleable iron socket, clamp, toe ring. Crucible steel duck bill. Stop keeps hook from falling back onto handle and injuring fingers.

### With Hard Rock Maple Handles

No.	Each	HANDLE Diam. In.	Lgth. Ft.	Wt., Lb. per Doz.	No.	Each	Extra Handles Wt., Lb. per Doz.
188A	\$5.65	2 1/4	4	80	541	\$1.90	33
189A	5.90	2 1/4	4 1/2	85	542	2.05	35
188	5.90	2 1/2	4	80	544	2.05	40
189	6.25	2 1/2	4 1/2	85	545	2.40	45

### With Hickory Handles

No.	Each	HANDLE Diam. In.	Lgth. Ft.	Wt., Lb. per Doz.	No.	Each	Extra Handles Wt., Lb. per Doz.
199A	\$7.85	2 1/4	4	86	572	\$2.40	38
200A	8.20	2 1/4	4 1/2	90	573	2.55	40
199	8.20	2 1/2	4	91	575	2.55	45
200	8.55	2 1/2	4 1/2	97	576	2.70	50

## Leach E-Z-Up Pole Cradles



For lifting poles in position for framing.

Operated by one man without any lifting strain.

Uses the simple cam principle of rocking the pole off the ground and up.

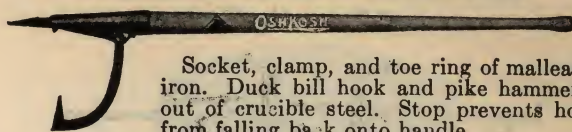
Made of malleable iron.

To operate, place the cradle against the pole and drop the point of a cant hook or peavey between the two rockers. Then catch the hook in the opposite side of the pole, pull back on the handle.

The pole can be rotated in the saddle of the cradle by using the cant hook.

Each, Weight, approximately 26 pounds. \$25.00

## Oshkosh Malleable Socket Peavies



Socket, clamp, and toe ring of malleable iron. Duck bill hook and pike hammered out of crucible steel. Stop prevents hook from falling back onto handle.

### With Hard Rock Maple Handles

No.	Per Dozen	HANDLE Diam. In.	Lgth. Ft.	Wt. Lb.	No.	Per Dozen	Extra Handles Wt. Lb.
121	\$6.90	2 1/4	4	7	541	\$1.90	3
122	7.15	2 1/4	4 1/2	7	542	2.05	3
124	7.15	2 1/2	4	9	544	2.05	3
125	7.30	2 1/2	4 1/2	9	545	2.40	4

### With Second Growth Hickory Handles

No.	Per Dozen	HANDLE Diam. In.	Lgth. Ft.	Wt. Lb.	No.	Per Dozen	Extra Handles Wt. Lb.
134	\$9.00	2 1/4	4	8	572	\$2.40	3
135	9.45	2 1/4	4 1/2	8	573	2.55	3
137	9.45	2 1/2	4	9	575	2.55	4
138	9.95	2 1/2	4 1/2	10	576	2.70	4

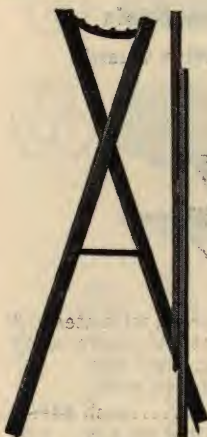
## Oshkosh Carrying Hooks Chisel Point Pattern



For carrying poles. Rock maple handle; malleable clasp. Crucible steel hooks attached to handle with malleable swivel.

No.	Each	HANDLE Diam. In.	Lgth. Ft.	Wt. Lb. Per Doz.	No.	Each	Extra Handles Wt. Lb. per Doz.
295	\$6.35	2 1/2	4	85	593	\$2.05	40
296	6.60	2 1/2	4 1/2	90	594	2.40	45
297	6.90	2 1/2	5	95	595	2.55	50
298	10.25	3	5	145	963	4.10	63
299	10.60	3	6	165	964	4.95	78

## Oshkosh Wood Jenney Pole Supports



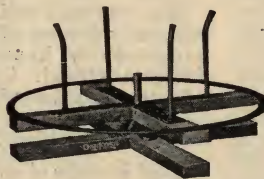
Made of clear, straight-grained fir. Strong and stiff when set up; easily collapsible to a small size for carrying in trucks.

Center or pivot holes for bolt in cross pieces are reinforced with steel bushings. Steel pikes fastened to bottom of each leg stop any tendency to slide. Cross brace is placed high to prevent interference with walking.

Thickness, 1 3/4 inches; width, 3 1/2 inches.

No.....	842	843	844
Each.....	\$17.70	20.35	22.35
Size.....feet	6	7	8
Weight....lb.	25	30	35

## No. 902 Oshkosh Plain Pay-Out Reels

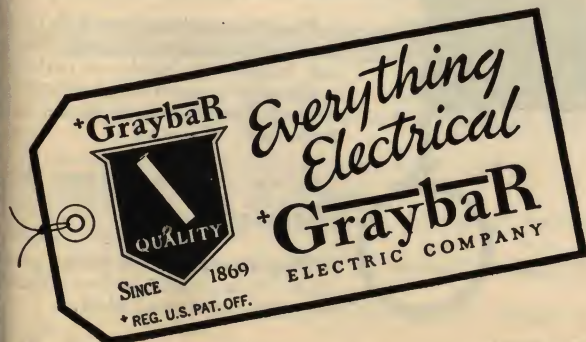


For gang mounting on a wagon when paying out several wires at one time.

Made of hardwood, braced and reinforced with sheet steel.

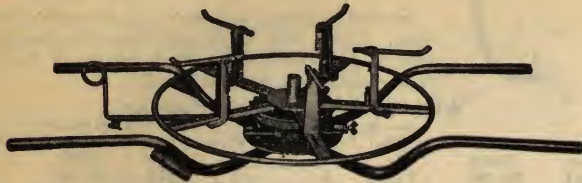
Reel pins adjustable for 12, 18, and 24-inch coils.

No. 902, Wt. 40 Lb.. each \$21.50





### Oshkosh Combination Pay-Out and Take-Up Reels



As a Pay-Out Reel

A pay-out and take-up reel, all in one. It is lightweight, yet strong and durably constructed. The frame is made of tubing. Easy portability; the guide pins fold flat so that the whole reel is compact and easy to carry or slide in truck.

The guide pins are easily and quickly adjustable to take any size coil of wire from 13 to 27 inches inside diameter, to 34 inches outside diameter.

The automatic brake is another feature. As the wire is pulled the brake releases and the wire pays out freely. The instant tension is released, the brake sets and any possibility of back-lashing is prevented.

For converting into a take-up reel 2 braces are furnished which hold the reel in an upright position. Hand crank attached for ease in taking up wire.

The carrier frame is removable so that the reel can be bolted to a truck. A thumb screw terminal is provided for grounding the reel.

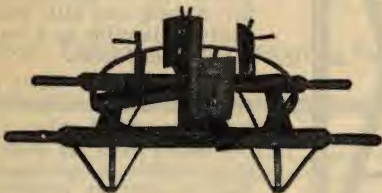
Length overall, 63 inches; width, 34 inches; height overall (guides up), 13 $\frac{1}{4}$  inches; height overall (guides down) 8 $\frac{3}{4}$  inches.

Weight, 75 pounds.

Reel, Complete.....each \$100.00  
Reel, less Carrier Frame.....each 80.00

### No. 900 Oshkosh Barrow Reels

Heavy Western Union Type—With Guards



Used for heavy wire and heavy work.

Made of hardwood, braced and reinforced with steel. A wide bearing, together with a long pivot and sleeve, allow the reel to turn easily. Rests on strong, steel legs.

Reel pins adjustable for 12, 18, and 24-inch coils.

No. 900, Weight 80 Pounds.....each \$41.75  
No. 901, Extra Pins, Weight 4 Pounds...per set of 4 4.50

### No. 897 Oshkosh Folding Take-Up Reels



The reel part collapses and automatically throws off the coil at the same time and in an instant is ready for another coil. The frame, made of heavy hardwood, is strong and heavily reinforced throughout and folds up like a hinge.

Reel is made of malleable iron and steel.

It can be taken down in a moment merely pulling the pin out of the shaft, throwing off the coil and folding up the frame.

Take-up, 21 inches. Weight, 42 pounds.

No. 897.....each \$30.35

### Hubbard Wire Stringing Pulleys

Cadmium Plated

#### No. 1240 Pin Type



Designed to slip over the top of a 1 $\frac{1}{8}$  inch pin thread for pulling in and sagging conductors.

Sheave wheels are equipped with oil retaining bronze bushings.

Cast malleable with cadmium plate.

All surfaces are designed to prevent injury to pin threads or conductors.

No.  
1240

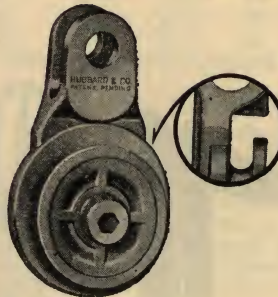
Style  
Pin

Clearance  
for  
Conductor  
Inches  
1 $\frac{1}{32}$

Attach  
Bolt  
Size  
Inches  
 $\frac{5}{8}$

Apprx.  
Shp.  
Wt. Lb.  
per 100  
335

#### No. 1243 Angle Type



No.  
1243

Style  
Suspension

Clearance  
for  
Conductor  
Inches  
1 $\frac{1}{32}$

Attach  
Bolt  
Size  
Inches  
 $\frac{5}{8}$

Apprx.  
Shp.  
Wt. Lb.  
per 100  
335

Prices upon application.

Serves the same purpose as the pin type except that it is designed for attachment to disc or suspension insulators.

Clevis clearance is  $\frac{7}{8}$ -inch and wire capacity is 1 $\frac{1}{2}$  inch.

### Oshkosh Warning Signs

This warning sign is light in weight, yet durable. Legs are of  $\frac{1}{2}$ -inch high carbon steel. Has 1 $\frac{1}{4}$ -inch flange around edge of lettered side.

Has two hollow handles for adjusting angle of the legs. These handles also serve as flag sockets, and each is equipped with a lantern lock.

Black letters, 5 $\frac{1}{2}$  inches high, on traffic yellow background.

Height, 43 inches.

Width, 28 inches.

Thickness, 1 $\frac{1}{4}$  inches.

Size folded, 28x28x1 $\frac{1}{4}$  inches.

Weight, 23 pounds.

Warning Sign.....each \$11.60



### Coffing Flag Holders and Flags



**Flag Holder** is designed to fit all poles. Main body casting and locking handle are made of certified malleable iron. The chain wraps around the pole and hooks into main body of clamp.

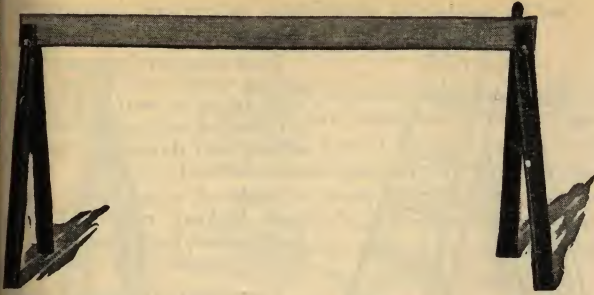
Strong coil spring between chain and main body assures tension on locking chain.

**Flag** is made of 6-ounce army duck. Size, 12x16 inches. Has a 1x18-inch hardwood staff.

Flag Holder.....each \$2.40  
Flag.....each 1.15  
Flag Holder and Flag.....each 2.55



## Leach Portable Folding Barricade



A strong, substantial barricade, exceptionally neat in appearance and efficient in operation. Easily and quickly taken down and folded into a small, compact bundle. Stacks easily and safely and takes up only a small space in truck or warehouse.

To quickly set up, open the legs, latch the cross-piece, put in the cross-rail and turn the handle.

The cross-rail is held like a piece of wood in a vise which allows the use of various thicknesses of wood from 1 to 3 inches.

Jaws are not equipped with teeth, thus, they do not chew up the wood cross-rails.

Equipped with extension swivel which is used to erect a square barricade.

Features a flag socket in the screw handle which is  $4\frac{1}{2}$  inches deep to hold a danger or warning flag.

Furnished with a latern lock welded to the screw handle. Orange finish.

Height.....inches	32	42
Per pair.....	\$12.30	\$15.25
Extension Swivel.....	2.90	2.90
Width, Bottom Open.....inches	20 to 23	25 to 29
Size, Folded.....inches	3x2x35	3x2x44
Weight.....pounds	12½	16

## Central Linemen's Red Flare Lights



Used for quick general illumination and as warning signal in case of highway accidents or breakdowns. Also used for parades, rallies, and outdoor celebrations.

Burns with a brilliant red light.

Equipped with spike point and friction cap ignition.

No. 2720, packed in case of 72 (Spike Point), weight, 50 pounds.

No. 2730, packed in case of 36 (Spike Point), weight, 34 pounds.

No. 2720, Burns for 20 Minutes.....per case \$12.25

No. 2730, Burns for 30 Minutes.....per case 7.50

## Central Linemen's Yellow Flare Lights



Used as an emergency light and as a warning signal in case of truck breakdowns or when power lines are down on highway.

Burns with a brilliant silvery yellow light.

Not effected by wind, rain or snow.

Equipped with friction cap ignition, spike point, and removable handle.

No. 3020, packed in case of 72 (12 cartons), weight, 62 pounds.

No. 3030, packed in case of 36 (6 cartons), weight 45 pounds.

No. 3020, Burns for 20 Minutes.....per case \$13.50

No. 3030, Burns for 30 Minutes.....per case 9.75

## Amco All Weather Manila Rope



This is the very best manila rope. It is made entirely of select long fiber Phillipine Hemp by the American Manufacturing Company, Brooklyn, New York, one of the world's largest cordage mills. Amco All Weather Manila Rope is treated with a special waterproofing and rotproofing solution to insure long life and serviceability. It is made in a full range of sizes for all utility and industrial uses.

Also available American Brand Pure Manila Rope—Regular No. 1 Rope.

## Standard and Special Lays in a Full Range of Sizes



STANDARD 3-STRAND



4-STRAND TRANSMISSION



CABLE LAY

## Weight and Strength Chart

Diam. In.	Cir- cum- ference In.	Approx. Gross Weight per Coil	Approx. Length per Coil Feet	Approx. Feet per Pound	Approx. Weight per Foot Lb.	Minimum Tensile Strength Lb.	Safe Working Strains Lb.
3/16	5/8	45	3000	66.6	.015	450	90
1/4	3/4	55	2750	50.0	.020	600	120
5/16	1	65	2250	34.5	.029	1000	200
3/8	1 1/8	66	1620	24.4	.041	1350	270
7/16	1 1/4	63	1200	19.0	.053	1750	350
15/32	1 3/8	75	1200	16.0	.063	2250	450
1/2	1 1/2	90	1200	13.3	.075	2650	530
9/16	1 3/4	125	1200	9.61	.104	3450	690
5/8	2	160	1200	7.50	.133	4400	880
3/4	2 1/4	200	1200	6.00	.167	5400	1080
13/16	2 1/2	234	1200	5.13	.195	6500	1300
7/8	2 3/4	270	1200	4.45	.225	7700	1540
1	3	324	1200	3.71	.270	9000	1800
1 1/16	3 1/4	375	1200	3.20	.313	10500	2100
1 1/8	3 1/2	432	1200	2.78	.360	12000	2400
1 1/4	3 3/4	502	1200	2.40	.418	13500	2700
1 5/16	4	576	1200	2.09	.480	15000	3000
1 1/2	4 1/2	720	1200	1.67	.600	18500	3700
1 5/8	5	893	1200	1.34	.744	22500	4500
1 3/4	5 1/2	1073	1200	1.12	.895	26500	5300
2	6	1290	1200	.93	1.08	31000	6200

Larger size specifications upon request.

Four-strand weights about 7 per cent more than 3 strand.



### Oshkosh Safety Extension Ladders

A lightweight, safety extension ladder designed expressly for public utilities.

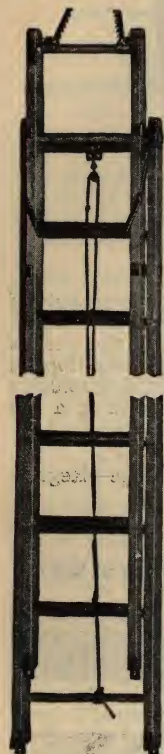
Equipped with an automatic safety lock or latch. This lock is so arranged that when pulling on the raising rope, the lock is lifted out of position. The instant the strain on the rope is slackened, the lock drops in place. In lowering, the extension must be lowered slowly. It cannot accidentally drop.

The side rails are made from straight grained, properly seasoned aeroplane spruce.

The rungs are made from tough mountain hickory, straight grained. Each rung has a shouldered tenon joint which is pressed tightly into the side rails, assuring a safe, tight fit. The side rails of each section are connected at top, middle, and bottom with steel tie-rods. This combination makes a rugged, durable construction. Either section can be used separately as an individual ladder, both being equipped with safety tips and pikes.

Other safety features include corrugated rubber tips, transparent safety finish, safety pole-grippers, and rubber guarded safety pikes. All metal parts are parkerized. Furnished in full range of lengths in multiples of 2 feet.

Weight, 2 pounds per foot, average.



Lgth. Feet	Each	Lgth. Feet	Each
16	\$29.60	32	\$59.20
18	33.30	34	62.90
20	37.00	36	66.60
22	40.70	38	70.30
24	44.40	40	74.00
26	48.10	42	77.70
28	51.80	44	81.40
30	55.50	46	85.10

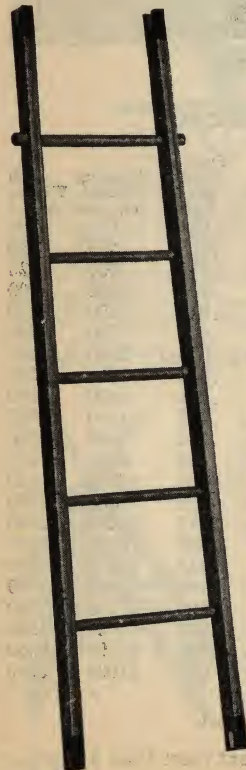
### Oshkosh Sectional Ladders

Each section is 6 feet long, making a handy ladder to have around for miscellaneous uses where a long extension ladder is larger than the need requires.

For small service trucks, one or two of these sections can be hooked on and carried around all the time so that a ladder is always handy for emergency use.

The sections join together interchangeably, lapping 1 foot. One section fits into the other at either end as shown in the illustration. The joint is stiff, solid and secure.

Outside width of top, 16½ inches; inside width of bottom, 17 inches; rungs diameter, 1½ inches; size rails, 1½x2¾ inches.



Section Which Fits Into End

Side rails are selected aeroplane spruce; rungs are straight grained mountain hickory; metals, Parkerized steel.

Special transparent finish.

Rubber pikes at bottom, on special order.

Weight per running foot, 2 pounds.

Per Section .....\$9.30

### Babcock Mechanics' Step Ladders

Used by mechanics, electricians, carpenters, painters and masons.



Each step is reinforced by a strong steel rod under step with block in center, forming a truss rod and equipped with strong and durable hinges or ears, securely riveted.

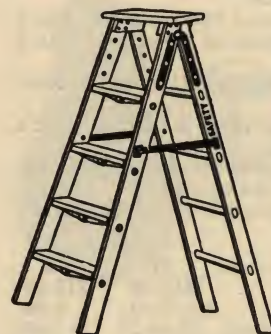
Made of clear stock: 1½-inch hickory rungs. Front, ¾x3 inches; back legs, 1½x2½ inches; steps, ¾x3¾ inches.

Furnished with bucket shelf.

Lengths, 4, 5, 6, 7, 8, 10, 12, 14 and 16 feet.

Prices upon application.

### Safety Step Ladders



Especially designed for heavy work. Made from 1¼-inch stock, well braced, every step reinforced. All parts heavily riveted. The back is equipped with oval oak bars. The hinges and spreaders are of 1¼-inch iron.

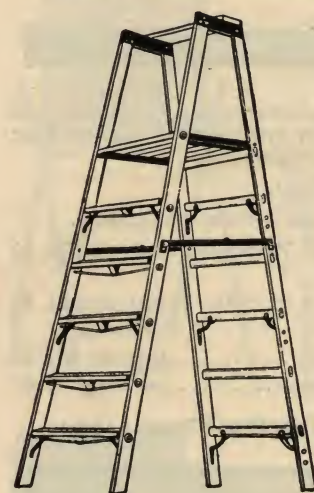
Front, 1½x3¾ inches; back bars, ¾x1¾ inches; back legs, 1½x2½ inches; steps, 1x¾ inches.

Made of air dried stock in lengths of 4 to 22 feet.

Length.....feet	4 to 14	16 to 22
Per Foot.....	\$1.76	2.00

### No. 28 Babcock Platform Stepladders

#### Heavy Duty



A practical, safe ladder for overhead work in churches, schools, ships, sign work, stock rooms, and theaters.

Made of light, durable air dried stock. Rung tenons dipped in hot linseed oil.

All metal parts are zinc plated to prevent rust.

Measured from floor to platform.

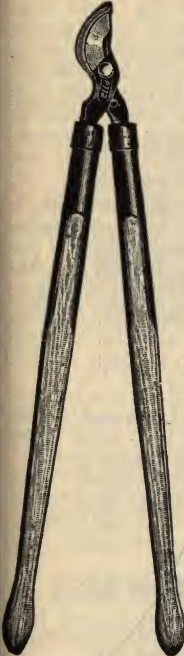
Shipping weight, 3½ pounds per foot.

Ht. to Plat- form..ft.	4	6	8	10	12	14	16	18
No. 28	ea.	\$16.50	20.50	25.00	29.50	32.50	35.50	38.50 41.50





## No. 777 Bartlett Two-Hand Pruners



Due to the fact that the majority of men are right-handed, the blade has been placed on the opposite side than is the general custom. This permits the blade to be placed next to the body or main limb of the tree with hook handle held in left hand, while the right hand operates the blade.

Hook remains stationary while blade closes, instead of blade being held stationary while hook closes by twisting around the branch, wounding the bark.

Blade positively will not cut or dig into the hook. By dropping the hook considerably below the center line, a superior positive draw cut has been produced, with an opening between blade and hook, allowing a straight thrust at the branch.

Both blade and hook are hardened drop forged crucible tool steel. Has white ash handle.

26-Inch Handle with 10-Inch Strap Ferrule.....each \$5.00  
26-Inch Handle with 4½-Inch Plain Ferrule.....each 4.75

## Porter Foresters



No. 2 is recommended as a forestry tool for pine pruning and rust control.

No. 3 cuts hardwood such as oak, maple and beech; for reforestation work such as brush cutting, trail clearing, etc.

Has slide shift 3-power slot which provides great extra power in the middle of a difficult cut. Edges are protected when handles are closed. All parts heat treated; fully interchangeable. Cuts clean, no damage to bark.

No. 2	2	3
Each.....	\$8.50	9.75
Length.....	inches 27	34
Capacity Cut.....	inches 1½	2
Weight.....	pounds 4½	7¼

## No. 114 Bartlett Utility Rapid Cut Saws



Cuts very fast. Teeth are diamond point with a well-shaped raker. Handle has an extra large grip permitting gloves and is comfortably shaped for the hand.

Can be obtained with or without the automatic on and off belt snap.

Use 6-inch safeback cant file.

Length, blade, 26 inches.

No. 114, with Snap.....	each \$5.50
Without Snap.....	each 5.00
Extra Snaps, Complete.....	each .50

## No. 41 Bartlett Utility Saws



Used by utility companies. Will sever the largest branches. Extra large, special handle.

Tuttle tooth blade.

Length Blade.....	inches 20	24
No. 41.....	each \$3.25	3.50

## No. 114BD Bartlett Utility Pruning Saws



For fast cutting. Has diamond point teeth with well-shaped raker. Special handle. Length of blade, 24 inches.

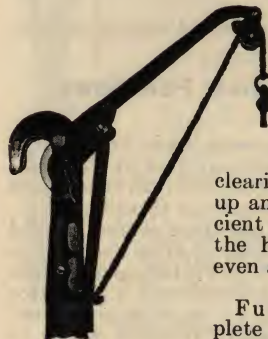
No. 114BD, without Snap.....each \$4.50

## Seymour Smith Tree Pruner



No. 111

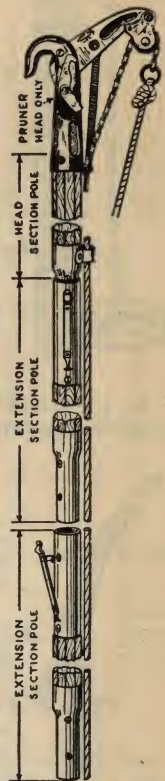
No. 111.—Cuts 1-inch diameter branches. It is a lightweight, powerful, general purpose pruner for light trimming and line clearing along electric light, power and telephone wires.



No. 12

No. 12.—Easily cuts 1½-inch diameter branches. Especially designed for electric light, power and telephone line clearing. Will stand up and give long efficient service under the hardest use and even abuse.

Furnished complete with rope and 18-foot wood pole.



## Complete Pruner

No.	No. 111 Description	Ship. Wt., Lb.	Each
111-18	Complete Pruner.....	10	\$12.00
111	Pruner Head Only.....	1½	3.00
1	6-Foot Head Section Pole.....	2¼	2.40
1	6-Foot Extension Section Pole.....	3	3.40
51	6-Foot Tapered Head Section Pole...	3¼	5.00
21	6-Foot Tapered Extension Section Pole.....	3½	6.30
No. 12			
12-18	Complete Pruner.....	19	19.00
12	Pruner Head Only.....	4	6.00
2	6-Foot Head Section Pole.....	4½	3.30
2	6-Foot Extension Section Pole.....	5½	4.90



## No. 1-W Bartlett Pulley Type Tree Trimmers

A very powerful cutting tool.

It not only has the compound lever, but it also has double leverage due to the pulley which is attached to the curved lever.

Will sever any branch up to 1¼-inch diameter, and the pulley enables the operator to pull the rope at any angle. A special coil spring positively returns the blade to a full cutting position.

An important feature of this tree trimmer is the light weight, the head complete weighing only 1¾ pounds.

All poles have two coats of waterproof shellac to prevent moisture absorption.

Furnished with 1¼x1½-inch rectangular poles, one piece poles or short sections joined together with No. 156 brass sleeves which have a positive locking device.

### With Rectangular Pole and No. P156-2 Ferrule

4-Foot Length.....each	\$8.85
6-Foot Length.....each	9.35
8-Foot Length.....each	9.85
10-Foot Length.....each	10.35
12-Foot Length.....each	10.85
14-Foot Length.....each	11.45
16-Foot Length.....each	12.05
No. 1-W Head Complete with Pulley.....each	6.00

### Extra Rectangular Sections, With No. 156-1 and 2 Body and Ferrule

4-Foot Length.....each	\$3.50
6-Foot Length.....each	4.20
8-Foot Length.....each	4.90
10-Foot Length.....each	5.60



Six and 8-foot octagon poles with round sleeves are obtainable if desired.

## No. 44 Bartlett Pole Saws

For large limbs.

Has 16-inch peg tooth blade with 7 teeth per inch. Saw is securely held by the head, which is stamped from stiff cold rolled steel and fastened to the pole by three bolts.

Head is made of two strips of steel riveted together so as to secure a truss shaped support for the blade, which is fastened between the two sides. Hook serves as a means for hanging the tool on a limb when not in use.

Saw can be adjusted to three angles to suit operator's position and the blade is ground for clearance, which prevents binding.

File blade with No. 395 cant file.

Furnished without ferrule.

Size pole, 1¼x1½ inches.

4-Foot Length.....each	\$6.20
6-Foot Length.....each	6.60
8-Foot Length.....each	7.00
10-Foot Length.....each	7.40
12-Foot Length.....each	7.80
14-Foot Length.....each	8.20
16-Foot Length.....each	8.60

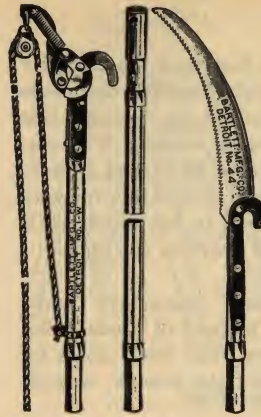
Paint brush clip will be attached to side of pole near head at 50 cents extra when desired.

No. P156-2 ferrule attached at 50 cents each, when extra sections are ordered.



## Bartlett Combination Pruners and Saws

### Octagon Poles



This combination has two separate tools for head sections, mounted on short pieces of 1¼-inch octagon sitka spruce poles, with No. 146-2 round ferrule attached to the lower end and extra 6 or 8-foot octagon section fitted with round brass sleeve body which engages the ferrule and locks securely.

Combination makes it possible to use either head with same handle section, and several intermediate lengths can be added if desired.

For convenience in shipping, head sections may be ordered without extra sections if desired.

No. 1-WE, 30-Inch Head Section, Wt., 2¾ Lb....each	\$6.90
No. 44WE, 30-Inch Head Section, Wt., 1½ Lb....each	5.20
8-Ft. Intermediate Section with No. 146-1 and 2 Body and Ferrule.....each	4.90
8-Ft. Handle Section with No. 146-1 Sleeve Body.....each	4.25
No. 146-1 Sleeve Body, Complete.....each	1.45
No. 146-2 Sleeve Ferrule.....each	.65

## No. 50 Bartlett Safety Back Pole Saws



Constructed to give the maximum amount of safety possible in hazardous work.

Bent wood back tapers from standard size pole to a narrow point which enables the user to operate the saw in close crotches.

In order to make the cutting most effective the cutting head has been designed so that the blade can be turned to three positions by simply loosening the thumb nut and turning the knurled holder until the pin drops into the desired position, then again tightening the thumb nut with the lower pin in a position corresponding to the upper end.

Steel blade is 36 inches long and ⅞ inch wide, having a draw cut of 5 points per inch, and will cut with great rapidity.

Saw has a cutting capacity of 5 inches.

File blade with No. 390 slim file.

5-Ft. Top Section with Blade and No. 156-2 Ferrule.....each	\$9.40
4-Ft. Section with Sleeve Body.....each	2.85
6-Ft. Section with Sleeve Body.....each	3.55
8-Ft. Section with Sleeve Body.....each	4.25
10-Ft. Section with Sleeve Body.....each	4.95

## Newman Curved Type Tree Saws



Designed for cutting limbs over 1½ inches in diameter, and where blade with slight curve is required.

Adjustable to three angles.

Blade is long and is ground for clearance to prevent binding.

Separate extension handles may be used or the extension handles on Nos. 700, 800, and 900 trimmers may be used.

Overall length of saw and ferrule equipped handle, 6½ feet. Weight, 3¾ pounds.

No. 1300, for 1½-Inch Pole.....each	\$7.20
No. 1300A, for 1¼-Inch Pole.....each	7.20



## Newman Swedish Steel Tree Saws



Designed for cutting limbs up to 4 inches in diameter. By undercutting, limbs up to 8 inches in diameter can be cut. Saw cuts on the draw, thus giving maximum ease of operation. Long blade, 35½ in. in length. Overall length, 4 ft. No. 1200, for 1½-Inch Pole.....each \$10.50  
No. 1200A, for 1¼-Inch Pole.....each 10.50

## Newman Heavy Duty Tree Trimmers



Will cut 1½-inch tree limbs because the knife shears down from the top. Gravity spreads the cut behind the knife; and wedging or choking is eliminated.

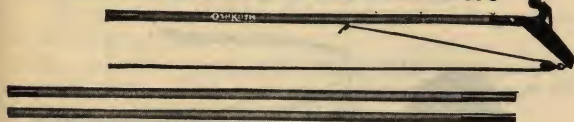
Trimmer is hung on the limb and the cut made by pulling the rope. High-powered leverage is provided by compound toggle lever and double pulleys. A broad ½-inch anvil base, against which the blade cuts, holds the tool in alignment with the limb so there is no side stress on the cutter.

Cutter head parts is aluminum heat treated alloy casting. The cutting blade itself is made of high chrome, high carbon tool steel carefully tempered for maximum strength. Metal parts are rust resistant plated.

No. 900, with 1½-Inch Pole and Multiple Pulley Action; Complete with Two 5-Foot Sections, 10 Feet Overall; Weight, 6½ Pounds.....each \$13.45

No. 975, Additional Center Section; 5 Feet Long; 1½ Inches Diameter; Weight 2 Pounds.....each 2.75

## No. 915 Oshkosh Tree Trimmers



This trimmer has positive locking ferrules.

Head is made of two pieces of light forged steel, reinforced and riveted together. These sides act as a guide for the thin saw steel cutting blade. Blade is pivoted and starts cutting with a slicing motion the moment the rope is pulled. Cuts limbs up to 1½ inches in diameter.

Handle is made in three sections of 1½-inch diameter straight-grained, clear Washington fir. One 6-foot section is attached to head and two 7-foot lengths; all equipped with couplings. Furnished complete with handle and a short section of rope to which can easily be attached any kind and size of rope. One-half-inch rope is suggested for best results.

No. 915, Trimmer, less Rope. Wt. 13 Lb.....each \$17.95

No. 915B, Extra Blade. Wt. 10 Oz.....each 4.75

No. 915S, Extra Spring. Wt. 2 Oz.....each .85

No. 915EM, Extra 7-Ft. Middle Ext. Wt. 4 Lb.....each 5.45

No. 915EE, Extra 7-Ft. End Extension. Wt. 4 Lb.....each 4.00

No. 915R, 20-Foot Rope with Connector. Wt. 4 Oz.....each 3.30

## No. 916 Oshkosh Tree Saws



Saw blade is strong, thin, and has fine teeth. It cuts clean. Blade is fastened in the frame.

Steel frame has hook for hanging saw in tree. The 6-inch handle has a ferrule on bottom to which can be connected the regular extensions of the trimmer.

No. 916, Saw. Weight 5 Pounds.....each \$10.90

No. 916B, Extra Blade. Weight 4 Ounces.....each 2.65

No. 916T, Extra Tightener. Weight 4 Ounces.....each 2.15

## No. 1000 Newman Longrange Wire Cutters

For Overhead Wires



Used to cut wires overhead where manual applied energy is at a minimum and where the operator must dodge a falling wire after it has been cut.

Cuts energized or cold lines and cables by the hot stick method with extensions.

Ideal for holding, leading or wrapping hot lines overhead at a safe distance.

Jaw opening of 1½ inches permits cutting or cleaning of wire in conduit.

Circular cutting action of jaw gives a smooth cut.

Handles are tested for 75,000 volts as is operating rope.

Insulating materials will not gum jaws.

Overall length, 4 feet.

Additional 4-foot extensions are available.

Weight, 6 pounds.

No. 1000.....each \$25.00

No. 1050, Replacement Blade, Wt., ½ Lb.....each 5.00

No. 925, Replacement Spring, Wt., 2 Ounces.....each .30

No. 1085, 5-Foot End Ext. Handle, Wt. 1¾ Lb.....each 5.00

## No. 700 Newman Featherweight Tree Trimmers



Used for topping or work in the tree.

Cuts limbs and branches up to 1 inch in diameter.

Has single action pulley design.

All pulleys are ball bearing for easier operation.

Overall length, 10 feet.

Handle diameter, 1¼ inches.

No. 700, Weight, 4¾ Pounds.....each \$9.50

### Accessories

No. 750, Replacement Blade.....each \$2.75

No. 875, Center Extension Handle.....each 2.75

No. 885, End Extension Handle.....each 2.75

## No. 800 Newman Bantamweight Tree Trimmers



For trimming limbs and branches from trees. Also light enough for horizontal use in the tree.

Cutting capacity, 1 inch.

Overall length, 10 feet consisting of a 5-foot head or cutting section, 5-foot end extension. For longer use, a 5-foot center extension is available.

All pulleys are ball bearing for easier operation.

Handle diameter, 1¼ inches.

No. 800, Weight, 5¼ Pounds.....each \$12.50

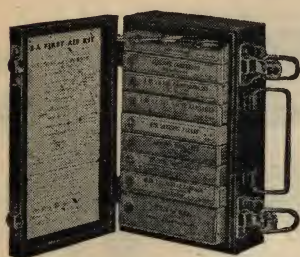
### Accessories

No. 750, Replacement Blade.....each \$2.75

No. 875, Center Extension Handle.....each 2.75

No. 855, End Extension Handle.....each 2.75



**No. 12035 M.S.A. 10-Unit All Weather First Aid Kits**

Contains complete assortment of first aid materials in standard Type D packages of unit size or multiples of unit size.

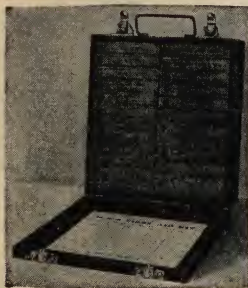
Kit case is weatherproof, dustproof, and is strongly made of welded heavy gage steel.

Each dressing is complete in itself, sterilized and sealed, with sufficient material for a single treatment.

Liquids are hermetically sealed in ampoules or vials to prevent leakage. Unit packages fit like blocks in case to simplify refilling.

Furnished with mounting brackets.

**Contents:** 1 package, 4-inch compress bandage; 1 package 2-inch compress bandage; 2 packages 1-inch adhesive bandage; 1 package Foille for burns; 1 package Iodine brushes; 1 package Ammonia inhalants; 1 package 40-inch triangular bandage; 1 package tourniquet and forceps.

**No. 12037 M.S.A. 24-Unit All Weather First Aid Kits**

Contains complete assortment of first aid materials in standard Type D packages in unit size or multiples of unit size.

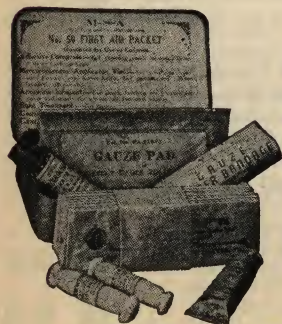
Kit case is weatherproof, dustproof, and is strongly made of welded heavy gage steel.

Each dressing is complete in itself, sterilized and sealed, with sufficient material for a single treatment.

Liquids are hermetically sealed in ampoules or vials to prevent leakage. Unit packages fit like blocks in case to simplify refilling.

Furnished with mounting brackets.

**Contents:** 3 packages 4-inch compress bandage; 3 packages 2-inch compress bandage; 3 packages 1-inch adhesive compresses; 2 packages 40-inch triangular bandage; 2 packages Foille for burns; 2 packages absorbent gauze compress; 2 packages Iodine brushes; 1 package Ammonia inhalants; 1 package Ammonia ampoules; 1 package wire splint; 1 package 4-inch gauze bandage; 1 package paper cups; 1 package tourniquet and forceps.

**No. FA-2294 M.S.A. Pocket First Aid Packets**

Contains a handy assortment of first aid materials for minor injuries, arranged in a metal box small enough to fit in the pocket.

Contents include ammonia inhalants, iodine applicator, adhesive compresses, compress bandages, and Foille for burns.

**No. FA-12619 M.S.A. Snake Bite Outfits**

Consists of a plastic suction syringe for removing venom by suction, lancet for enlarging wound, U. S. Army tourniquet, Iodine ampoule for painting wound, Ammonia inhalant, and paper cup. All contained in a sturdy plastic case.

Furnished in 1½-unit Type D package with instructions.

**No. FA-2682 M.S.A. Poison Ivy Wash**

Type D package of six 4 c.c. vials.

When applied in early stages, effectively relieves irritation and dries up inflammation.

**No. FA-2604 Creosote-Burn Wash**

Type D package of six 4 c.c. vials for effective treatment of burns or irritations of the skin caused by contact with creosote from line poles, ties, and creosoted timber.

**No. FB-12560 Foille for Burns**

Modern burn treatment for emergency and hospital use.

May be applied directly to injured area at scene of accident; does not require removal when treatment is continued by physician. Provides quicker emergency aid with marked control of pain and resultant shock.

Rapidly anesthetizes injured tissues with characteristic absence of infection.

Aids rapid healing, lessens contractures, and reduces scarring.

Type D package contains two ⅝-ounce tubes with instructions on package.

Available in emulsion or ointment. Also available in larger packages.

**Dillon Temperometers**

Used for obtaining temperatures of paraffin, compounds, wiping solder, impregnation wax, cable damming waxes, etc. Has large, easy to read dial and convenient handle.

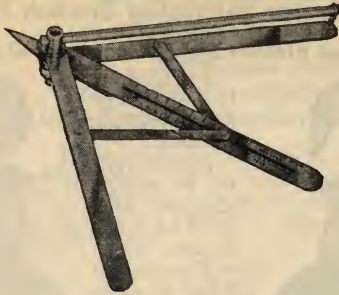
Dimensions: dial diameter, 2½ inches; length of handle, 5½ inches; size of tube, ¾ inches; overall length, 9 inches. Weight, 11 ounces.

Each..... \$6.00





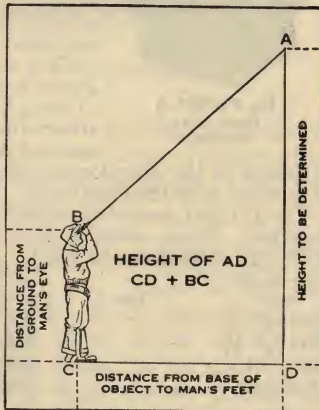
## Dillon Bisectors



Used to locate correct anchor positions for poles and to read the pull needed. Registers interior corner angle degrees.

Dimensions: length,  $8\frac{3}{4}$  inches; width,  $\frac{5}{8}$  inches; depth  $1\frac{1}{8}$  inches. Weight, 5 ounces. Shipping weight, 14 ounces. Each..... \$4.95

## Type CW Matthews Teleheights



Used by central stations, telephone and telegraph companies to secure height of poles, trees, etc. Used for figuring cubical contents of buildings, clearance of bridges, highlines, etc.

To find height A, stand away from A until bubble and line cross each other. Then measure off distance CD and add distance CB. The sum will equal DA.

Furnished with leather carrying case. Length, 5 inches. Type CW.....each \$24.00

## Type L Matthews Woodpecker Telefaults



Used on telephone, telegraph, signal and certain other cables.

A self-contained instrument that will locate water, shorts of all kinds, crosses, grounds, split pairs—every kind of cable trouble except opens.

Uses one dry cell battery. Maximum voltage, under 5. No batteries furnished.

Cannot be confused with other inductive noises—has a tone like a woodpecker on a pole.

Type L, Complete with Coil, Cord, and Receiver, Weight 9 Pounds.....each \$130.00  
Extra Exploring Coils.....each 32.00  
Extra Receivers.....each 14.00

## Model A Dillon Cable Testers and Locators

### Combined



Used to locate where a cable or pipe is buried at and to determine at which depth cable or pipe is buried.

Locates the exact path that a service pipe or cable takes to reach any building and position of a water main in street or alley.

Has a lamp circuit for checking all connections after the test has been set up.

Especially valuable for checking depth of cable at river crossings or for determining whether or not a service pipe is below frost line after a street has been lowered or regraded.

Furnished with detector coil and neutral exploring coil. Built-in level in coil enables the operator to maintain absolute level for accuracy.

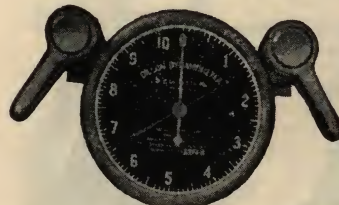
Dimensions:  $11\frac{1}{4} \times 7\frac{1}{2} \times 12\frac{1}{2}$  inches.

Weight,  $21\frac{1}{2}$  pounds.

Shipping weight, 23 pounds.

Model A.....each \$76.00

## Dillon Model AN Dynamometers



An instrument of the traction type which is used for the determination of strain and adapted for a wide variety of uses where traction or pull is to be measured.

The force of the pull, passed through the instrument causes a de-

formation which is indirectly proportional to the load and which is measured by mechanical means.

Operates on the basic scientific principle of the bending of a beam from a true straight line. The beam in this case consists of a solid bar of special alloy steel, heat treated and properly aged to prevent later "growth". Drilled slightly off axial center at each end of the beam is a hole through which shackle is passed. As load is applied to these off center holes, the beam is slightly deformed. This deformation is accurately indicated by a gage movement and amounts to only forty-thousandths of an inch for a full scale 360 degree reading.

Readings are direct for the exerted force is translated directly into pounds on the face of the dial.

Dimensions:  $8\frac{1}{4} \times 6\frac{1}{4} \times 3$  inches.

Weight: with shackles, and carrying case,  $11\frac{1}{6}$  pounds; without shackles and carrying case,  $5\frac{5}{8}$  pounds; shipping weight, 14 pounds.

20,000-Pound Capacity (250-Pound Divisions).....each	\$175.00
15,000-Pound Capacity (125-Pound Divisions).....each	146.00
10,000-Pound Capacity (100-Pound Divisions).....each	122.00
7500-Pound Capacity (50-Pound Divisions).....each	115.50
5000-Pound Capacity (50-Pound Divisions).....each	109.00
3500-Pound Capacity (50-Pound Divisions).....each	102.50
2500-Pound Capacity (50-Pound Divisions).....each	96.00
1000-Pound Capacity (10-Pound Divisions).....each	96.00
500-Pound Capacity (5-Pound Divisions).....each	96.00



**B & L Star Brand Metal Tackle Blocks**

For Manila Rope  
Malleable Iron Shells—Iron Sheaves  
With Loose Side Hooks



No. PU-2325-A  
Single



No. PU-2326-A  
Double



No. PU-2327-A  
Triple

All connections drop forged. Japanned finish.

Lgth. Shell In.	Diam. Rope In.	Iron Bushed			Roller Bushed			Graphite Bronze Bushed Self-Lubricating		
		No. PU-2325	No. PU-2326	No. PU-2327	No. PU-2325	No. PU-2326	No. PU-2327	No. PU-2325	No. PU-2326	No. PU-2327
		Single	Double	Triple	Single	Double	Triple	Single	Double	Triple
3	3/8	\$2.40	\$3.60	\$4.80	\$3.00	\$4.70	\$6.40	\$4.00	\$6.60	\$9.20
4	1/2	2.70	4.00	5.30	3.30	5.10	6.90	4.30	7.00	9.70
5	5/8	3.50	5.30	7.10	4.10	6.40	8.70	5.10	8.30	11.50
6	3/4	4.10	6.30	8.50	5.00	8.00	11.00	6.00	10.00	14.00
7	7/8	5.80	8.40	11.00	7.00	10.50	14.00	8.00	12.50	17.00
8	1	6.60	10.80	15.00	8.00	13.50	19.00	9.00	15.50	22.00
9	1 1/8	10.00	15.00	20.00	12.00	18.00	24.00	13.00	20.00	27.00
10	1 1/4	12.00	18.00	24.00	15.00	24.00	33.00	16.00	26.00	36.00
12	1 1/2	18.00	29.00	40.00	22.00	37.00	52.00	23.00	39.00	55.00

**B & L Star Brand Regular Mortise Inside Iron Strapped Wood Tackle Blocks**

For Manila Rope  
With Iron Sheaves—Loose Side Hooks



No. PU-2207  
Single



No. PU-2208  
Double



No. PU-2209  
Triple

Lgth. Shell In.	Rope Diam. In.	Iron Bushed Only			Iron Bushed Self-Lubricating			Roller Bushed			Graphite Bronze Bushed Self-Lubricating		
		No. PU-2207-C	No. PU-2208-L	No. PU-2209-L	No. PU-2207-C	No. PU-2208-L	No. PU-2209-L	No. PU-2207-C	No. PU-2208-L	No. PU-2209-L	No. PU-2207-B	No. PU-2208-B	No. PU-2209-B
		Single	Double	Triple	Single	Double	Triple	Single	Double	Triple	Single	Double	Triple
3	3/8	\$1.50	\$2.40	\$3.30	\$2.10	\$3.40	\$4.70	\$3.10	\$5.20	\$7.30			
4	1/2	1.70	2.60	3.50	2.30	3.70	5.10	3.20	5.50	7.80			
5	5/8	2.10	3.20	4.30	2.80	4.50	6.20	3.70	6.20	8.70			
6	3/4	2.50	4.00	5.50	3.40	5.70	8.00	4.40	7.70	11.00			
7	7/8	3.00	4.80	6.60	4.00	6.60	9.20	5.40	9.20	13.00			
8	1	4.20	6.40	8.60	5.60	8.80	12.00	7.00	12.00	17.00			
10	1 1/8	7.00	11.00	15.00	9.00	14.00	19.00	11.00	18.00	25.00			
12	1 1/4	12.00	19.00	26.00	14.00	22.00	30.00	16.00	26.00	36.00			

Beckets furnished in all single blocks, one half in double blocks and one third of triple blocks without charge.

**B & L Star Brand Aluminum Shell Conductor Stringing Snatch Blocks**

For Aluminum Cable  
Drop Forged Flatted Swivel Hooks, Heads and Links



No. PU2341-A  
Drop Link  
Pattern

Furnished in drop link or safety locking pattern.

Lynite roller bearing sheaves with polished scores.

This snatch block is made almost entirely of high-grade aluminum, combining lightness with strength, and is used in stringing aluminum conductors.

The main strain is taken through the drop forged swivel hook



No. PU2342 Safety  
Locking  
Pattern

attached to the drop forged steel straps which never come in contact with the conductor.

The PU 2341 drop link pattern furnished unless otherwise specified. When ordering specify number, size of sheave with size of cable to be used.

Size Sheave Inches	Each	—SIZE ALUMINUM CABLE—		Weight Pounds
		Min. CM	Max. CM	
7x13/8x 3/4	.....	No. 2/0	300,000	14
10x1 1/2x 3/4	.....	336,400	500,000	18
14x2 x1	.....	500,000	795,000	37
16x2 1/4x1	.....	795,000	1,272,000	40

**B & L Star Brand Conductor Stringing Snatch Blocks**

Wood Shell—Drop Link Pattern

Drop Forged Flatted  
Stiff Swivel Hooks  
Heads and Links

With Roller Bearing Sheaves

Equipped with specially designed roller bearings to insure freedom of action, as any failure would create a dangerous abrasion of conductors.

These blocks furnished in various sizes and made with special wide throats when so desired, so as to accommodate any large splicing that may run over sheave.

When ordering blocks specify figure number, size and type of sheave with size cable to be used, copper or aluminum.



No. PU2340-SM  
Straight  
Mortise



No. PU  
2340-WT  
Wide  
Throat

Size Sheave Inches	—With Sheave—		—Extra Sheaves—		Throat In.	MAXIMUM SIZE OF CABLE CM.	
	Jap'd. Iron Each	Galv. Iron Each	Jap'd. Iron Each	Galv. Iron Each		Copper	Aluminum
7x13/8x 5/8	\$12.00	\$13.00	\$3.25	\$4.00	...	...	...
7x13/8x 3/4	15.00	16.00	4.75	5.50	...	188,700	300,000
10x1 1/2x 3/4	22.00	23.00	6.75	7.50	...	250,000	397,500

**No. PU2340-WT—Wide Throat**

7x13/8x 3/4	\$16.00	\$17.00	\$4.75	\$5.50	2 3/8	188,700	300,000
10x1 1/2x 3/4	24.00	25.00	6.75	8.00	2 5/8	250,000	397,500
10x1 5/8x 3/4	26.00	27.00	8.50	10.00	2 7/8	300,000	477,000
10x1 7/8x 3/4	28.00	29.00	10.50	11.75	3 1/8	314,500	500,000



## B & L Star Brand Public Utility Snatch Blocks

For Manila Rope  
Eastern Pattern—Malleable Shells  
Drop-Forged Flatted Stiff Swivel Hooks

Has malleable iron shell, extra heavy drop-forged flatted stiff swivel hook, wrought iron straps, safety-locking link and smooth rounded edges to prevent chafing rope.



No. PU-2357, Open

Size Sheave Inches	Self-Lubr. Iron Bushed Each	Roller Bushed Each	Graphite Bronze Bushed Self-Lubr. Each	For Rope Diam. In.	Lgth. Approx. Shell Wt., Lb. Each
3 x 1 1/8 x 1 1/2	\$10.50	\$11.00	\$12.00	7/8	6 9
4 1/2 x 1 3/8 x 5/8	14.00	15.00	16.00	1	8 16
5 3/4 x 1 7/8 x 3/4	22.00	23.00	25.00	1 1/4	10 27

## No. PU 2672 B & L Star Brand Conductor Stringing Snatch Blocks

### Wood Shell

When ordering blocks specify figure number, size and type of sheave with size cable to be used, Copper or Aluminum.



Size Sheave Inches	Each	MAXIMUM SIZE APPROX. OF CABLE CM		Wt. Lb.
		Copper	Aluminum	
4x1 1/4 x 5/8	\$11.00	188,700	300,000	9
6x1 1/4 x 5/8	13.20	188,700	300,000	13
8x1 1/4 x 5/8	17.60	188,700	300,000	22
10x1 1/4 x 5/8	24.20	188,700	300,000	26

## B & L Star Brand Public Utility Snatch Blocks for Wire Rope

Drop Forged Flatted Stiff Swivel Hooks, Heads and Links

Used with pole derricks; for pulling aerial cable, etc. Impression prevents rope jumping between sheave and shell.

All galvanized with sheave for wire rope, with graphite-bronze self-lubricating bushing. Rope guard prevents rope interfering with safety attachment.

Size Block...inches	6	8	10
Each.....	\$18.00	26.00	37.00
Size Wire....inches	3/8	1/2	5/8
Weight Ea...pounds	15	32	52

### Extra Iron Sheaves

Size.....in.	6x1x3/4	8x1 1/4 x 7/8	10x1 1/4 x 1
Each.....	\$3.90	7.50	10.10
Wt. Each....lb.	3 1/2	8	12

## B & L Star Brand Malleable Iron Shell Conductor Stringing Snatch Blocks For Manila Rope

No.....	30	20
Size Sheave...in.	3x3/4 x 3/8	3x1x1/2
Size Hook...in.	5/8	5/8
Size Rope...in.	5/8	3/4

### Japanned

Iron Bushed....ea.	\$5.90	\$6.50
Graphite Bushed..ea.	6.10	6.90
Bronze Bushed...ea.	7.10	7.90

### Galvanized

Iron Bushed....ea.	\$6.30	\$6.90
Graphite Bushed..ea.	6.50	7.30
Bronze Bushed...ea.	7.50	8.30

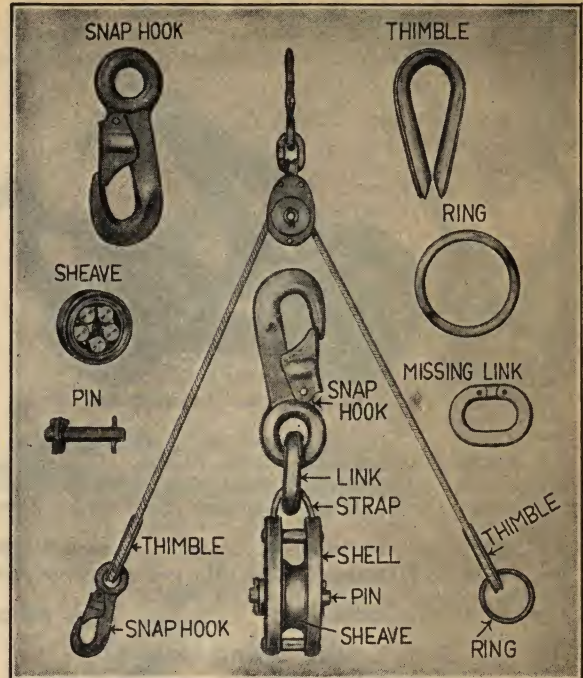


No. 30 PU 2407



No. 20 PU 2408

## B & L Star Brand Aerial Hand Lines



No. PU-37

Consists of 3-inch single roller bushed galvanized hollow steel block, 2 snap hooks, ring, 2 thimbles, missing link, and rope.

Complete with 60 Ft. of Manila Rope...each \$14.00 \$17.50  
Complete with 75 Ft. of Manila Rope...each 15.20 20.00  
Blocks Only without Rope (No Connections)...each 3.60

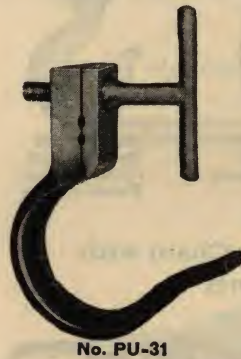
## B & L Star Brand Booster Hooks

Supports the cable while being pulled through the supporting rings.

Some rings, while adequate for supporting a stationary cable, tend to creep when performing the dual function of supporting and resisting movement while the cable is being placed.

Securely clamped to the messenger strand and presents a smooth rounded surface to the moving cable sheath.

Approximate weight, 3 pounds.  
No. PU-31.....each \$6.00



No. PU-31

## B & L Star Brand C Hooks

For connecting the winch or pulling line to the cable grip or core hitch. Also used at the end of the winch line for attaching to poles, transformers, etc.

Approximate weight, 2 1/2 pounds.  
No. PU-28.....each \$6.00



No. PU-28

## B & L Star Brand Flatted Swivel Hooks

### Galvanized

### For Come-Along

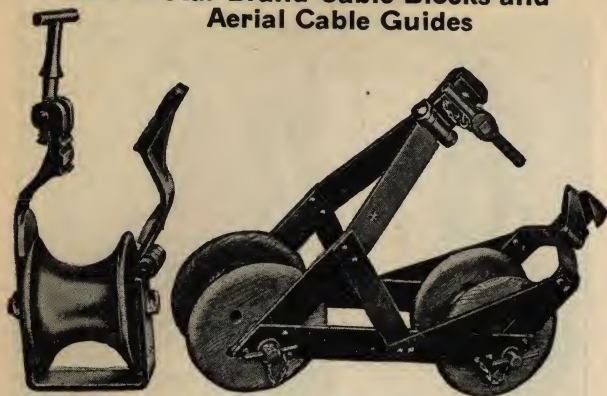
Size.....inches	1/2	5/8
No. PU-41.....each	\$4.60	7.15
For Dbl. Blocks.....inches	3	4
Length Overall.....inches	7 1/4	8
Weight.....pounds	5/8	1



No. PU-41



### B & L Star Brand Cable Blocks and Aerial Cable Guides



No. PU-30,  
Single Sheave  
Cable Block

No. PU-39, Aerial Cable Guide

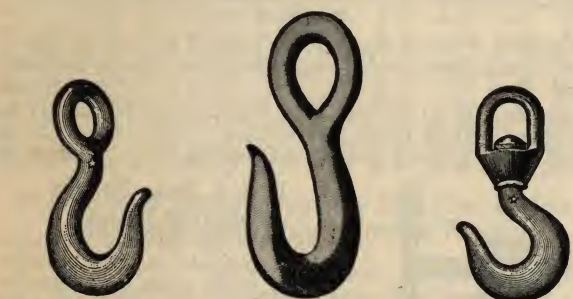
**No. PU-30 Single Sheave Cable Blocks.** For guiding winch lines in conjunction with aerial cable guides. Standard for 2½-inch diameter cable. Other sizes made up for larger diameter cable.

No. PU-30, Weight, 11 Pounds.....each \$18.00

**No. PU-39 Aerial Cable Guides.** For pulling lead covered cable into supporting rings. Has wood rollers.

No. PU-39, Weight, 32 Pounds.....each \$80.00

### B & L Star Brand Hooks



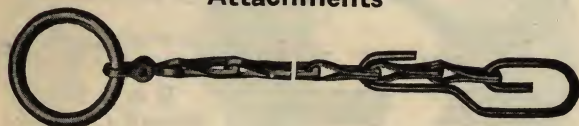
No. PU 2274-F  
Drop Forged Flatted  
Loose Side Hooks

No. PU 2274-R  
Drop Forged  
Round Loose Hooks

No. PU 2275  
Drop Forged  
Flatted Loose  
Swivel Hooks

Prices upon application.

### American Arc Lamp Chain with Attachments



Made in three sizes: Nos. 31 and 33 for suspending arc lamps, and No. 35 for suspending incandescent lamps. It is heavily galvanized and rust-proof.  
Put up on 500-foot reels.

Size No.	Description	Tensile Strength Pounds	Wt. per 1000 Feet	Lbs. per 100 Feet	Price
31	For Heavy Street Fixtures.....	915	118		\$8.50
33	For Medium Street Fixtures.....	725	89		8.25
35	For Light Street Fixtures.....	550	71		7.50

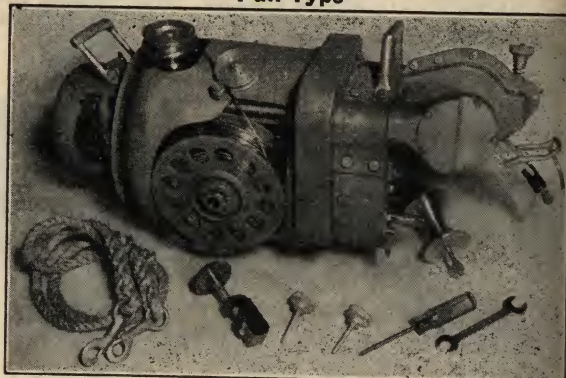
#### Galvanized Attachments

Hooks		31	33	35
For Chain Nos.....		31	33	35
Price, Hooks.....per 100		\$6.00	6.00	4.00
Rings		31	33	35
For Chain Nos.....		31	33	35
Price, Rings.....per 100		\$9.00	5.00	3.00
Connecting Links		31	33	35
For Chain Nos.....		31	33	35
Price, Connecting Links.per 1000 sets		\$38.00	38.00	30.00

### Cable Spinning Equipment

The following list of equipment was designed to support and maintain aerial cable and wires to steel supporting strand by the spinner method, which consists of spiraling a wire of suitable size and material around the wires or cable to be supported and the supporting strand. This method has proved its worth and has been adopted as standard practice.

#### No. 300 Neale Model D Spinners and Chests Pull Type



Designed for use by a construction gang to place and spin new cable or maintenance spinning of existing cable. Operates on 10 ball bearing surfaces.

Adjustable to take cable from 11 pair, 26 gage to the maximum size 909 pair, 24 gage, sheath diameter 2¼ inches.

Ring pusher is removable. Wire supply is always visible.

Will operate with either .091 or .061-inch spinning wire.

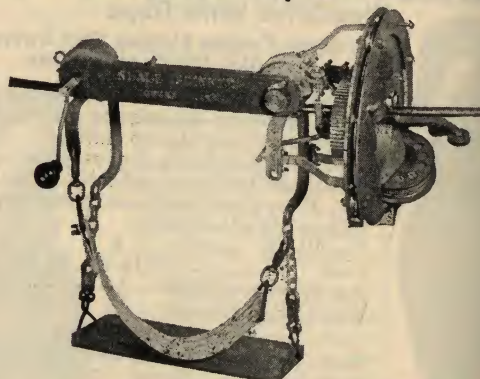
A ratchet on the strand wheel prevents slack in the spinning wire when pull on tow line is released.

Length, 24 in. Diameter, 10 in. Weight, 42 pounds.

Furnished with one lashing wire clamp.

Packed in a durable chest made of ¾-inch plywood reinforced with metal on all edges and corners. Weight of chest empty, 33 pounds.

#### No. 100 Neale Model B Spinners and Chests



A one-man machine to place and spin new cable or for maintenance spinning of existing cable. Operated either by a hand crank or may be pulled along the supporting strand by a man on the ground. A dead weight of 50 to 100 pounds can be substituted for a rider in order to prevent slippage.

The two supporting trolley wheels are connected together by means of a bicycle chain. A removable gate is provided in the spinner head, which permits the spinner to be placed over strand and cable at the beginning of a span and readily removed when the next pole is reached. Has ball bearings at all points of wear. Frame is made of steel tubing. Chain drive is geared for upgrades.

Wire is carried on an aluminum reel which holds approximately 325 feet of wire.

Furnished with three sets of rollers to accommodate different sizes of cable. Equipment includes spinner chest, seat and safety belt, one tube of grease, and one spinning wire clamp. All metal parts not aluminum or bronze are cadmium plated.

Packed in a durable chest made of ½-inch plywood reinforced with metal on all edges and corners. Weight of chest empty, 53 pounds.



## Cable Spinning Equipment



No. HB3

**No. HB3 S&S Hand Line Block** is a tool especially designed for spun cable but is also used on cable supported by other methods. It clamps on the strand without damage to the cable and will not slip on a grade. No wrench is needed. Made of bronze alloy. Length, 10 inches. Weight, 4 pounds.



No. LC5

**No. LC5 Neale Spinning Wire Clamp** is a positive action clamp to hold the spinning wire in place when terminating at the pole and to keep the slack from running back when repairing cable. Made of bronze alloy with cadmium plated screw. Length closed,  $3\frac{1}{4}$  inches. Length open,  $4\frac{1}{2}$  inches. Weight, 1 pound.

## No. 27 Chance Rubber Wheel Flexible Safety Cable Car



This car can be collapsed, strapped or tied for convenient transportation. Adjustable up or down, by snaps and chain. Chain is made of steel, electric welded on sides of links to guard against weld opening. Snaps used are linemen's snaps of drop forged, galvanized steel.

Holes are provided in open side of car frame for snapping on safety belt.

Car is equipped with hand brake to hold chair stationary.

Seat is made of high grade fir lumber, reinforced with

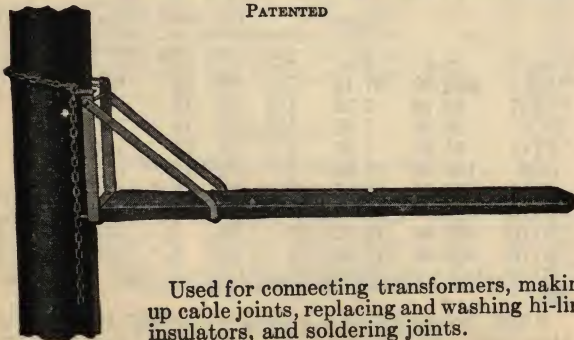
strap steel imbedded in wood.

Width, 21 inches. Weight packed, 27 pounds.

No. 27.....each ....

## No. 600 Peirce Lineman's Safety Platforms

PATENTED



Used for connecting transformers, making up cable joints, replacing and washing hi-line insulators, and soldering joints.

Width,  $9\frac{3}{8}$  inches. Length, 71 inches.

No. 600. Ship. Wt. Each, 50 Pounds....per 100 \$11,494.31

## Hubbard Pole Seats

Hot Galvanized

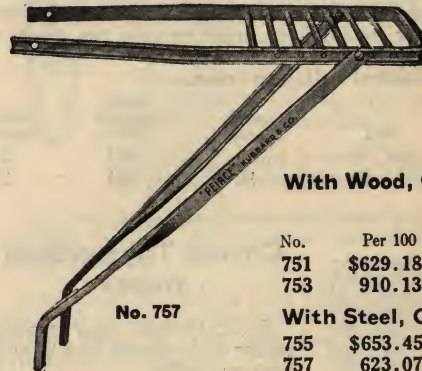


Will support more than three fourths of a ton safely.

The frames and braces of all sizes are of  $1\frac{1}{2}$  inch channel steel, except No. 9030, which is constructed of  $\frac{1}{8}$ -inch round steel.

The wood seats are  $1\frac{1}{8}$ -inch cypress, boiled in creosote. The bars of the all-steel seats are  $\frac{3}{8}$ -inch square steel, secured to frame in such a manner as to leave no projecting ends. There is no strain on riveted joints. Bars are placed with corners up to prevent slipping.

No. 751



No. 757

### With Wood, Creosoted Seat

No.	Per 100	Size Seat Inches	Shipping Wt. Lb. Per 100
751	\$629.18	11x12	1300
753	910.13	11x20	1400

### With Steel, Galvanized Seat

755	\$653.45	12x13 $\frac{7}{8}$	1400
757	623.07	12x11	1300

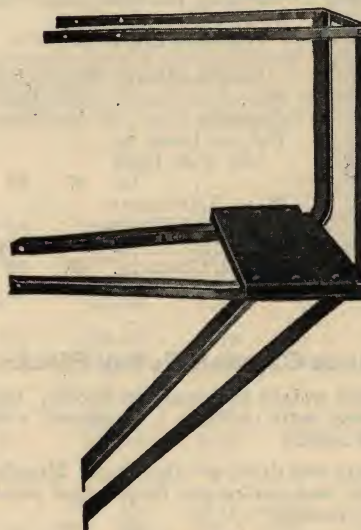
### With Wood, Painted Seat

†9030	\$3487.57	8x26	4300
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†A. T. & T. Co. Std.

## Hubbard Pole Balconies

Hot Galvanized



No. 9035

Used for convenience and comfort in telephone terminal box work and serves as switching platform with power companies.

Frame, braces and guard rails of No. 9035 are made of open hearth steel, galvanized by hot-dip process. Wooden platform is of thoroughly seasoned oak, painted with two coats of standard green pole paint.

Nos. 9035 and 9045 are identical except that the railing on No. 9035 fastens to a telephone terminal box and the railing on No. 9045 fastens to the pole.

Upright braces are  $1\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{3}{16}$  inch steel; the platform supports,  $1\frac{3}{4}$ x $1\frac{3}{4}$ x $\frac{3}{16}$  inch angle steel; and the guard rail of  $1\frac{1}{4}$  inch flat steel.

The complete balcony includes all bolts for fastening parts together but not the bolts for attaching to pole.

No.....	†9035	9045
Per 100.....	\$5404.26	6726.37
Size Seat.....	14x30	14x30
Shipping Weight Per 100.....	6300	6700

†A. T. & T. Co. Std.



## Chance Economy Platforms



Used wherever a board of 24 or 30 inches in length is required or where maximum economy is desired.

Easily attached to pole by a single chain tightener. There is no brace pole, the board being fully supported by its mounting bracket.

Recommended for use where working space is limited.

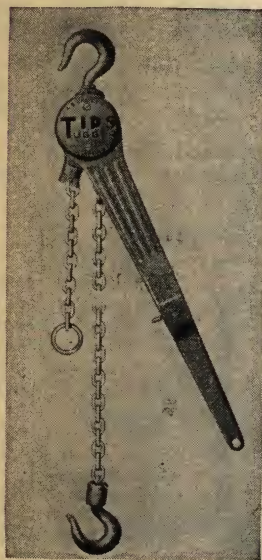
Will support the weight of one man. Has been tested to loads up to 850 pounds.

On towers, blocks should be placed under the chain on the inside of the tower leg angle in order to give the chain a firm grip.

Top of board finished with grip tread.

No.	Each	Length Inches	Rated Strength Pounds	Weight Pounds
M4901-51	\$14.75	24	600	26
M4901-52	15.50	30	600	29

## Chance Tugger-Steel Hoists



A lightweight spur geared puller with ratchet handle and friction brake.

All working parts of mechanism and brake are fully enclosed and protected.

Simple button adjustments A and B free brake and ratchet mechanism permitting free wheeling to make easy connections.

Standard lift, 5 feet.

Length of lever, 20 1/2 inches.

No.	75T	150T
Capacity.....	3/4	1 1/2
Pull on Lever to Lift Full Load.....lb.	60	83
Min. Distance Between Hooks.....in.	9 1/2	12 3/4
Length Chain.....in.	66	76
Weight.....lb.	13	24

## Chance Capstan Pulley Blocks

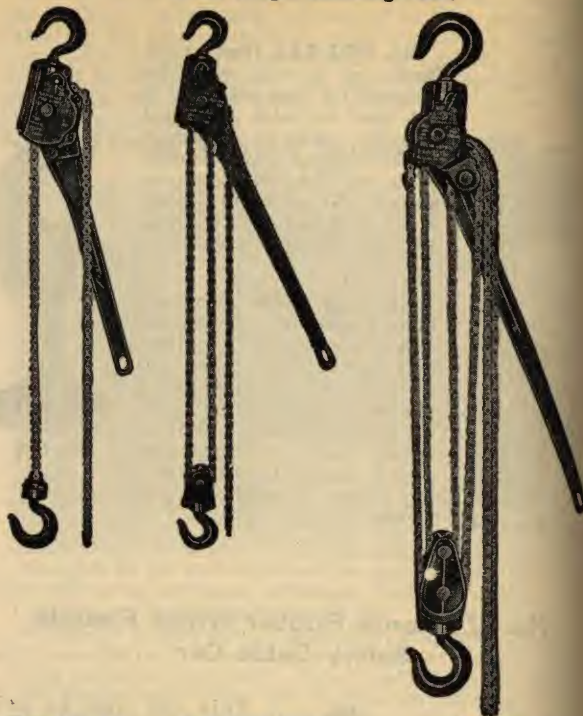


A light weight tool, easy to handle. Has a leverage ratio of 32 to 1. Equipped with ratchet handle.

Pulleys and drum are aluminum. Handle, housing, and hooks are drop-forged steel. Rope is manila.

No.	Capacity Pounds	Size Rope Inches	Net Weight Pounds
2	2000	1 1/2	15
* 2A	2000	1 1/2	13
4	4000	5/8	25 1/4
* 4A	4000	5/8	20 1/2
22	3000	1 1/2	19 1/4
*22A	3000	1 1/2	16 3/4
44	5000	5/8	31 1/4
*44A	5000	5/8	25 3/4

\*Without rope.

Coffing Safety-Pull Ratchet Lever Hoists  
\*With Single Locking Pawl

Nos. AG, FG

Nos. ATG, FTG

No. ZG

A safe and fast ratchet lever hoist. Equipped with a dual ratchet and pawl assembly, independent of each other, therefore the load is always under control. There is no clutch to slip and the hoist cannot drop its load.

Because of its adaptability to all types of work where a full stroke of the handle is permitted this single pawl hoist is the choice of most light and power and telephone construction and maintenance crews. Can be used for lifting or pulling.

Has side lever for positive up or down and a neutral position for automatic safety control, making hoist easy to operate. Has free chain feature, that is, when there is no load on hoist a slight pressure on thumb latch on side of lever allows load chain to be pulled through hoist, either up or down, without operating lever.

Malleable iron safety-valve handle will bend at maximum overload before chain will break or hooks will straighten out. Reversible handle. Safety stops prevent handle from spinning in case operator's hand should slip off handle.

All Safety Pull hoists are factory tested at 100 percent over their rated capacity.

Nos. ATG, FTG and ZG hoists are readily converted by unsnapping the special snap hook from connecting link at bottom of hoist and allowing snap hook to act as a lug, preventing end of chain from passing through the super block.

No.	Each	Extra Lift per Foot	Rated between Cap. Hooks Tons	Min. Dist. between Hooks In.	Lift Speed per Min. In.	Lb. on Lever to Lift Rated Cap.	Std. Lift Inches	Wt. Lb.
*AG	\$36.30	\$1.10	3 1/4	13	36	56	56 1/2	14
*ATG	45.10	2.20	1 1/2	15	18	60	57	17
*FG	52.25	2.25	1 1/2	16	48	116	56 1/2	25
*FTG	65.45	4.50	3	17	24	124	57	34
ZG6	126.50	9.00	6	25	12	124	53	59
WG9	258.50	11.25	9	30	9.6	124	60	120
WG11	280.50	13.50	11	30	8	124	60	130
WG13	302.50	15.75	13	30	7	124	60	140
WG15	330.00	18.00	15	30	6	124	60	150

\*If wanted with intermediate locking pawl, add \$5.50 to list.

NOTE. By attaching a special iron block, called a super attachment, to Nos. AG or FG along with 5 feet of chain, to keep the standard 5-foot lift, they can be converted into double their rated lifting capacities. Super attachment for No. AG, \$5.55; for No. FG, \$7.20.

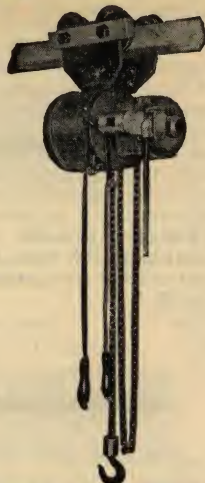


## Coffing Quik-Lift Electric Hoists

Standard Lift, 8 Feet



With Hook Suspension



With Trolley Suspension

Heavy duty motor, ball bearing, high starting torque. Can be plugged into any a-c or d-c circuit. Fool-proof safety limit switches automatically stop operation of hoist.

Hoist with trolley suspension has Hyatt roller bearings. Furnished with lubri-seal ball bearings throughout. Gears and pinions made of special alloy steel, heat-treated cut teeth. Gear system sealed and running in oil. Hooks made of drop-forged alloy steel, heat-treated to stand 200 per cent over rated capacity.

Extra heavy load chain is made of special alloy steel. Will not kink or bend. Sheave is extra heavy steel casting.

Sensitive pendant rope control permits load to be raised or lowered a fractional part of an inch.

When ordering, state voltage, phase and cycle, lifting speed, and whether for a.c. or d.c.

## Model J

110-220 V., 1 Phase, 60 Cycle or 220-440 V., 3 Phase, 60 Cycles

No.	With Coil Chain Each	With Roller Bearing Trolley and Hook Suspension Each	Extra Chain per Lineal Foot	Capacity Pounds	Lifting Speed In Ft. per Minute	Motor Hp.	Wt. Lb.
J-500-22	\$180.00	\$200.16	\$.85	500	22	1 1/2	89
J-500-33	198.00	218.16	.85	500	33	1 1/2	99
J-500-49	216.00	236.16	.85	500	49	3/4	126
J-1000-11	180.00	201.60	.85	1000	11	1 1/2	95
J-1000-17	198.00	219.60	.85	1000	17	1 1/2	115
J-1000-24	216.00	237.60	.85	1000	24	3/4	135
J-1500-17	230.00	255.20	1.05	1500	17	3/4	135
J-2000-8	209.00	234.60	1.05	2000	8	1 1/2	115
J-2000-12	230.00	255.20	1.05	2000	12	3/4	135
JD-3000-8 1/2	247.25	279.65	1.05	3000	8 1/2	3/4	155
JD-4000-4	240.00	281.76	1.05	4000	4	1 1/2	155
JD-4000-6	247.25	289.01	1.05	4000	6	3/4	180

## Model S

220 or 440-V., 3-Phase, 60 Cycles

No.	With Coil Chain Each	With Roller Bearing Trolley and Hook Suspension Each	Extra Chain per Lineal Foot	Capacity Pounds	Lifting Speed In Ft. per Minute	Motor Hp.	Wt. Lb.
S-1000-36	\$297.85	\$319.45	\$1.05	1000	36	2	165
S-2000-18	297.85	323.05	1.05	2000	18	2	165
S-2000-36	330.00	355.20	1.05	2000	36	2	210
SD-4000-9	312.40	354.16	1.05	4000	9	2	175
SD-4000-18	341.25	383.01	1.05	4000	18	2	225

The letter D signifies that hoist has a double chain.

Motor specifications, other than above, furnished upon application.

## Model YC Coffing Ball Bearing Spur-Gear Chain Hoists



Top hooks and load hooks are made of drop forged heat treated steel and are tested at more than 100 per cent over their rated capacity without any signs of yielding.

Extra heavy certified malleable iron cross-head assures maximum strength and permits rocking motion of hoist.

Heavy suspension plates provide support between top hook crosshead and load sheave. Also support the malleable iron saddle for double chain hookup. On double chain hoists, these plates eliminate the use of a top yoke, reducing weight and headroom and permitting hoist to hang evenly at all times.

Weston automatic load brake securely holds load at any desired position. A slight pull on hand chain is required to lower load. Dust guard protects brake from dust and dirt.

Load sheave is large and heavy and is a special Zee metal casting with pockets formed to fit steel links of load chain.

Driving pinion is made of special alloy steel to resist breaking, twisting and bending.

The load sheave is mounted on two heavy precision ball bearings, enclosed and protected from dust and grit, eliminating friction.

Load chain is made of high grade steel, electric welded, heat treated and at the proper pitch to fit the sheave pockets perfectly. At a maximum overload this chain will stretch before breaking.

Planetary spur-gear type gear system. Gears are mounted on bronze bushings and enclosed in a pressed steel cover. The gear pressure is so balanced that practically all friction is eliminated and efficiency increased.

Sturdy malleable iron hand chain guide prevents snagging and fouling of hand chain.

A heavy steel anti-friction Timken thrust bearing permits free swiveling of the load hook.

Highly polished steel hand chain fits perfectly into the pockets of the hand chain wheel.

Rated Capacity Tons	Standard Lift Each	Extra Lift per Foot	Travel of Lower Hook or Standard Lift Feet	EXTRA LOAD Chain Feet	EXTRA LIFT Hand Chain Feet	LENGTH STANDARD CHAIN IN LINEAL FEET	Load	Hand
1/2	\$66.50	\$1.20	8	1	2	9	16	
1	85.50	1.45	8	1	2	9	16	
1 1/2	114.00	1.70	8	1	2	9	16	
2	133.00	2.10	9	1	2	10	18	
3	171.00	2.80	10	2	2	22	22	
4	209.00	3.60	10	2	2	22	22	
5	245.00	3.60	12	2	2	26	16	

Rated Cap. Tons	Test Load in Tons	Min. Dist. Bet. Hooks Inches	Chain Pull to Lift Full Load Pounds	Chain Overhaul to Lift One Foot Feet	HOISTING SPEEDS FEET PER MINUTE			Weight Pounds
					Full Load	Half Load	Quarter Load	
1/2	1	12	57	21	8 1/2	17	26	62
1	2	15 1/2	76	31	4 1/4	8.5	13	94
1/2	3	18	103	35	5.1	10.2	15.3	136
	4	21	112	42	3.9	7.8	11.7	204
3	6	28	107	70	2.5	5.0	7.5	183
4	8	32	116	84	1.9	3.8	5.7	240
5	10	32	116	109	1.3	2.6	5.2	245



### Coffing Power Pike Poles

This pole is built of two pieces of galvanized pipe, one telescoping the other. Power is obtained through the use of a Coffing Load Binder or Safety-Pull Hoist.

For straightening leaning poles one man, with this tool, can do the work of from two to six men.

Pole has a heavy steel base. Top cannot slip off pole.

Load binder or hoist can be used for many other purposes.

Height: minimum, 8 feet 2 inches; maximum, 11 feet 7 inches.

Weight 32 pounds.

Complete with Model A Load

Binder.....each \$35.45  
Pole Only.....each 18.20

### Coffing Midget Light Line Pullers



A tool for pulling telephone and light wires, and for many other uses. Built on the ratchet and/or crank principle.

Equipped with roller chain, five feet long.

Rated capacity, 600 pounds. Handle so constructed with a safety feature that it will bend at 100 per cent overload.

Each, Wt. 6 lbs. .... \$24.95  
Extra Chain.....per foot .60

### Coffing Load Binders

Drop-forged steel hooks with swivels on both ends. The take-up is  $\frac{5}{8}$  inch to each stroke of the handle.

If load becomes loose, it can be bound tight simply by drawing on lever. After load is taken off chain, both levers can be tripped at once and chain can be pulled through binder free.

Can also be used as a hoist and for stretching wire or cable.

Model.....	A	F
Load Binder.....each	\$17.25	\$24.00
Super Attachment (Special Iron Block).....each	5.55	7.20
Extra Chain.....per lifting ft.	1.10	2.25
Rated Capacity.....tons	2	3
Standard Lift.....feet	2	2
Standard Chain.....feet	2	2
Lifting Speed per Minute.....in.	36	48
Weight.....lbs.	11½	24

### Coffing Temporary Cross Arms

Built to stand hard usage. Weighs much less than a standard cross arm, and no line truck should be without at least one set.

No. 10-A



For electric work. Hooks are self-locking, made of certified malleable iron, large enough to hold line hose to prevent current from arcing.

No. 10-A.....each \$17.55

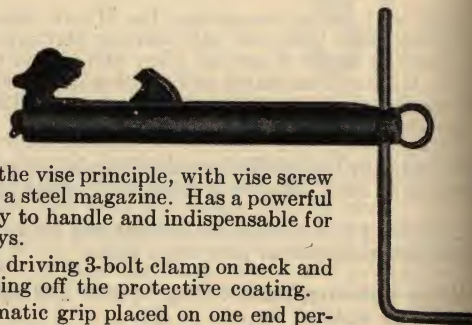
No. 10-C



For changing cross arms on corners.

No. 10-C.....each \$14.95

### Coffing Temporary Guy Clamps



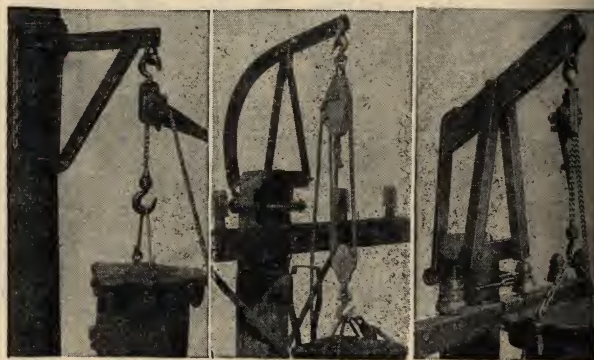
Built on the vise principle, with vise screw enclosed in a steel magazine. Has a powerful grip, is easy to handle and indispensable for necking guys.

Prevents driving 3-bolt clamp on neck and thus stripping off the protective coating.

An automatic grip placed on one end permits necking as close to the pole as desired without slipping. Weight, 3½ pounds.

Each.....\$8.50

### Coffing Transformer Gins



Model ST

Tested to more than 3000 pounds without yielding.

Model OST

Model ST

Clamps on side of pole. Malleable iron and steel.

Model ST, Weight, 28 Pounds.....each \$16.10

Model OST

Clamps securely to top of any size pole. Made of special spring steel, angle iron legs and malleable iron clamp.

Model OST, Weight, 33 Pounds.....each \$16.10

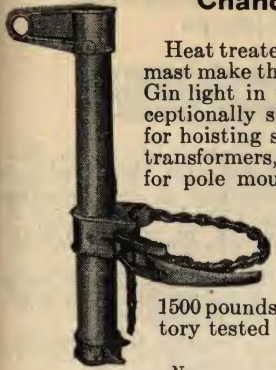
Model WT

Main body and legs made of seasoned hickory, bolted to malleable iron clamp. Non-conductor of electricity.

Model WT, Weight, 28 Pounds.....each \$16.10



## Chance Transformer Gins



Heat treated aluminum castings and wooden mast make the Chance Insulated Transformer Gin light in weight, easy to handle, and exceptionally strong. It is designed primarily for hoisting small distribution and rural line transformers, circuit breakers, and reclosers for pole mounting. Gin is applied to pole quickly by the safety locking Chance Chain Tightener. Eye of gin extends out 8½ inches from pole, allowing adequate clearance for hoisting. Rated for 1500 pounds maximum load. Every gin is factory tested before shipment.

No.	Description	Approx. Wt., Lb.
30TG	24-Inch Gin Complete	10½
30TG-1	36-Inch Gin Complete	11½

## No. 325 Chance Pole Unloaders



The Chance Safety Trip Pole Unloader features a safety lock pin plus a toggle trip arrangement which prevents release of the load until the lever is pulled by hand line to shift the toggle past dead center. Using this safety trip method, only two men are needed for unloading poles instead of an entire crew. A once hazardous job is made safe.

Safety Pole Unloader Set Complete consists of: 2 safety trips with bolts and large washers; 2 steel rope cables, 25'x¾"; 2 thimbleye bolts, ¾x12 inches with large washers; 4 Crosby wire rope clamps for ¾-inch wire rope.

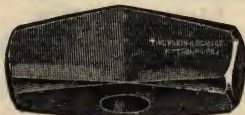
Approximate weight, 58½ pounds.

## No. 127 Klein-Logan Striking or Drilling Hammers

Long or Nevada Pattern. 12-lb. and under have polished ends.

Size.....	pounds	4	6	8	10	12	16
No. 127.....	each						

## No. 3 Klein-Logan Hand Drilling Hammers



Made of steel. Round eye size, 7/8-inch. Available in 2, 3, and 4-pound sizes.

No. 3.....	each						
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## No. WM13 Vaughn & Bushnell Lineman's Double Faced Hammers

Bell System Type



Drop forged head with special short neck designed to strike a heavy accurate blow in a confined space. Length over all, 15 inches.

Weight of head, 2¼ pounds. Weight of hammer complete, 3 pounds. Packed 4 in a box.

No. WM13.....	each	\$3.00
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## No. 1 Klein-Logan Cutter Mattocks



Made of good quality steel. Black finish.

Packed 2 dozen in a case.

Weight.....	pounds	3	5
No. 1.....	per dozen		
Eye No.....		7	6
Blade Width.....	inches	3	3½

## No. A-2 Klein-Logan Pick Mattocks



Made of open hearth steel.

Size Hoe.....	inches	7½x3½
Per Dozen.....		
Size Pick.....	inches	8½
Weight.....	pounds	5

## Klein-Logan Contractors' Picks



Made of steel.

No.....	40	41
Length.....	inches	30
Point.....	Round	Square
Weight.....	pounds	8

## No. 260 Pinch Point Crowbars



Made of good quality steel.

Weight.....	pounds	12	18	22	26
No. 260.....	each				
Length.....	feet	4¼	5	5¼	5½
Size Stock at Point.....	inches	1½	1¾	1¾	1½

## No. 266 Klein-Logan Digging Bars



Standard 1½-inch octagon, 8 feet.

Prices upon application.

## Chance Linemen's Socket Wrenches



Fits heads and nuts of all standard bolts for pole and guy work.

Drop forged.

No.....	154	234
For Nut Size.....	inches 5/8 & Smaller	¾ & Smaller
Net Weight.....	pounds 2½	3¼

## No. 3146 Klein Linemen's Wrenches

Bell System Type



Wrench is particularly adapted for use on heavy 3-bolt guy clamps on which the clearance for a wrench is limited.

This wrench is forged of select bar steel, heat treated, and is of the open end type with two openings of a different size at each end. There is a hole provided at the larger end so that the wrench may be used for turning in standard pole steps.

Size, 13 inches. Weight per dozen, 23 pounds.

No.....	3146	3146-A
Each.....	\$5.20	5.20
For Size Hardware.....	inches 5/8	¾
Openings on Larger End.....	inches 1½ and 1½	1½ and 1½
Openings on Smaller End.....	inches 1½ and 5/8	5/8 and 7/8



**No. 102-1 Klein Splicing Clamps**

Arranged with 5 round holes for bare wire. For copper wire Nos. 8, 10, 12, 14, 16, B & S. For iron wire Nos. 10, 12, 14, 16, 18, B.W.G. Length, 8 inches.

No. 102-1.....each \$5.70

**No. 102-3 Klein's Splicing Clamps**

Large hole can be used for guy wire or messenger strand. Copper wire Nos. 2, 4, 6, 8, 10 and 12 A. W. G.

Iron wire Nos. 4, 6, 8, 10 and 12 B. W. G.

No. 102-3, 10 $\frac{3}{4}$ -Inch. Wt. per Doz., 16 $\frac{3}{4}$  lbs. each \$7.40

**No. 102-30 Klein's Splicing Clamps**

Holes reversed for those who prefer this arrangement

Copper wire Nos. 2, 4, 6, 8, 10, 12 A. W. G.

Iron wire Nos. 4, 6, 8, 10, 12, 14 B. W. G.

No. 102-30, 10 $\frac{3}{4}$ -Inch. Wt., per Doz., 15 lbs. ....each \$7.40

**No. 102-48 Klein's Splicing Clamps**

Largest hole convenient to bring together guy strand before applying a three bolt clamp.

Copper wire Nos. 0, 2, 4, 6, 8 A. W. G.

No. 102-48, 10 $\frac{3}{4}$ -Inch. Wt., per Doz., 15 lbs. ....each \$7.40

**No. 105-15 Klein's Splicing Clamps  
For Twisting Double Tube Sleeves**

For copper sleeves Nos. 8, 10, 12, 14, 17, A.W.G.

For iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G.

No. 105-15, Size 8-inch. ....each \$6.10

**No. 105-17 Klein's Splicing Clamps**

Has five sets of chamber for twisting double tube sleeves.

For copper sleeves Nos. 6, 8, 10, 12, 14, 17, A.W.G.

For iron sleeves Nos. 8, 10, 12, 14, 16, 19, B. W. G.

No. 105-17, Size 10 $\frac{3}{4}$ -inch. ....each \$7.40

**No. 105-31 Klein's Splicing Clamps**

Three double chambers for twisting Nos. 10 and 12 A. W. G. sleeves, Nos. 12, 14, and 17 N. B. S. sleeves.

No. 105-31, 8 $\frac{1}{4}$ -Inch. Wt. per Doz., 5 $\frac{3}{4}$  lb. ....each \$6.10

**No. 132-15 Klein Combination Wire  
and Sleeve Clamps**

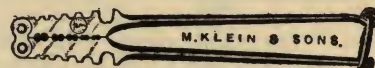
Used for telegraph, telephone and power line work. Has an unusual range of wire and sleeve sizes. Made with 5 round holes for twisting bare wire and an oval opening for guy wire or messenger strand. Copper wires No. 4, 6, 8, 10, 12, A.W.G. Iron wire Nos. 6, 8, 10, 12, 14, B.W.G. Strand opening, .437x.624.

Reverse side has 5 chambers for twisting double tube sleeves. Copper sleeves Nos. 6, 8, 10, 12, 14, 17, A.W.G. Iron sleeves Nos. 8, 10, 12, 14, 16, 19, B.W.G.

Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handles.

Size, 11 $\frac{1}{4}$  inches. Weight per dozen, 18 pounds.

No. 132-15.....each \$10.50

**No. 132-46 Klein Wire and Sleeve Clamps**

One side for double tube copper sleeves Nos. 4, 6, 8, 10, and 12 B. W. G. Other side for copper wire Nos. 4, 6, 8, 10, and 12 B. W. G.

Weight per dozen, 17 $\frac{3}{4}$  pounds.

No. 132-46.....each \$10.50

**No. 132-12 Klein's Combination Wire and  
Sleeve Clamps**

For telephone and telegraph general line and trouble work. This clamp has four round holes for twisting bare wire.

Copper wire Nos. 6, 8, 10, 12, B. & S.

Iron wire Nos. 8, 10, 12, 14, B. W. G.

The reverse side has four double chambers for twisting sleeves.

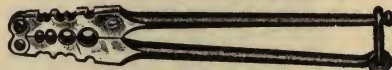
Copper sleeves Nos. 8, 10, 12, 14, 17, B. & S.

Iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G.

Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handle.

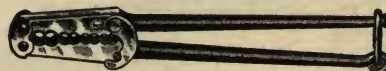
Weight per dozen, 11 pounds.

No. 132-12, Size, 9 Inches. ....each \$7.70

**No. 132-30 Klein's Combination Wire and  
Sleeve Clamps**

Sleeve openings are for N.B.S. and B.W.G. sizes 9 and 8 respectively. Remaining five openings cover range of wire sizes used on railroad signal and telegraph work.

No. 132-30, Size, 11 $\frac{1}{4}$  In., Wt. per Doz., 18 Lb. ....each \$10.50

**No. 132-48 Klein's Copperweld Sleeve Clamps**

This clamp has four chambers for twisting single tube (oval) sleeves used for making joints on copperweld conductors sizes 4A, 6A, 8A, and 3 No. 12. These chambers also accommodate single tube (oval) sleeves as in following table:

Copperweld Size No.	Solid B&S Copper No.	Strand B&S Copper No.	Copperweld Size No.	Solid B&S Copper No.	Strand B&S Copper No.
4A	1	2	8A	4	5
6A	3	4	3 No. 12	5	6

Swing latch holds head securely closed while joint is twisted preventing slippage or burning which might develop otherwise from bowing of handles when twisting larger sleeves.

No. 132-48, Size, 11 $\frac{1}{2}$  In., Wt. per Doz., 18 Lb. ....each \$12.20



### No. 132-39 Klein's Strand and Wire Holding Tools



This tool serves as a temporary clamp to hold together two sections of strand or wire while placing permanent clamps or splicing and serving.

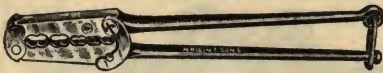
Openings will fit:  $\frac{1}{8}$ -inch strand (16000-lb. Bell System);  $\frac{3}{8}$ -inch strand (10000-lb. Bell System);  $\frac{1}{4}$ -inch strand (6000-lb. Bell System);  $\frac{1}{8}$ -inch strand (2200-lb. Bell System);  $\frac{1}{4}$ -inch solid No. 12 B.W.G. iron or No. 10 B. & S. copper wire; and  $\frac{3}{8}$ -inch solid No. 13 B.W.G. iron or No. 11 B. & S. copper wire.

Hammer forged from high grade tool steel. Polished head and handles temper blued.

Weight per dozen, 18 pounds.

No. 132-39, Size, 11 $\frac{1}{4}$  Inches.....each \$10.50

### No. 132-47 Klein's Wire and Sleeve Clamps

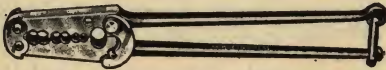


For single tube or oval copper sleeves. Nos. 2, 4, 6, 8, and .104.

Hinge has stop to prevent handles from opening beyond point convenient for clamping on sleeve.

No. 132-47, Weight per Doz., 18 Lbs.....each \$12.20

### No. 132-74 Klein's Wire and Sleeve Clamps



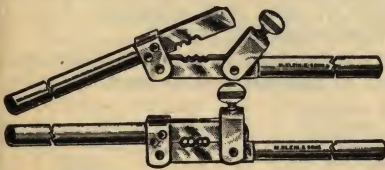
Has three special chambers for twisting single tube or oval (Memco) sleeves Nos. 2, 4, and 6; also an oval (hog) hole .437x.624 for guy strand.

Chambers or openings are a modified figure eight shape, giving a secure hold which prevents burning sleeve when joint is twisted. Swing latch overcomes any spring in handle which might otherwise develop when used on larger sleeves. Stop in hinge prevents handles from opening beyond the point convenient for clamping onto the sleeve.

Hammer forged from high grade tool steel, polished head, temper blued handles. Size, 11 $\frac{1}{2}$  inches.

No. 132-74, Weight per Dozen, 16 Pounds.....each \$12.20

### No. 107-20 Klein's Di-Stock Sleeve Twisters



For all types of oval or double tube copper or aluminum sleeves from No. 4 B&S solid to No. 3/0 B&S strand. Tubular handles,  $\frac{7}{8}$ -inch diameter, threaded onto head. Readily attached or removed. Space between yokes, 3 inches, usually sufficient for three sleeve openings.

Head readily and securely tightened onto sleeve by thumb nut operating in hinged yoke. Central position of head makes for ease in keeping sleeve straight while twisting joint and provides ample leverage. Held in blank and finished with sleeve openings as ordered.

Length overall, 23 $\frac{1}{2}$  inches. Weight, 3 $\frac{1}{4}$  pounds.

No. 107-20.....each \$23.00

### No. 107-34 Klein's Di-Stock Sleeve Twister



Head forged from high grade tool steel and heat treated for maximum toughness and wear. A hand operated cam lever closes the head securely on the sleeve—no thumb screws to bother with.

Tubular handles are furnished.

No. 107-34, Weight, 9 Pounds.....each \$40.20

### Klein's Chicago Grips

Main body piece and lever are forged steel. Draw parts are wrought steel. Gripping jaws are machined smooth.

#### No. 1613—For Bare Wire



Bronze lining of jaws prevents slippage and consequent surface abrasion of conductor or strand.

No.	Each	B. & S. WIRE SIZE		Approx. Max. Open. In.	Wt. Lb.
		Maximum	Minimum		
1613-30	\$5.20	6 Solid (.162")	12 Solid (.081")	.22	1 $\frac{1}{2}$
1613-30B	7.70	Same as above,	with Bronze Lined Jaws		
1613-40	8.20	0 Strd. (.373")	10 Solid (.102")	.44	3
1613-40B	13.80	Same as above,	with Bronze Lined Jaws		
1613-50	13.80	4/0 Solid (.460")	6 Solid (.162")	.52	8
1613-50B	23.00	Same as above,	with Bronze Lined Jaws		

#### No. 1611—For Insulated Wire



Similar to No. 1613, but with the necessary extra width in jaws "lipped" out to avoid unnecessary weight.

Closed Position

The upper jaw has saw-tooth gripping notches.

No.	Each	B. & S. WEATHERPROOF WIRE SIZE		Approx. Max. Open. In.	Wt. Lb.
		Maximum	Minimum		
1611-20	\$7.70	4 Solid (.391")	10 Solid (.250")	.50	3
1611-30	9.70	1 Solid (.500")	6 Solid (.313")	.56	3 $\frac{1}{4}$
1611-40	15.30	2/0 Strd. (.672")	1 Solid (.500")	.75	7 $\frac{1}{4}$
1611-50	15.30	4/0 Strd. (.860")	2/0 Solid (.672")	.94	7 $\frac{1}{4}$

No. 1611 Series can be furnished with bronze lined jaws to special order. Order as 1611-20B, 1611-30B, etc.

### Klein's Chicago Grips

#### For Aluminum Cable Steel Reinforced



Main body piece and lever are forged steel. Draw parts are wrought steel. Gripping jaws are machined smooth.

Rivets are machine turned. Weight, 7 $\frac{1}{2}$  pounds.

No.	Each	For Cable	Approx. Maximum Safe Opening Load	
			Inches	Lb.
1626-39	\$20.50	3/0 to 300,000 C.M., A.C.S.R.	.75	3750
1626-39B	26.10	With Bronze Lined Jaws.....	.75	3750
1626-40	20.50	4/0 to 500,000 C.M., A.C.S.R.	.97	3750
1626-40B	26.10	With Bronze Lined Jaws.....	.97	3750
*1626-AB	33.20	With Bronze Lined Jaws, 3/0 to 300,000 C.M., AC.S.R....	.75	8000

\*Furnished to order. Alloy steel, heat treated.

### Klein's Chicago Grips

#### For Hollow Core and Other Large Diameter Conductors



In stock at factory in blank and finished to fit any diameter conductor up to 1 $\frac{1}{2}$  inches. Jaws lipped out to avoid excess weight.

Forged from alloy steel, heat treated, galvanized finish. Bronze lined jaws.

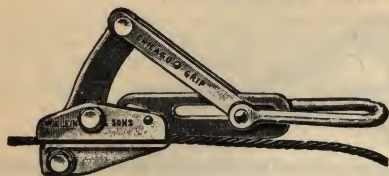
Maximum safe load up to 25,000 pounds.

No.	Each	FOR CABLE			Max. Approx. Open. In.	Wt. Lb.
		Hollow Conductor C.M.	Copper Strand C.M.	A.C.S.R. C.M.		
1628-30B	\$138.00	350,000-1,000,000	550,000-1,250,000	477,000-1,033,500	1.35	28
1628-40B	\$141.20	1,000,000-1,250,000	1,250,000-1,750,000	1,033,500-1,590,000	1.60	32



### Klein Improved Chicago Grips

For Messenger, Guy Strand and Conductors  
Up to ½-Inch Diameter



For use on No. 4 B. & S. solid copper to 4/0 B. & S. 7-strand copper; and No. 6 to 3/0 A.C. S.R.

Forged from alloy steel, heat treated.

The jaws have been lengthened and leverage increased. Maximum opening, .58 inch. Safe load, 8000 pounds. Approximate weight, 6 pounds.

No. 1628-5, without Bronze Lined Jaws.....each \$16.10  
No. 1628-5B, with Bronze Lined Jaws.....each 20.10

### Klein's Chicago Grips

For Messenger and Guy Strand, Heavy Cable, Etc.

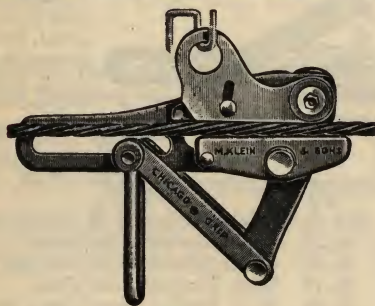


Forged from alloy steel, heat treated. Gripping jaws are machined smooth. Safe load, 15,000 pounds.

No.	Each	FOR CABLE				Max. Open. In.	Approx. Wt. Lb.
		Galv. Steel Strand In.	Copper Strand	A.C.S.R. No.			
1628-16	\$46.00	5/16-5/8	1/0 B. & S.-300,000 C.M.	2-4/0		.69	15½
*1628-16B	53.70		*	*		.69	15½
*1628-16BP	61.30	...	1/0 B. & S.-550,000 C.M.	2-†477,000		1.06	17

\*With bronze lined jaws. †C. M.

### Klein's Hot Line Chicago Grips



Designed especially for use on hot line work. An eye integral with safety latch provides ready means for placement with hot line stick.

Forged from alloy steel, heat treated, galvanized finish. Bronze-lined jaws.

Safe load 1628-3BH up to 4,000 pounds; 1628-5BH, 8,000 pounds.

No.	Each	For B. & S. Wire	Max. Open. In.	Approx. Wt. Lb.
1628-3BH	\$14.70	1/0 Strand to 10 Solid	.44	3
1628-5BH	25.30	4/0 Strand to 4 Solid	.58	6

### Klein's Chicago Grips With Bronze Lined Jaws

Construction engineers are demanding grips that will not slip under heavy loads and which will not damage the conductor or strand. These requirements are met by welding a lining of bronze into the jaws of standard Chicago Grips, indicated by "B" following catalog number.

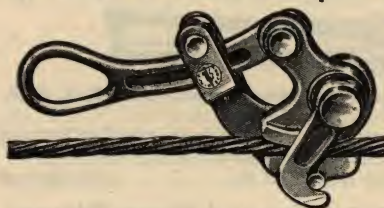
### Klein Haven's Steel Grips



All parts are solid steel drop forgings, heat treated. Eye is pear shaped, and a roller fitted to body yoke makes motion free and allows load to come on smoothly. Instantaneous hold, yet a shake on tackle rope releases grip. Will not slip due to hand cut serration in face of eccentric. Galvanized finish.

No.	Each	1604-10	1604-20
No. 4 B. & S.	\$4.80		7.50
Approx. Maximum Opening... in.	1 3/4 (.24)		1 7/8 (.53)
Approx. Minimum Opening... in.	1 1/8 (.06)		1 3/4 (.14)
Width of Eye... inches	7/8		1 1/8
Weight per Dozen... pounds	12		28 1/2

### No. 1625-20 Klein's Improved Haven's Grips



For wires 3/4 inch to No. 2 B. & S. For use on solid or strand wires. Swing latch engages stud on lower jaw, preventing any distortion of body or cross bolt under load. For use on trolley wire; is weatherproof. Can be readily adapted, at slight extra cost, for hot line work on weatherproof (insulated) conductors. Approximate maximum opening, 2 1/2 inch (.78); approximate minimum opening, 1 1/2 inch (.22). Parts are alloy steel drop forgings properly heat treated. Swing latch holds tool on line in position for pull. Eye is pear shaped 1 1/4 inch wide. Hand cut serration in face of eccentric assures a hold that cannot slip. Galvanized finish.

No. 1625-20, Weight per Dozen, 45 Pounds...each \$16.10

### No. 1700-30 Klein's Chicago Linemen's Tools



This tool is a combination of No. 1613-30 Chicago Grip and No. 1702-20 Howes Wire Tool. It is largely used by telephone companies.

Swivel hook, main body piece and lever of grip are forged steel. Draw parts are wrought steel gripping. Jaws are machined smooth. Rivets machine turned.

For No. 6 wire and smaller down to No. 13. Other sizes of grips can be furnished in this combination to order only.

Weight, 4 pounds.

No. 1700-30.....each \$16.80  
Strap for No. 1700-30, 1 1/4 In. x 7 Ft.....each 4.90

### No. 1702-20 Klein's Howes Wire Tools



The strap is harness leather 1 1/4 inches wide and 7 feet long. At one end a forged steel swivel hook is provided with opening to permit anchoring round insulator pin. The forward end has a locking device to hold the load at any distance and is so arranged that a wire grip can be readily attached.

The metal parts are galvanized.

Weight per set, 2 1/2 pounds.

No. 1702-20.....each \$12.30  
Extra Strap, 1 1/4 Inches x 7 Feet.....each 4.90



## No. 1802 Klein's Heavy Block Tackles

### Drop Forged Hooks and Eye



Consist of two special double sheave blocks. Spring guarded snap hooks do away with taping. Pulleys are bronze bushed and self lubricating. Furnished with 30 feet best quality Manila rope, 4 strand.

No. ....	1802-40	1802-50	1802-60
Each .....	\$30.50	33.70	35.00
Size Rope.....inches	1½	5⁄8	¾
Weight Each.....pounds	15½	18	19

## No. 1803 Klein's Hand Lines



Best quality manila rope which will not twist. Spliced to eye of snap hook with galvanized steel thimble. Snap hook is drop forged with round eye, opens to ¾ inch.

Complete with ¾-inch, 4-strand manila rope and No. 443-A snap.

No. 1803-60, With 75-Foot Rope, Weight Each, 3½ Pounds.....	each \$9.20
No. 1803-120, With 120-Foot Rope, Weight Each, 5¼ Pounds.....	each 12.40

## No. 1802-30 Klein Self-Locking Block Tackles



Consists of light steel galvanized shell block, fitted with a snubbing hook to lock load in any position. Block is arranged with spring guard snap hooks.

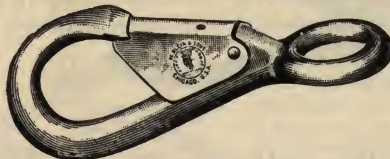
When pulling up wire to make a splice it may be used with two grips attached to the snaps, or with one grip and hook No. 258 to anchor to an insulator pin or other convenient anchorage. Hook is specially shaped to fit under double petticoat insulator on cross arm.

Furnished with 25 feet of ¾-inch, 4-strand manila rope and detachable anchor hook. Shipped unassembled

Weight each, 3 pounds.

No. 1802-30.....each \$10.20

## No. 443-A Klein's Snaps For Hand Lines and Light Hoists



Can be used on all light hoisting, for roofers, etc. Drop forged with galvanized finish. Hook and eye are integral drop forging. Duck bill nose closes around latch.

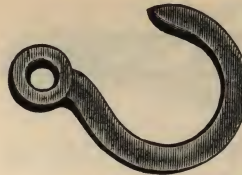
Will carry loads up to 2000 pounds. When fitted to a 4-inch tackle block, it provides an ideal means for connecting with come-along; no taping is necessary.

Opening will take up to ¾ inch. Eye, 1¼ inches. Length overall, 5½ inches.

Weight per dozen, 6½ pounds.

No. 443-A.....each \$2.90

## No. 258 Klein's Anchor Hooks for Tackles



Solid steel drop forging. Overall length, 5½ inches x 3¼ inches across the hook. Size opening, 2 inches; inside diameter of eye, 5⁄8-inch.

Galvanized finish.

Weight per dozen, 4 pounds.

No. 258.....each \$1.70

## No. 455 Klein Heavy Duty Utility Snap Hooks



Will not come loose on a slacked line.

Made of drop forged steel and will carry a working load of 8000 pounds with an adequate safety factor.

May be used on any conventional steel block 4 inches or smaller, or on pulling tackle or snatch blocks by simply replacing the open hook with the Klein snap hook.

Length, 4½ inches.

Weight, 1 pound.

No. 455.....each \$4.00

## No. 324 Simplex Aerial Cable and Wire Tensioning Jacks

Capacity, 2 Tons



Sufficiently powerful to easily pull overhead and underground cables and take up slack in trolley, guy and transport wires.

The speed trigger permits instant slack take up at any point when the jack is not under load. Steel lever furnished with safety spring clip that prevents it from falling.

Easy to set up because of its non-flexible rack bar. Exerts a direct line pull.

For tensioning bare wire, use two bare wire grips and two wire slings. When used for splicing overhead cable, special equipment consisting of two double eye split cable grips, two 3-bolt clamps and two wire slings, are required.

No. ....	324
Each .....	\$32.00
Capacity.....tons	2
Travel.....inches	20¼
Weight.....pounds	13

## No. 869 Diamond Slack Pullers

Sufficient slack can be temporarily taken up in messenger strand for making splices or repairs in aerial cable.

Steel rollers in each end of tool for support on messenger strand. Lifting screw is equipped with a removable grooved roller. Tension is applied by tightening standard nut on upper end.

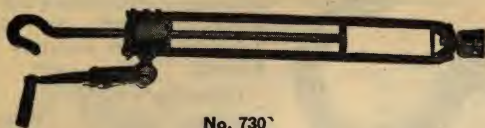
Weight, 10 pounds.



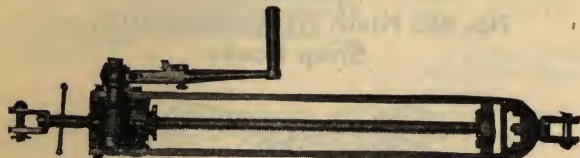
No. 869 Black Finish.....each \$15.00



## Matthews Quick Release Slack Pullers



No. 730



No. 732

Enables one man to do the work of four when taking the slack out of guy strand, messenger wire or changing strain insulators, or for splicing trolley wire, telephone or power cable under tension; also used for pulling back underground cable. Takes the place of block and tackle. One man can easily pull 3000 pounds with the No. 730, and 6000 pounds with the Nos. 731 or 732. No slack is lost in dead ending as strain is held to the exact point pulled.

With the new quick release feature, when the entire take-up has been used, the wire is temporarily dead ended and the lock released. This permits the slack puller to be immediately extended to its maximum or any intervening length.

No.	Description	Ship. Wt. Lb.	Each
730	Maximum Take-Up, 19 Inches.....	17	\$56.00
731	Same as No. 730, Except That Clevis is Substituted for Hook.....	17	60.00
732	Same as No. 731, Except That it Also Has Quick Take-Up Feature.....	17	66.00

The 730 and 731 do not have the quick take-up feature.

## No. 765 Greenlee Cable Pullers



Cable Puller Set up for Pulling into a Box from a Vertical Section of Conduit

Cable Puller Set up for Pulling from the End of a Horizontal Section of Conduit

Machine will exert a maximum pull of 7500 pounds. Has two speeds. Dog on back gear prevents unwinding of cable. Shaft extends from both sides of machine for one or two operators. Two cranks supplied, but ratchet wrenches can be used. Electric power unit can be used for driving.

The 6½-inch diameter tension drum clamps to extension on roller bracket where it can be swiveled in complete circle. Cut steel gears. Cast parts are of semi-steel. Base is provided on drum for bolting. Roller bracket has two roller positions. Roller has 5-inch diameter and 3-inch width to clear basket connection and electric cable.

Frame is formed from two 36-inch sections of channel iron.

In exposed work, clamping is done directly on to conduit through which cable is to be pulled. Clamping device consists of a bracket on frame and two lengths of pipe wrench chain. Rated for conduit from 2 to 5 inches.

For pulling cable into concealed conduit, a flexible elbow can be furnished. This attachment consists of a flexible elbow, 4-inch master sleeve, bushings for 2, 2½, 3 and 3½-inch conduit, two unions for small bushings to permit using them in close quarters and a 4 to 2-inch reducer.

A ¾-inch 6-19 strand cable is recommended.

No. 765 Cable Puller with 2 Cranks, without Cable,	
Wt., 225 Lb.....	each \$160.00
Flexible Elbow Attachment Comp., Wt., 86 Lb. ea.	40.00

## No. 201 Klein Side Cutting Pliers



For use on bare and insulated wire. Curved handles. Powerful leverage and keen cutting knives.

No.	201-5	201-6	201-7	201-8	201-9
No. 201.....each	\$5.50	6.00	6.50	7.50	8.50
Size.....inches	5	6	7	8	9

## No. 201 Klein Side Cutting Pliers

N. E. Type



Nose and all edges rounded and shoulder of head removed.

No.	201-5NE	201-6NE	201-7NE	201-8NE	201-9NE
Each.....	\$5.50	6.00	6.50	7.50	8.50
Size.....in.	5	6	7	8	9
Wt., Doz.lb.	3	5¼	7¼	11¼	13½

No. 212 Klein Side Cutting Pliers  
With Sleeve Joint Twisters

For use on bare and insulated wire, with sleeve joint twister.

No.	212-6	212-7	212-8
Each.....	\$6.50	7.50	8.50
Size.....inches	6	7	8

## No. 212 N. E. Klein's Side Cutting Pliers

N. E. Type with Sleeve-Joint Twister



For use on bare and insulated wire by linemen, electricians and mechanics. Opening provided

for twisting double tube sleeve joints.

Polished head, handle temper blued.

Packed 6 in a standard package.

No.	212-6N.E.	212-7N.E.	212-8N.E.
Each.....	\$6.50	7.50	8.50
Size.....in.	6	7	8
Sleeve Opening, N.B.S.	14 & 17	14 & 17	12
Sleeve Opening, B.&S.	12(.045")	12(.045")	10(.104")
Weight per Dozen..lb.	5¼	7¼	11¼

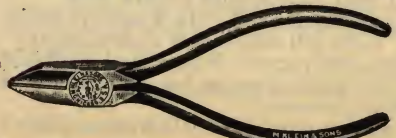
## No. 202 Klein Oblique Cutting Pliers



Lap joint type. Cuts close. The narrow head permits its use in confined places.

No.	Each	Size In.
202-5	\$5.00	5
202-6	5.10	6

## No. 202 Klein's Narrow Nosed Oblique Pliers



For telephone or radio work.

Has narrow hinge and pointed nose, polished head and tempered blued handles.

No. 202-5A, 5-Inch Size; Wt. per Doz., 4 Lb.....each	\$5.00
No. 202-6A, 6-Inch Size; Wt. per Doz., 4¼ Lb.....each	5.10



## No. 245 Klein's Oblique Cutting Pliers



Can easily be carried in vest pocket.

For electricians, telephone men and switchboard builders.

No. 245-5, 5-Inch, Weight per Doz., 3 Lbs....each \$5.00

## No. 245-5-W Klein's Oblique Pliers



For removing acetate cellulose insulation from .050 and .058 wires.

Has two W shaped notches at back of cutting knives.

Length, 5 inches.

No. 245-5-W, Weight per Dozen, 3 Pounds.....each \$5.50

## No. 240-S Klein's Oblique Cutting Pliers

With Wire Stripping Notch and Sleeve Openings



For the use of electricians, telephone men, and switchboard builders. Stripping notch provides a means for crimping on .032-.025-inch single tube

copper sleeves often used in telephone work for splicing .032-inch bridle wire and .025-inch inside wire.

Size, 5 inches. Polished head, handle temper blued.

Weight per dozen, 3 $\frac{3}{4}$  pounds.

No. 240-5-S.....each \$5.40

## No. 240 Klein's Oblique Cutting Pliers

With Wire Stripping Notch



Has a notch in the cutting knives for stripping small wires. Notch is placed  $\frac{3}{16}$  inch from hinge and has diameter of .052 inch. Can be used for crimping single tube copper sleeves.

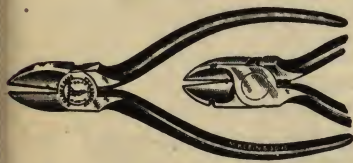
Polished head and temper blued handles.

Packed 6 in box.

No.....	240-5	240-6
Each.....	\$5.40	5.50
Size.....	5	6
Weight per Dozen.....	pounds 3 $\frac{3}{4}$	4

## No. 202-SW Klein's Oblique Cutting Pliers

With W Stripping Notches, Sleeve Openings and Skinning Hole—Bell System Type



An all-purpose cutting tool for telephone installation and maintenance work. The W notches will slit acetate cellulose and other insulations from wires up to .058-inch o.d. A stripping hole .052-inch diameter is provided in blades which also provides means to crimp on .032 and .025 single tube copper sleeves. Sleeve openings in handles.

Size, 5 $\frac{1}{2}$  inches. Polished head, handle temper blued.

Weight per dozen, 3 $\frac{3}{4}$  pounds.

No. 202-5SW.....each \$5.80

## No. 242-6 Klein Oblique Cutting Pliers



Heavy Duty Pattern

For use where it is not necessary to reach into confined spaces.

Polished head, handles blued.

Size, 6 inches, Packed 6 in box.

No. 242-6, Weight per Dozen, 4 $\frac{1}{4}$  Pounds.....each \$5.50

## No. 220-7 Klein's Oblique Cutting Pliers

With Handform Handles



A 7-inch plier made especially for automotive mechanics.

Useful for pulling cotten pins, for

choke wires, etc.

Hammer forged from high grade tool steel of special analysis. Knives are close cutting and carefully matched for their full length.

Individually fitted, tempered, adjusted and tested.

Handform handles provide full leverage and comfort for continual use.

Polished head, handle temper blued.

Packed 6 in a standard package.

Weight per dozen, 7 pounds.

No. 220-7.....each \$6.50

## No. 301 Klein's Long Nose Pliers

Without Cutters



For stripping insulated wire ends. Point,  $\frac{3}{16}$  inch round.

Extra long nose, 2 $\frac{3}{4}$  in.

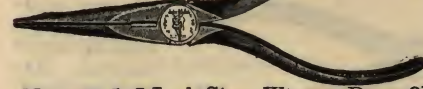
No. 301-5, 5-Inch Size; Wt. per Doz., 3 $\frac{3}{4}$  Lb....each \$4.80

No. 301-6, 6-Inch Size; Wt. per Doz., 3 $\frac{3}{4}$  Lb....each 4.90

\*No. 301-7, 7-Inch Size; Wt. per Doz., 4 $\frac{1}{4}$  Lb....each 5.00

## No. 203 Klein Long Nose Side Cutting Pliers

With Cutting Knives



For stripping insulated wire ends. Point,  $\frac{3}{16}$  inch round.

\*Extra long nose, 2 $\frac{3}{4}$  in.

No. 203-5, 5-Inch Size; Wt. per Doz., 3 $\frac{3}{4}$  Lb....each \$4.80

No. 203-6, 6-Inch Size; Wt. per Doz., 3 $\frac{3}{4}$  Lb....each 4.90

\*No. 203-7, 7-Inch Size; Wt. per Doz., 4 $\frac{1}{4}$  Lb....each 5.00

## No. 303-6 Klein's Long Needle Nose Pliers



Long nose permits use in confined spaces. Has polished head and handles temper blued.

Weight per dozen, 3 $\frac{3}{4}$  pounds.

No. 303-6, Length, 6 Inches.....each \$4.90

## No. 317 Klein's Chain Nose Pliers

Without Cutters



For general use.

Size, 6 inches.

Hammer forged from high grade tool steel. Polished head, handles temper blued.

No. 317-6, Weight per Dozen, 3 $\frac{1}{2}$  Pounds.....each \$4.90



### No. 217 Klein's Chain Nose Pliers Side Cutting



With side cutting knives. Size, 6 in. Polished head, handles temper blued.

Weight per dozen, 3½ pounds.  
No. 217-6 ea. \$5.50

### No. 313 Klein's Heat-Coil Pliers



Particularly adapted for the removing of heat coils from switchboards and telephone terminals, as the points of the

nose are shaped to fit the coils. This tool is also serviceable in removing caps from batteries or from binding posts, as well as holding any cylindrical object.

Size, 6 inches.

Polished head, handles temper blued.

Packed 6 in a standard package.

Weight per dozen, 3¾ pounds.

No. 313-6.....each \$5.00

### No. 305-6 Klein's Long Flat Nose Pliers



Has long wide flat nose. Inside of jaws left smooth if desired. Has polished head and

handles temper blued. Weight per dozen, 3½ pounds.

No. 305-6, Length, 6 Inches.....each \$4.70

### No. 206-6 Klein Side Cutting Pliers Long Flat Nose



Long wide cutting knives. Smooth jaws if desired. Has polished head, handles temper

pered blued. Length, 6 inches. Packed 6 in a box.

No. 206-6, Weight per Dozen, 3½ Pounds.....each \$5.50

### Klein's Long Flat Nose Spring Adjusting Pliers



Hollow ground on outside of jaws to reach between and grasp springs easily.

No. 311-5½, 5½ Inch, Weight per Doz., ¾ Lbs. each \$4.90

### No. 304-6 Klein Long Duck Bill Pliers



For general use. Jaws are wider and heavier than those of flat nose pliers.

Has polished head and handles temper blued.

Length, 6 inches. Weight per dozen, 3½ pounds.

No. 304-6.....each \$4.90

### No. 205-6 Long Duck Bill Side Cutting Pliers

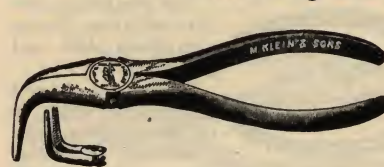


General use. Jaws are wider and heavier than those of flat nose plier. Has polished head and handles

temper blued. Weight per dozen, 3 pounds.

No. 205-6, Length, 6 inches.....each \$5.50

### No. 302-6 Klein Long Curved Nose Pliers



Angle gives full clearance. Length, 6 inches.

Weight per dozen, 3 pounds.

No. 302-6.....each \$5.50

### No. 316-S Klein's Long Nose Sleeve Pliers Bell System Type



Sleeve openings permit twisting No. 17 N.B.S. and smaller copper sleeves. Point, ½ inch round.

No. 316-S, 6-Inch Size; Wt. per Doz., ¾ Lb....each \$4.90

### No. 301-C Klein's Long Nose Cord Crimping Pliers



For telephone switchboard work; oval groove for crimping telephone cords. Point, ½ inch round.

No. 301-C, 6-Inch Size; Wt. per Doz., ¾ Lb....each \$4.90

### No. 039 Klein's Cord Tip Closing Pliers



The jaws of this tool are designed to permit its use as a hand press for closing cord tips such as W.E. 101 and 102. The circular opening in the jaws is correctly

sized to insure a perfect connection when the closure is completed.

Size, 5 inches.

Polished head, handles temper blued.

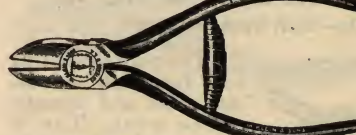
Packed 6 in a standard package.

Weight per dozen, 3 pounds.

No. 039.....each \$6.00

### No. 202-5-AV Klein's Oblique Cutting Pliers

#### Narrow Head

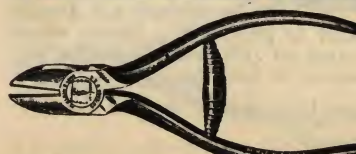


For heavy cutting.

Hammer forged from high grade tool steel. With volute spring for bench work.

No. 202-5-AV, 5½-Inch, Weight per Doz., 4 Lb. each \$6.50

### No. 245-5-V Klein's Oblique Cutting Pliers



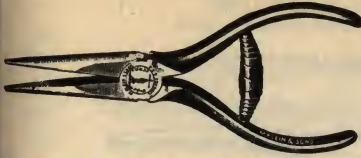
For electricians, telephone men, etc.

Hammer forged from high grade tool steel. With volute spring for bench work.

No. 245-5-V, 5-inch, Weight per Doz., 3 Lb....each \$6.50



## No. 301-5-V Klein's Long Nose Pliers

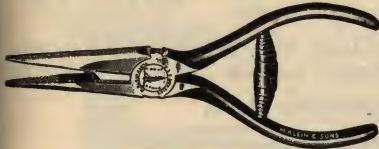


### Without Cutting Knives

Hammer forged from high grade tool steel. With volute spring for bench work.

No. 301-5-V, 5-Inch, Weight per Doz., 3½ Lb. . . each \$6.50

## No. 203-5-V Klein's Long Nose Cutting Pliers



For production bench work where a combination of long jaws with cutting knives is required. Fitted with volute spring.

No. 203-5-V, Weight per Dozen, 2¾ Pounds . . . each \$7.50

## No. 1550-2 Klein's Xela Electricians' Knives



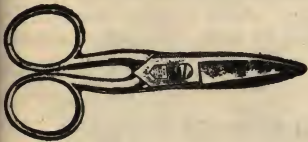
A handy combination for the electrician, combining an emergency screwdriver, a knife blade for cutting or stripping wire; safely locked so that it cannot close during use.

Has a well-tempered cutlery steel blade, a strong joint, a solid well-proportioned hand fitting cocobola handle.

Screwdriver blade is locked when open; to unlock a slight side pressure of the thumb releases the lock and permits the blade to be closed readily.

No. 1550-2, Double Blade. . . . . each \$3.20

## Xela Electrician's Scissors



Made of high grade steel properly tempered.

Has screw hinge.

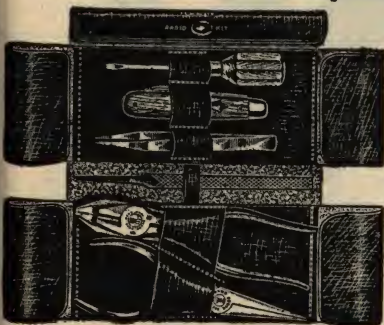
Nickel plated finish.

Size, 5 in.

Weight per dozen, 2 pounds.

No. 2100-5. . . . . each \$3.30

## No. 1305-2 Klein's Inspectors' Tool Kits



Solid black leather folding case strongly stitched, reinforced back. Fitted with one each of the following tools: No. 201-6 side-cutting plier; No. 301-5 long nose plier; No. 1550-2 Xela electricians' knife; 1 pair electricians' tweezers; 1 special file; 1 special screwdriver.

A handy assortment to fit the pocket. Weight, 1½ pounds.

No. 1305-2. . . . . each \$18.00

## No. 5139 Klein's Canvas Tool-Packs

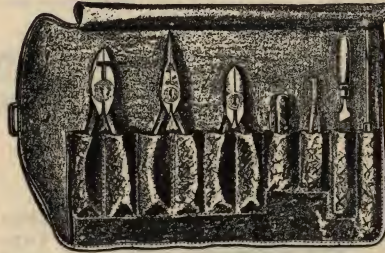


Made of sturdy, brown canvas. A heavy zipper instantly closes or opens the full length mouth. Especially useful for a selection of frequently used small tools.

Weight per dozen, 3 pounds.

No. 5139, Size, 6x12 Inches. . . . . each \$1.70

## Klein Tool-Kits



Designed for mechanics, service men and electricians.

Contains long nose plier, special side cutting plier, diagonal cutting plier, electrician's knife, a pair of electrician's tempered tweezers,

4½-inch file and a screw driver with insulated handle. All contained in a Keratol roll fastened with a strong strap and buckle.

No. 1305-33A. . . . . each \$23.00

## No. 5116 Klein's Detachable Plier Holsters



Made of heavy harness leather with loop to slip over belt.

Carries 7, 8 or 9-inch side cutting pliers.

Mouth of pocket is framed to hold open position permanently.

Length, 10 inches.

Weight per dozen, 6 pounds.

Price, No. 5116. . . . . each \$3.50

## Leather Plier Pockets



No. 5107



No. 5112

Made of good quality leather. Has slits for belt.

No. 5107, Weight per Dozen, 2½ Pounds. . . . . each \$2.00

No. 5112, Weight per Dozen, 2½ Pounds. . . . . each 2.80

## Klein Combination Tool Pockets



No. 5118-K

Made of heavy harness leather. Opening at bottom prevents accumulation of dirt or water. Top flap of double thickness leather is for riveting to belt.

Space provided for pliers fits 6, 7, 8 and 9-inch side cutting pliers.

### No. 5118-K For Pliers and Knife

Weight per dozen, 7½ pounds.

No. 5118-K, Size, 4¾x8 In. . . each \$3.30

### No. 5118-S For Pliers and Screwdriver

Weight per dozen, 5½ pounds.

No. 5118-S, Size, 4x8 In. . . . . each \$2.80

### No. 5118-R For Pliers and 6-Foot Rule

Weight per dozen, 7½ pounds.

No. 5118-R, Size, 4¾x8 Inches. . . . . each \$3.30





### No. 5111 Klein's Hip Pocket Tool Cases

Suitable for carrying pliers or other tools in hip pocket.

Prevents cutting of clothes, or possible injury to the person.

Made of black leather, 5x7 inches.

Weight per dozen, 5½ pounds.

No. 5111.....each \$2.80

### Klein's Rubber Glove Pouches



Scotch chrome leather pocket for carrying rubber gloves. Comes equipped with snap and D ring, ready to attach to body belt.

No.....	5120-9	5120-15
Each.....	\$5.00	6.80
Size.....in.	7½x9	7½x15
Weight per Doz.....lb.	4½	7

### No. 1515-1 Klein's Cable Sheath Splitting Knives



Cutlery steel blade, oil tempered. Riveted, harness leather handle.

Weight per dozen, 12 pounds.

No. 1515-1.....each \$4.90

### No. 1560-3 Klein Linemen's Skinning Knives



In constructing this knife, the shape of the blade has been considered to make it a safety tool.

Half hard rubber handle is molded on securely and provides adequate insulation and a positive grip.

Hole in handle is through the solid rubber.

Length of blade, 3 inches; overall length, 8 inches.

Weight per dozen, 4¼ pounds.

No. 1560-3.....each \$3.50

### No. 5163 Klein Skinning Knife Sheaths For No. 1560-3 Knife

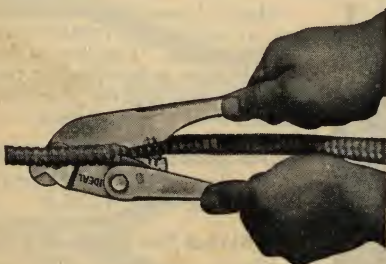


Can be riveted to belt or carried in hip pocket. Opening at bottom to prevent collection of dirt and permit escape of water.

Size, 3x9 inches. Weight per dozen, 4 pounds.

No. 5163.....each \$2.20

### No. 45-079 BX Armor Cutters



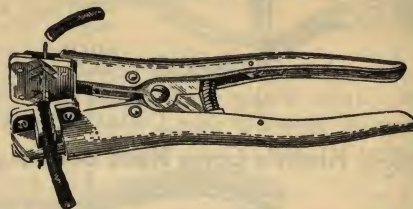
A lightweight pocket tool that cuts armor perfectly in one operation. For use on either two or three-wire, No. 14 or No. 12 cable. Eliminates nicked wires or shorts.

No. 45-079.....each \$3.83

### Ideal Wire Strippers

For Solid or Stranded Wire

#### Standard Model



Cutting edges are shielded. Blind centers of the V-notches on blades prevent cutting or scarring of wire.

#### Automatic Model



Lever stops return of arms until wire is removed after stripping, then they are quickly snapped back to normal.

Lever will not operate unless wire with insulation .050 inch or larger is inserted between grippers. When no wire is inserted, lower gripper moves upward when handles are squeezed, pushing trigger and lever up and out of action.

No.	Standard Each	Automatic Each	Extra Blades per Set	Strips Wire Gage	Shipping Weight Pounds
Universal	....	\$5.65	\$1.18	10-22	1½
0	\$4.71	5.65	1.18	20-30	1½
01	4.71	5.65	1.18	16-22	1½
1	4.71	5.65	1.18	12-18	1½
2	4.71	5.65	1.18	10-16	1½
3	4.71	5.65	1.18	8-14	1½



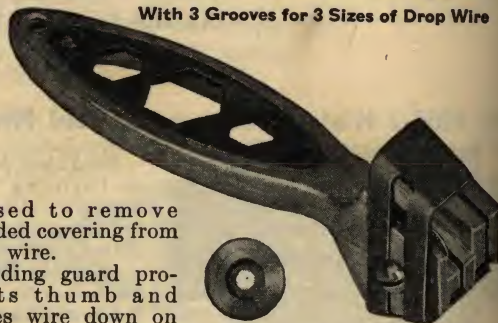
### No. 45-018 Ideal Cable Rippers

For use on non-metallic sheathed duplex cable or lead covered cable. Ripper is squeezed onto the cable and pulled, ripping the cable with one simple operation. Can also be used for ripping the outer sheathing of other cords, lead cables, etc., where outside diameter is not greater than 5/8 inch. Weight, 2 ounces.

No. 45-018.....each \$3.35

### No. 779 Diamond B Braid Stripper

With 3 Grooves for 3 Sizes of Drop Wire



Used to remove braided covering from drop wire.

Sliding guard protects thumb and forces wire down on cutting blade. Blade can be rotated to new position when used section becomes dull.

Handle is equipped with steel wrench plate with hexagonal openings of 3/8, 1/6, and 5/8 inches for bridging connectors, nuts or heads.

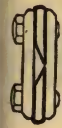
Made of die-cast aluminum with natural finish.

Packed 12 to a carton. Weight, 1¼-pound.

No.	Per Dozen	Width, In.	Depth of Cut, In.
779	\$33.00	.270	.060
		.330	.080
		.375	.110



## Porter Rigid and Swivel Type Clipper Cut Bolt Clippers



### Rigid Type

Ball and socket joints and positioning spring permit swivel type flexible bolt clipper to cut at any angle. The cutting jaws of rigid type are firmly fixed in line with the handles and are beveled almost entirely from one side for close cutting, such as clipping of bolts, and are generally specified where a tool is required for all around work in softer metals.

### Swivel Type

Swivel type is recommended for the same close cutting requirements, but also has the added utility of the 180° arc wrist action.

### Rigid Type

No.	Complete Tool Each	*Complete Cutter-heads Each	*Jaws per Pair	Approx. Length of Tool Inches	Approx. Cap., In. Annealed Bolts in Thrd.	Approx. Soft Rods	Approx. Wt. Lb.
14-OK	\$7.50	\$4.70	\$4.00	14	1/4	3/16	2 1/4
0-NE	8.50	5.20	4.40	18	5/16	1/4	3 1/4
1-NE	10.25	6.20	5.20	24	3/8	5/16	5 1/4
2-NE	12.75	7.60	6.70	30	1/2	3/8	8 1/2
3-NE	16.75	9.70	8.50	36	5/8	1/2	12 1/2
4-AR	22.50	11.90	10.10	42	3/4	5/8	17 3/4

### Swivel Type

No.	Complete Tool Each	*Complete Cutter-heads Each	*Jaws per Pair	Approx. Length of Tool Inches	Approx. Cap., In. Annealed Bolts in Thrd.	Approx. Soft Rods	Approx. Wt. Lb.
0-SH	\$12.25	\$5.20	\$4.40	19	5/16	1/4	4
1-SH	14.00	6.20	5.20	25	3/8	5/16	6 1/4
2-SH	17.00	7.60	6.70	31	1/2	3/8	9 3/4

\*Same jaws and heads can be used for either rigid or swivel.

## Porter Rigid and Swivel Type Center Cut Bolt Clippers



### Rigid Type

Ball and socket joints and positioning spring permit swivel type flexible bolt clipper to cut at any angle. Cutting jaws of rigid type firmly fixed in line with handles and are beveled equally, bringing cutting edge at center of jaw. Recommended where close cutting is not a requirement. Cuts materials up to 300 Brinell hardness.

### Swivel Type

Swivel type used for same type of work. Permits ready application of full operating pressure in close quarters. Recommended for building construction.

Specify center cut round edge type for cutting reinforcing rods and for use in steel and wire mills.

### Rigid Type

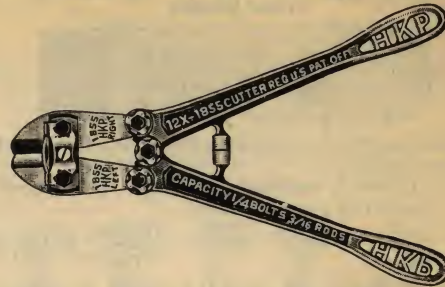
No.	Complete Tool Each	*Complete Cutter-heads Each	*Jaws per Pair	Approx. Lgh. of Tool In.	Approx. Cap., In. Annealed Bolts in Thrd.	Approx. Soft Rods	Approx. Wt. Lb.
14-OK-CC	\$7.50	\$4.70	\$4.00	14	1/4	3/16	2 1/4
0-NE-CC	8.50	5.20	4.40	18	5/16	1/4	3 1/4
1-NE-CC	10.25	6.20	5.20	24	3/8	5/16	5 1/4
2-NE-CC	12.75	7.60	6.70	30	1/2	3/8	8 1/2
3-NE-CC	16.75	9.70	8.50	36	5/8	1/2	12 1/2
4-AR-CC	22.50	11.90	10.10	42	3/4	5/8	17 3/4

### Swivel Type

No.	Complete Tool Each	*Complete Cutter-heads Each	*Jaws per Pair	Approx. Lgh. of Tool In.	Approx. Cap., In. Annealed Bolts in Thrd.	Approx. Soft Rods	Approx. Wt. Lb.
0-SH-CC	\$12.25	\$5.20	\$4.40	19	5/16	1/4	4
1-SH-CC	14.00	6.20	5.20	25	3/8	5/16	6 1/4
2-SH-CC	17.00	7.60	6.70	31	1/2	3/8	9 3/4

\*Same jaws and heads can be used for either rigid or swivel.

## No. 12 Porter Bolt Clippers



Capacity up to 1/4-in. annealed bolts in the thread, 3/16-in. soft rods. Stops have rubber buffers. Length, 12 inches.

No. 12, Approx. Weight, 1 1/2 Pounds..... each \$4.75  
Jaws..... per pair 3.20  
Cutter-Head..... each 3.80

## Porter Electric Wire Cutters

### Not Insulated

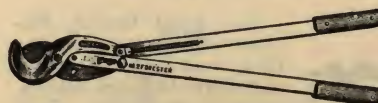


Jaws are made of steel forgings. Handles are made of malleable iron.

With wide jaw opening for heavily insulated wire on lines which are dead.

No.	1X	2X	3X
Complete Tool..... each	\$8.80	\$10.90	\$14.10
Cutterhead, Complete..... each	5.40	6.70	8.20
Jaws..... per pair	4.50	5.70	7.10
Approx. Length..... inches	25	31	36
Jaw Opening..... inches	3/4	1 1/8	1 1/4
Capacity Solid Copper Wire..... in.	3/8	1/2	5/8
Approx. Weight..... pounds	5 1/4	8 1/2	12 1/2

## Porter Heavy Duty Shear Cable Cutters



For insulated cable. Two sharp edges avoid mashing or damaging cable strands.

Made in two types: FT, for regular cable, telephone office inside cable, fine stranded flexible conductors, not armored, and FH, for armored cable, stranded copper conductors No. 12, 3-wire BX, also for up to 500,000 cm. There are so many types of cable that it is advisable to submit samples to be cut.

No.	2	3
Complete..... each	\$9.75	\$11.25
Cutterhead, Complete..... each	7.20	8.60
Straight Blades..... each	3.70	3.90
Curved Blades..... each	3.90	4.90
Approximate Length..... inches	27	34
Capacity Insulated Cable..... inches	1 3/8	1 3/4
Approximate Weight..... pounds	4 3/8	7 1/4

## Lenox Hackmaster High Speed Hacksaw Blades

### Unbreakable Hand Blades



A saw made of high speed steel that has the back of the blade annealed so as to give it flexibility, and the tooth edge hardened for durability. Has all the cutting qualities of the standard high speed steel blade.

Inasmuch as this is a truly flexible blade, it will withstand hard usage, even misuse, without breaking. Sharp twists and kinks, which are the main reason for saw breakage, are absorbed without damaging this blade.

Packed 1/2 gross in a box.

			NUMBER				Wt., Lb.		
Lgth.	Width	THICKNESS	No. OF TEETH				per	Per	
In.	In.	Gage	In.	14	18	24	32	Gross	Gross
10	1/2	23	.025	.....	018MF	024MF	032MF	5	\$46.00
12	1/2	23	.025	214MF	218MF	224MF	232MF	6 1/2	55.20



### Capewell Technite Hacksaw Blades Hand Blades

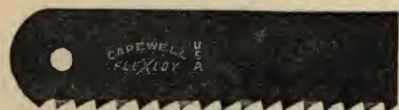


Recommended for cutting high speed, stainless and hard-to-cut alloy steels.

Made of Class A molybdenum high speed steel, heat treated. Packed  $\frac{1}{2}$  gross in a box.

No.	Per Gross	Length Inches	Width Inches	Thickness Inches	Teeth per Inch	Wt. Lb. per Gross
1018T	\$40.00	10	$\frac{1}{2}$	.025	18	5
1024T	40.00	10	$\frac{1}{2}$	.025	24	5
1032T	40.00	10	$\frac{1}{2}$	.025	32	5
1214T	48.00	12	$\frac{1}{2}$	.025	14	$6\frac{1}{2}$
1218T	48.00	12	$\frac{1}{2}$	.025	18	$6\frac{1}{2}$
1224T	48.00	12	$\frac{1}{2}$	.025	24	$6\frac{1}{2}$
1232T	48.00	12	$\frac{1}{2}$	.025	32	$6\frac{1}{2}$

### Capewell Flexloy Hacksaw Blades



For general use by electrical workers, automotive mechanics, steamfitters, and plumbers.

Hard throughout, yet tough and flexible. Teeth will not strip. Unbreakable in a hacksaw frame. Packed  $\frac{1}{2}$  gross in a box.

No.	Per Gross	Length Inches	Width Inches	Thickness Inches	Teeth per Inch	Per Gross
1018C	\$10.00	10	$\frac{1}{2}$	.025	18	$4\frac{3}{4}$
1024C	10.00	10	$\frac{1}{2}$	.025	24	$4\frac{3}{4}$
1032C	10.00	10	$\frac{1}{2}$	.025	32	$4\frac{3}{4}$
1214C	12.00	12	$\frac{1}{2}$	.025	14	$5\frac{3}{4}$
1218C	12.00	12	$\frac{1}{2}$	.025	18	$5\frac{3}{4}$
1224C	12.00	12	$\frac{1}{2}$	.025	24	$5\frac{3}{4}$
1232C	12.00	12	$\frac{1}{2}$	.025	32	$5\frac{3}{4}$

### No. 36-001 Ideal Joist Boring Machines



The Ideal Boring Machine is operated from the floor, and bores holes at any angle through rafters, joists or studdings. Used on new or old floor and ceiling construction.

The bit eats right into the wood with a light pull on the chain. Reversing the pull backs the bit out without bending or breaking knurled collar—no tools required. Bits are solid point type, with special lip construction for fast and easy boring. Available in  $\frac{1}{16}$  and  $\frac{1}{8}$ -inch diameters.

Weight, 17 pounds.

No. 36-001, with 1 Bit.....each \$23.53  
Extra  $\frac{1}{16}$ -Inch Bits No. 36-004 (Quick Cutting) ..ea. 1.18

### No. 16 Greenlee Unispur Electricians' Auger Bits



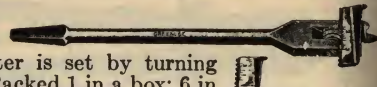
Has twist length of  $5\frac{1}{2}$  inches; overall length without screw point, 10 inches. Has 8-pitch single screw point. Head has single cutter with 1 outlying spur.

Standard package,  $\frac{1}{2}$  dozen in a box.

Size in 16ths In.	Per Dozen	Wt. Lb. per Dozen	Size in 16ths In.	Per Dozen	Wt. Lb. per Dozen	Size in 16ths In.	Per Dozen	Wt. Lb. per Dozen
4	\$11.00	1	9	\$13.20	$2\frac{1}{4}$	14	\$18.15	$4\frac{1}{2}$
5	11.00	$1\frac{1}{4}$	10	13.20	$2\frac{1}{2}$	15	20.90	5
6	11.00	$1\frac{1}{2}$	11	15.40	$3\frac{1}{4}$	16	20.90	$5\frac{1}{4}$
7	12.10	$1\frac{3}{4}$	12	15.40	$3\frac{1}{2}$	18	26.40	$6\frac{3}{4}$
8	12.10	2	13	18.15	$4\frac{1}{4}$	20	30.80	$7\frac{1}{2}$

### Greenlee Setfast Expansive Bits

The cutters and the adjusting barrel are fitted with 8 pitch square thread. Has wide open mouth. The parts are locked by the action of the eccentric pin in the side of the body. Cutter is set by turning adjusting barrel. Packed 1 in a box; 6 in carton.



Price, No. 5 Small Bit, $\frac{5}{8}$ to $1\frac{1}{4}$ Inches.....per dozen	\$33.00
Price, No. 5A Cutter, $\frac{5}{8}$ to $1\frac{1}{8}$ Inches.....per dozen	4.50
Price, No. 5B Cutter, $1\frac{1}{8}$ to $1\frac{3}{4}$ Inches.....per dozen	5.65
Price, Extra Adjusting Barrels.....per dozen	2.25
Price, Extra Eccentric Pins.....per dozen	2.25
Price, No. 6 Large Bit, $\frac{1}{2}$ to 3 Inches.....per dozen	39.00
Price, No. 6A Cutter, $\frac{1}{2}$ to $1\frac{3}{4}$ Inches.....per dozen	7.90
Price, No. 6B Cutter, $1\frac{3}{4}$ to 3 Inches.....per dozen	9.00
Price, No. 6C Cutter, $2\frac{1}{2}$ to 4 Inches.....per dozen	13.50
Price, Extra Adjusting Barrels.....per dozen	2.70
Price, Extra Eccentric Pins.....per dozen	2.70

### Greenlee Bit Extensions



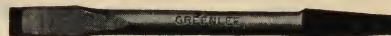
No. 900, is made to drive a bit up to 1-inch diameter but small enough to follow a  $\frac{5}{8}$ -inch bit. This is due to the thin outer shell, which does not drive the bit, the driving coming from the bit chuck within. There are 5 major parts, all exposed surfaces of which are nickel-plated except the square, which is lacquered. The positive lock prevents the loosening of the holding sleeve. This lock consists of a sleeve with a spring tension, which engages the screw sleeve when released, and two  $\frac{1}{8}$ -inch pins prevent it turning.

No. 925. bit extension is similar in design to No. 900 except it is made extra heavy to follow a  $\frac{1}{16}$ -inch auger bit and drive tools up to 2-inch diameter.

Packed 1 in a leatherette case.

Length.....inches	15	18	21	24	30
No. 900.....each	\$2.85	\$2.95	\$3.10	\$3.25	\$2.50
No. 925.....each	3.60	.....	3.80	.....	.....

### No. 723 Greenlee Standard Screwdriver Bits



Size.....inches	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	Ass'd.
Length Over All.....inches	$4\frac{1}{4}$	$4\frac{1}{2}$	5	$5\frac{1}{2}$	.....
No. 723.....per dozen	\$3.60	3.60	3.80	4.30	3.80

### No. 220 Greenlee Short Socket Firmer Chisels

Bevel Edge—Leather Tipped Handle



Size, In.	Per Doz.	Size, In.	Per Doz.	Size, In.	Per Doz.
$\frac{1}{4}$	\$16.80	$\frac{5}{8}$	\$18.60	$1\frac{1}{4}$	\$24.60
$\frac{3}{8}$	16.80	$\frac{3}{4}$	19.20	$1\frac{1}{2}$	26.40
$\frac{1}{2}$	16.80	1	22.20	2	30.00

### No. 8616 Lufkin Flexible Spring Joint Rules



Marked consecutive inches to 16ths, both sides.

Made of hardwood with brass-plated trimmings.

Has concealed joints, 6-inch folds,  $\frac{5}{8}$ -inch wide.

Length, 6 feet. White enameled.

Packed 6 in a box.

Weight per dozen, 3 pounds.

No. 8616.....per dozen \$9.60



## Lufkin Wizard Tape-Rules

Flexible—Rigid



Rule blade is of high quality tempered steel, stiffened by special forming. Blade has nickel-plated surface with dark figures and lines in sharp contrast. It is manually withdrawn and returned. Nickel-plated case.

Zero falls at inside of hook. Accurate butt end measurements can be taken from shoulders of blade. Marked in consecutive inches to 16ths both edges; first 6 inches, upper edge to 32nds. No. 686D marked in feet, 10ths and 100ths of feet upper edge, feet, inches and 16ths on lower edge. Packed 1 in a box, 6 in a carton.

No. 686, 72-Inch, 5/8-Inch Wide.....	each	\$1.25
No. 688, 96-Inch, 5/8-Inch Wide.....	each	1.70
No. 686-D, 6-Foot, 5/8-Inch Wide.....	each	1.60
No. 6810, 120-Inch, 5/8-Inch Wide.....	each	3.20

## Lufkin Leader Chrome Clad Steel Tapes

Accurate steel tape, chrome plated. Markings durable as well as extra legible. Measurements easy to read, even in poor light, markings being jet black on satin chrome-white surface, free of glare. The hard chrome surface resists both rust and wear, is smooth and easy to clean. Thus built up, of metal throughout, this tape will not crack, chip or peel, and is extra strong.

The 3/8-inch tape line is marked in feet, inches and eighths.

Black imitation leather case, metal lined; winding handle opened by push pin.

Packed 1 in a box.



No.	Each	Lgth. Ft.	Wt. Oz.
C250	\$5.50	25	9
C253	6.60	50	15
C255	9.10	75	20
C256	11.20	100	25

## Lufkin Anchor Chrome Clad Steel Tapes

Accurate, high grade steel tape, chrome plated to resist rust. Durable, extra legible markings of jet black on satin chrome-white surface, free of glare. Easy to clean. Tape will not crack, chip or peel. Leather case, metal lined; winding handle opened by push pin.

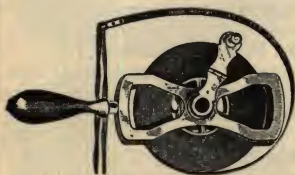
Packed 1 in a box.



3/8 Inch Width					
Ft., In. & 8ths No.	Ft., 10ths & 100ths No.	Each	Lgth. Ft.	Wt. Oz.	
C210	C210D	\$8.40	25	9	
C211	C211D	9.10	33	11	
C213	C213D	10.20	50	15	
C214	C214D	12.90	66	18	
C215	C215D	13.30	75	21	
C216	C216D	17.50	100	26	

Marked in feet, inches and 16ths at 5 per cent extra.

## Michigan Chain Tapes



Especially popular in railroad and highway work. Line is detachable from reel, has heavy brass end clips, and is furnished with a pair of leather thongs.

Markings are on babbitt metal. Marked on one side only, feet only every foot, with end feet in 10ths. Blank space on each end.

Width, 5/16 inch. Approximate thickness, .015 inch. Length, 100 feet.

No. 3100, Tape Complete with Reel.....	each	\$17.60
No. 03100 Line Only, without Reel, with Thongs.....	each	11.60

## Klein's Linemen's Pole Climbers

(Also Called Spurs or Hooks)

Safety is the first and vital point in considering linemen's pole climbers. The lineman going up a pole depends entirely upon his spurs.

To assure utmost dependability Klein's Climbers are forged from special steels and are individually tempered. Shanks and gaffs are tested to insure perfect riveting and temper.

Leg iron or shank is made of spring steel; gaff or spur is forged from tool steel.

The shape of Klein's Climbers has been carefully considered. It is the result of many years' experience and much practical suggestion from linemen. Klein's Climbers have flexible shanks and yield readily to pressure of leg; they do not chafe. Gaff or spur is correct in shape, set of angle and temper. It is hand riveted to leg iron in secure manner.

## No. 1939 Klein Streamlined Linemen's Climbers



A newly designed climber in which the use of any unnecessary metal has been carefully avoided. Leg irons are flexible and tapered in width and thickness. The "critical" section from 3 inches above the gaff to half way across the stirrup has been designed for ample strength. The gaffs are slender type, preferred on treated (Black Jack) poles. A detachable wrought ring carries the ankle strap. Gaffs 3 1/2 inches long measured on the outside. Riveted top loop.

Each climber individually tested.

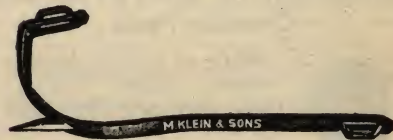
Size is measured from instep to end of shank. Special sizes on order.

Average weight per pair, 21 1/2 pounds.

Made in sizes, 15, 15 1/2, 16, 16 1/2, 17, 17 1/2 and 18 inches.

No. 1939.....per pair \$12.70

## Klein's Eastern Climbers



Has riveted strap loops.

Tested before leaving factory.

Standard sizes, 15, 15 1/2, 16, 16 1/2, 17, 17 1/2, and 18 inches. Other than standard sizes to order.

When ordering, specify length of shank desired. Measure from instep to extreme end.

Packed 1 pair in a carton.

No.	1901-M	1903-M
Per Pair.....	\$9.50	10.50
Weight.....pounds	3 3/8	2 7/8

## No. 1907 Klein's Tree Climbers



This is the standard tree climber used by forest rangers, top loggers, fire wardens, surveyors, etc. Tested before leaving factory.

Has riveted strap loop. Gaffs, or spurs, are 5 1/2 inches long measured on the outside and 3 1/2 inches long measured on the underside. They are set high in the leg iron so that points clear the ground.

When ordering, specify length of shank desired. Measure from instep to extreme end.

Packed 1 pair in a carton. Weight 4 pounds.

No. 1907.....per pair \$10.40



## Klein Linemen's Climber Straps and Pads



All leather used is first quality harness leather. All sewing is lock stitched with genuine linen thread hot waxed. Buckles and buckle tongues are Klein standard solid steel drop forgings, tested to 1500 pounds.

## With Square Pads—Straps 1¼-Inches Wide

This set consists of 2 upper or calf straps and two lower or ankle straps; and two square pads. Size straps, 1¼x22 inches. Size pads, 4x4 inches.

No.	Description	Per Set	Wt. Lb. per Doz. Sets
5301-1	With Plain Pads.....	\$8.20	20
5301-2	With Sheep-Lined Pads.....	8.60	20
5301-3	With Felt-Lined Pads.....	8.60	20

## With Square Pads—Straps 1-Inch Wide

5301-11	With Plain Pads.....	\$7.90	18
5301-12	With Sheep-Lined Pads.....	8.40	18
5301-13	With Felt-Lined Pads.....	8.40	18

## Without Pads

Set consists of one pair, (2 straps).

5301-4	Strap Size, 1¼x22 Inches.....	\$3.30	8
5301-9	Strap Size, 1x22 Inches.....	3.20	6
5301-14	Strap Size, 1¼x26 Inches.....	3.70	9
5301-10	Strap Size, 1x26 Inches.....	3.60	8

## With Pads

Set consists of one pair, (2 straps), and two plain pads, size, 4x4 inches.

5301-5	Strap Size, 1¼x22 Inches.....	\$4.80	12
5301-15	Strap Size, 1x22 Inches.....	4.70	11

## Square Shape Climber Pads

Size, 4x4 inches. Set consists of one pair, (2 pads).

8200	Sheep-Lined.....	\$2.00	4
8201	Felt-Lined.....	2.00	4
8202	Plain Leather.....	1.50	4

## No. 8206 Klein Linemen's Pear Shape Climber Pads



Made of two thicknesses of select harness leather riveted together. Outer piece punched with two slots for climber strap and one cross slot through which leg iron of climber is passed. Size, 3½x6 inches.

No. 8206.....per pair \$1.70

## Klein's Climber Straps and Pads

## Bell System Type



Set consists of 2 calf straps 1x22 in. with 2 special pads and 2 ankle straps 1x26 in.

Cat. No.	Per Set	Description	Wt. Lbs. per Doz. Sets
5301-6	\$9.10	With Plain Pads.....	14
5301-7	9.80	With Sheep-lined Pads.....	15
5301-8	9.80	With Felt-lined Pads.....	15

## Straps, Only

Doz. Pr.

5301-9	\$3.20	Calf Straps, 1x22 in., 2 Straps.....	5
5301-10	3.60	Ankle Straps, 1x26 in., 2 Straps...	6

## Pads, Only

Doz. Pr.

8203	\$2.50	Plain Leather.....	4
8204	3.70	Sheep-lined Leather.....	5
8205	3.70	Felt-lined Leather.....	5

Pads made of select leather, arranged with loops for climber straps and climber. Tapering 3¼ inch to 2¾x6¼ inch deep.

## No. 5204-KK Klein-Kord Tool Belts



Made of multiply Klein-Kord—specially woven, long staple cotton, with each ply laid in rubber and vulcanized—a material that is extremely flexible, waterproof and has a tensile strength many times that re-

quired in actual operation.

Belt is fitted with a Klein-Kord plier pocket, knife snap, tape thong, glove pouch loop, and lag wrench keeper.

Made in 36, 38, 40, 42, 44 and 46-inch sizes. Weight per dozen, 45 pounds.

No. 5204-KK, with Standard D Rings..... each \$22.00

## No. 1901-MG Klein's Linemen's Climber

## Gaff Guards



Made of harness leather. The wings of the guard fit around leg iron of climber just above the gaff and snap on.

The gaff is covered and protected by the leather fold with fiber stop.

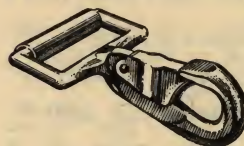
Weight per dozen pairs, 1¾ pounds.

Set consists of one pair, 2 pieces.

No. 1901-MG.....per pair \$1.20

## Klein Safety Snaps

A solid steel snap used on body belts, safety straps, etc. Each piece integral, no joints or welds. There are three patterns as illustrated below, individually tested to 1500 pounds. Galvanized finish.



## Standard Snaps

Has wide nose covering spring latch protecting it from accidentally twisting out of Dee Ring. Can be used with any Dee.

Straps listed with plain catalog numbers have Standard Snaps.

## Hank's Snaps

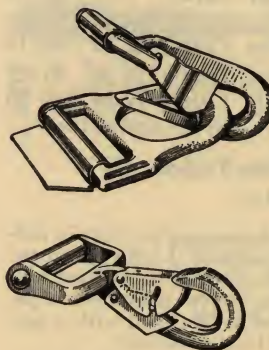
Of special construction and must be used in conjunction with Hank's Dee Rings on belt.

Straps listed with "H" prefixing catalog numbers have Hank's Snaps.

## Klein-Lok Snaps

Has a twin latch arrangement. Both latches must be pressed simultaneously to release. Full factor of safety. Can be used with any Dee.

Straps listed with "KL" prefixing catalog numbers have Klein-Lok Snaps.



## Klein Ankle Straps

For Ring Attachment on No. 1939 Klein Linemen's Climbers



Made in two pieces and furnished with rivets and burrs. Punched ready for quick attachment.

Weight per dozen pairs, 10 pounds.

No.	5301-16	5301-26
Per Pair.....	\$4.70	4.50
Size.....inches	1¼x24	1x24



## Klein's Tool Belts

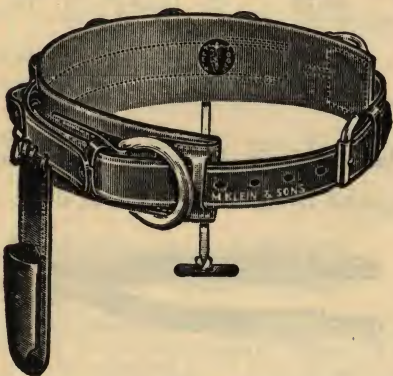
All Klein Belts are made of first quality vegetable tanned harness leather. Sewing is with genuine linen thread, hot waxed, lock stitched. Rivets are solid copper, hand set with burrs. Buckles, including tongues, and Dee Rings are steel drop forgings tested to 1500 lbs.

Catalog numbers prefixed by the letter "H" indicate belts fitted with Hank's Dee Rings which must be used with Hank's Safety Straps. All other makes are fitted with Standard Double or Single Bar Dees.

To insure proper fit select size that allows heel of Dee Rings to come about 1 inch in front of hip bones as per following table.

Distance Between Dee Rings, In....	20	22	22	24	26	28
Belt Size, In.....	36	38	40	42	44	46

## No. 5228 Klein's Leather Tool Belts



Made of one piece of soft pliable, tough russet latigo leather, doubled to form comfortable rolled edges and returned at each end. Cushion is  $4\frac{1}{2}$  inches wide at the center of the back and tapers to  $3\frac{1}{2}$  inches wide at the front. Body strap is first quality russet harness leather, 2 inches wide, stitched to the cushion at back and passing through loops at end of cushion as well as through the dee rings. A russet harness leather tool strap,  $1\frac{3}{4}$  inches wide with five loops in the  $1\frac{1}{4}$ -inch loop strap is carried on leather hangers from the body strap to which it is looped at the ends. This keeps the tool loops from contracting when belt is buckled on.

Constructed so that no rivets come through to inside of belt. Dee rings and buckle are single bar type solid steel drop forgings. All hardware tested to 1500 pounds. Galvanized finish. Fitted with leather pliers pocket, knife snap and tape thong, complete. Weight per dozen, 45 pounds.

Size.....inches	36	38	40	42	44	46
No. *5228.....each	\$25.60	25.60	25.60	25.60	25.60	25.60

\*With standard (single bar) dees.

## Klein Tool Belts

## With Standard Dees

No.	Each	Width In.	Wt., Lb. per Doz.
5204	\$14.00	$3\frac{1}{2}$	34
5205	15.50	$\dagger 2\frac{1}{4}$	35
5202	13.50	$2\frac{1}{4}$	32
*5204DE	17.00	$3\frac{1}{2}$	38

\*With pliers pocket, knife snap and tape thong attached.

$\dagger$ Double thickness.

No. 5204 DE

## No. 5204-TSO Klein Texas Belts



Lined throughout with soft latigo leather. With standard dees.

Made 4 inches wide at center of back for full support, tapering to  $2\frac{1}{4}$  inches wide at hips to permit free bend to body of wearer.

Weight, 36 pounds per dozen.

No. 5204-TSO.....each \$24.70

## No. 5211 Klein Leather Tool Belts



Used by linemen, electricians, and mechanics.

Made of harness leather. Inner or cushion layer, 3 inches in width, is narrowed at each end to carry the D rings. Body strap, 2 inches in width, is riveted and stitched to the cushion and also passes through the D rings. Two tool straps are provided and formed into two loops at each side of the belt by riveting through the belt.

D rings and buckle are solid steel drop forgings galvanized to prevent rust, and are tested to 1500 pounds.

Belt surfaces taking wear of D rings are protected by copper safety liners riveted through the full thickness of the belt. Rivets are solid copper, hand set with burrs.

Sewing is with linen thread, hot waxed and lock stitched.

Available in sizes 36, 38, 40, 42, 44, and 46 inches. Other sizes on request. Weight per dozen, 34 pounds.

No. 5211, With Standard D Rings (Double Bar).....each \$16.50

## No. 5212 Klein's Derrick Belts



For oil derrickmen or structural workers.

Made to stand load of 250 pounds with a dead fall of five feet.

One three inch Forged Dee Ring at back for life line.

Double tongue buckle.

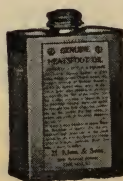
No. 5212, Weight, 42 Lbs.....each \$17.00

## Neatsfoot Oil

Keeps leather soft and pliable. Prolongs its life.

Supplied in cans with full directions for use.

Pint Can.....	each \$1.70
Quart Can.....	each 2.90
Half Gallon Can.....	each 5.20





## No. 5214 Klein's Steel Workers' Belts



Three forged Dee rings for attachment of line in most convenient position. Leather loop for wrench. Main belt passes through rings held in place by backing pieces of latigo leather stitched and riveted to belt proper. Two-inch buckle, double tongue type with solid forged frame. One-piece belt of harness leather, two inches wide.

Distance between outer Dee rings 24 inches. Adjustable from 36 to 44 inches. Made in one size.

No. 5214, Weight per Dozen, 28 Pounds.....each \$12.80  
No. 5214-O, Without Wrench Loop, Weight per Dozen, 27½ Pounds.....each 12.50

## No. 5209 Klein's Safety Harnesses



Back



Front

Meets requirements of various safety commissions for use where danger from gassing is present. Working in gassy manholes, gas tanks, oil tanks and even boilers, men are frequently overcome and an emergency arises instantly. This harness provides a sure means by which patient can be brought to safety and danger overcome. Design is such that it slings wearer in a perpendicular position so that he can be readily hauled through an ordinary manhole opening. A solid harness leather back plate 2¼x10 inches is stitched and riveted around the 1¼-inch adjustable belt strap. Back plate also carries a tested drop forged D ring to which the ¾-inch manila life line, 25 feet in length is permanently attached. Shoulder straps are ¾ inch and made adjustable and riveted to belt at single ends. These straps hold belt in position around chest so as not to encumber wearer while working. Weight per dozen, 75 pounds.

No. 5209, with Life Line.....each \$17.40

## No. 5206-1A Klein Leather Belts and Safety Straps



Made of harness leather. Belt has cushion 2¼ inches wide which carries the D rings. The outer or loop layer is 1½ inches wide formed into tool loops by riveting to the cushion. Also passes through the D rings.

The safety strap is 1¼ inches wide and 68 inches long. Has standard snaps and stainless clips.

All snaps, D rings, and buckles are solid steel drop forgings tested to 1500 pounds, and are galvanized finished.

The strap may be adjusted to any length by means of a

buckle or can be removed entirely from belt. Sewing is with hot waxed linen thread, locked stitched. Available in sizes 36, 38, 40, 42, 44, and 46 inches.

No. 5206-1A Weight per dozen, 62 pounds.....each \$26.80

## Klein Leather Safety Straps



No. 5251

## Leather Wear Pads

No.	Each	Size	Wt., Lb. per Doz.
5251	\$13.70	1¾ In.x5 Ft. 8 In.	32½
KL5251	15.40	1¾ In.x5 Ft. 8 In.	32½

## Stainless Steel Wear Pieces

5250	\$13.70	1¾ In.x5 Ft. 8 In.	32½
KL5250	15.40	1¾ In.x5 Ft. 8 In.	32½
5253	15.20	2 In.x5 Ft. 8 In.	40
KL5253	16.90	2 In.x5 Ft. 8 In.	40

## Bell System Type

5275S	\$15.80	2 In.x5 Ft. 1½ In.	39
5257L	16.70	2 In.x5 Ft. 10 In.	41

## E.E.I. Specifications

5258	\$17.10	2 In.x5 Ft. 6 In.	40
KL5258	18.20	2 In.x5 Ft. 6 In.	40

## Klein's Klein-Kord Safety Straps

## Fixed Length Type



This fixed length strap avoids wear close to the buckles, due to the smooth way it moves on the pole.

Effective length, 1¾x56 inches.

Weight per dozen, 25½ pounds.

No. KL-5234, with Klein-Lok Snaps.....each \$12.50

No. 5234, with Standard Snaps.....each 10.80

## Klein's Belt Accessories

## No. 5130 Tape-Thongs With Fiber Cross Bar

Tape-thong provides a convenient arrangement for carrying a roll of tape. Made of pliable latigo leather, 10 inches long by ¾ inch wide. Slit to form loops at both ends. One end is looped to a fiber cross bar 3½ inches long. The other loop may be attached readily to the belt.

Weight per dozen, ½ pound.

No. 5130.....each \$5.50

## No. 5131 Knife Snaps With Strap and Rivets

Mounted on harness leather strap. Provided

with rivets and burrs ready for attaching to the belt. Weight per dozen, 1½ pounds.

No. 5131.....each \$6.00

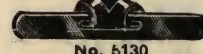
## No. 5132 Rings With Strap and Rivets

Mounted on harness leather strap. Provided with rivets and burrs ready for attaching to the belt.

No. 5132, Weight per Dozen, ½ Pound.....each \$5.50



No. 5132



No. 5130



No. 5131



**No. 5233 Klein Klein-Kord Safety Straps**

Has standard snaps, stainless clips.

Takes a load of 2400 pounds before ripping. Red center fabric made of 6 plies of long staple cotton of special weave, each ply laid in rubber and vulcanized. Size,  $1\frac{3}{4}$  in. by  $5\frac{3}{4}$  feet. Other lengths on order. No. 5233, Weight per Dozen, 36 Pounds.....each **\$13.70**

**Klein Klein-Kord Extension Snaps**

Used in conjunction with a fixed length safety strap. Provides the extra length necessary when working on large diameter poles.

Dimensions: length, 15 inches; width,  $1\frac{3}{4}$  inches.

Weight per dozen,  $16\frac{1}{2}$  pounds.

No. 5236, With Standard D and Snap.....each **\$6.30**

No. KL-5236, With Standard D and Klein-Lok Snap.....each **\$7.20**

**No. 5215 Klein's Extension Straps**

This strap is  $1\frac{3}{4}$  inches wide, made of first quality harness leather and fitted with special forged D ring and buckle. It is worn attached to D ring on main body belt and used when large diameter poles necessitate a longer safety strap than the regular. By engaging snap of the regulation safety strap to the special D ring on the extension strap the lineman can immediately adapt his outfit so that he has no difficulty in working conveniently. No matter how large the pole—can be lengthened or shortened.

Size,  $1\frac{3}{4}$ x15 inches.

Weight per dozen, 14 pounds.

No. 5215, Forged D Ring.....each **\$7.20**

**No. K.K.D.-025 Klein-Kord Dressing**

For use with Klein-Kord.

Put in  $\frac{1}{4}$ -pint cans.

Weight per dozen,  $4\frac{1}{16}$  pounds.

No. K.K.D.-025.....per can **\$ .60**

**Salisbury Non-Spillable P.B. Paint Pots**

This is a rubber container for carrying insulating and weather-proofing compounds that do not have an oil base.

Provides a safe and convenient means to carry both compound and brush, eliminating use of metal containers, glass bottles, and other makeshift devices.

Flange extends inward at junction of the neck preventing contents from spilling or splashing out during rough handling. Equipped with tapered cork through which a rubber-set brush is securely inserted.

Single compartment pot is for insulating only; double compartment pot is made with an extra receptacle to hold soldering paste.

**No. 5108 Klein's Inspectors' Harness Leather Tool Bags**

This bag is made of harness leather and will stand rough and hard usage. The leather does not absorb moisture.

Bag has a shoulder strap combined with a pad and hand strap. The bottom is three-ply and is protected with steel studs.

Retaining straps

pass clear around the bag so that it may be loaded to the limit of its capacity and be securely held intact. All seams are sewed with hot waxed linen thread, lock stitched.

No.	5108-14	5108-16	5108-18	5108-20	5108-22	5108-24
Each....	\$17.90	19.20	22.00	25.00	26.70	28.20
Size...in.	14x8	16x8	18x8	20x8	22x8	24x8
Wt....lb.	5	$5\frac{3}{4}$	6	$6\frac{1}{2}$	7	$7\frac{1}{4}$

**Klein's Linemen's Canvas Tool Bags****With Leather Bottoms**

This bag is made of one piece of white duck reinforced all around the bottom with heavy bag leather. The bottom is made of heavy leather outside and duck inside, lock stitched all around. The bottom is protected with strong steel studs. Bottom and sides are joined together with lock stitched leather welt seams.

Mouth of the bag is formed by a 12-gage steel frame. The canvas is clinched between this frame and an inside secondary steel frame.

Bag has harness leather handles and two retaining straps with buckles.

**No. 5102, with Leather  $3\frac{1}{4}$  Inches up Sides****No. 5105, with Leather 8 Inches up Sides**

No.	Each	Size Inches	Weight Pounds	No.	Each	Size Inches	Weight Pounds
5102-12	\$11.70	12	$2\frac{1}{4}$	5105-16	\$14.20	16	3
5102-14	12.50	14	$2\frac{1}{2}$	5105-18	15.00	18	$3\frac{1}{2}$
5102-16	13.00	16	3	5105-20	15.70	20	$3\frac{3}{4}$
5102-18	13.90	18	$3\frac{1}{4}$	5105-22	16.20	22	4
5102-20	14.50	20	$3\frac{1}{2}$	5105-24	16.70	24	$4\frac{1}{4}$
5102-22	15.00	22	$3\frac{3}{4}$	.....	.....	.....	.....
5102-24	15.50	24	4	.....	.....	.....	.....

Linemen's bags can be furnished with lock and key, and shoulder strap at slight additional cost.

**No. 30 Salisbury Non-Metallic Tool Bags With Inside Utility Pocket**

Recommended as an essential part of line crew equipment. Provides an efficient method of raising tools, supplies and materials to the pole top.

Bag is collapsible, of sturdy construction, amply reinforced and designed throughout for heavy duty service.

Equipped with a utility pocket on the inside to accommodate small tools, bolts, washers, etc.

Made of duck with a single side seam together with top and bottom fastenings strongly sewed. The heavy leather bottom extends 3 inches up the sides.

A  $\frac{1}{2}$ -inch rope handle is firmly spliced to the bag through leather reinforcements.

Diameter, 12 inches. Height, 16 inches.

Weight,  $2\frac{1}{4}$  pounds.





**Salisbury Line Hose**

A convenient device for protecting linemen from accidental contact with energized lines. By completely

surrounding the wire with a substantial wall of voltage-resisting rubber more than ample insulation is provided.

The self-locking lip prevents the hose from being accidentally detached. Short bends can be made without exposing the conductor it covers.

Furnished in  $\frac{1}{4}$ ,  $\frac{3}{8}$ ,  $\frac{5}{8}$ , 1,  $1\frac{1}{4}$  and  $1\frac{1}{2}$ -inch sizes, inside diameter; in standard lengths of 3,  $4\frac{1}{2}$  and 6-foot pieces.

**Salisbury Connector End Line Hose**

Standard line hose with the additional feature of an integral built-on connector end which overlaps and securely holds the end of an adjoining piece of hose when longer spans of line are to be covered. Increases standard lengths by 8 inches.

The connector end is also useful in covering connectors, bulky tap joints, and leads on stud type transformers.

The connector end does not interfere with the application of the hose in normal uses and it is recommended that a portion of the hose on each truck be of this connector end type.

Furnished in  $\frac{5}{8}$ , 1,  $1\frac{1}{4}$ , and  $1\frac{1}{2}$ -inch inside diameters and in standard hose lengths of 3,  $4\frac{1}{2}$ , and 6-foot pieces.

**Salisbury Line Hose Connectors**

Used where two or more pieces of straight line hose are employed on one wire to prevent the pieces from slipping apart and to eliminate the possibility of the conductor being exposed between adjoining ends. Also used to overlap the ends of line hose separated by a bulky joint.

Shaped to fit the outside contour of the hose, the walls being extra thick to provide the necessary grip. A series of ribs placed on the inside surface give the connector a tight hold.

Length, 12 inches. Available in two sizes to fit over either  $\frac{5}{8}$  or 1-inch line hose. When ordering specify hose size.

**Salisbury Linemen's Blanket Canisters**

Used to protect linemen's rubber blankets from puncture or other injury when not in use and provide a safe and convenient container for blankets while being carried on the trucks or service cars and while retained in stations.

Constructed of strong galvanized iron.

Equipped with caps permanently fastened to the container by a chain. Canister and cap are made with beaded edges.

Available in the following sizes:

- No. 1 4-In. Diam. 37-In. Long, 1 Blanket, Wt.  $4\frac{1}{2}$  Lb.
- No. 2 5-In. Diam. 37-In. Long, 2 Blankets, Wt. 6 Lb.
- No. 3 6-In. Diam. 37-In. Long, 3 Blankets, Wt. 7 Lb.
- No. 4 7-In. Diam. 37-In. Long, 4 Blankets, Wt.  $8\frac{1}{2}$  Lb.
- No. 5 8-In. Diam. 37-In. Long, 5 Blankets, Wt.  $9\frac{3}{4}$  Lb.
- No. 6 9-In. Diam. 37-In. Long, 6 Blankets, Wt.  $11\frac{3}{4}$  Lb.

**Salisbury Rubber Insulator Hoods**  
**Universal Type**

Used in conjunction with line hose to cover tie-wires and conductors as they pass the insulators. Completely covers this point of hazard in a close fitting and positive manner. Can be used on double arm as well as single arm construction. The extending arms of the hood over-lap the ends of the line hose.

Compounded to secure high insulating qualities over a long period of time. Vulcanized in steel molds while under great pressure, in heavy duty presses; retains its shape and flexibility. Thick walls of solid rubber give it ability to stand up under severe conditions of use.

Requires no attachments to hold it in place. Securely locks itself to the under side of the insulator and cannot open, turn, slide or become accidentally dislodged.

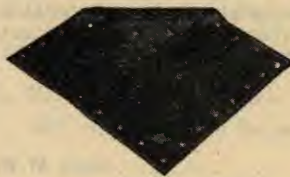
Solid rubber flanges extending inwardly from under sides of the body portion serve to grip the under side of the insulators. Exterior ribs are placed to reinforce the side walls and to increase the grip.

Inside dimensions arranged so hood properly fits all popular types of pin insulators in distribution service.

Length,  $14\frac{3}{4}$  inches. Height,  $6\frac{1}{4}$  inches.

Weight, 4 pounds. Packed one to a carton.

Telephone and telegraph companies use a special hood shaped to fit telephone style insulators. As it is used on single arm poles only both extending arms of hood are of the same diameter and will snugly grip the  $\frac{1}{4}$ -inch size line hose. In ordering, specify Telephone Type.

**Salisbury Snap-On Blankets and Jackets**

Snap-On Jacket is especially useful in covering dead ends, pot heads, cutouts, arrestors, and like equipment which does not require the full size blanket.

Equipped with eight reinforced eyelet holes along each side and twelve hard

rubber buttons. When folded over or wrapped around the apparatus to be covered, the edges are held closed by snapping the small heads of the buttons through the opposite eyelets. This self-contained method of fastening has been thoroughly tried and found practical.

Guaranteed to resist 20,000 volts on acceptance tests for 3 minutes.

Size blanket,  $36 \times 36 \times \frac{1}{8}$  inches.

Size jacket,  $22 \times 22 \times \frac{1}{8}$  inches.

**Salisbury Rubber Protective Blankets****All Rubber—Black**

Will fold, wrap or hang suspended in any position to provide an insulating barrier between electrical workers and hazards adjacent to their working position.

Bead molded on all four sides to prevent tearing.

Guaranteed on acceptance tests to resist 20,000 volts for 3 minutes.

Plain		With Eyelets	
No.	Size, Inches	No.	Size, Inches
300	$36 \times 36 \times \frac{1}{8}$	300-E	$36 \times 36 \times \frac{1}{8}$
400	$27 \times 36 \times \frac{1}{8}$	400-E	$27 \times 36 \times \frac{1}{8}$

Prices upon application.



## Salisbury Electric All-Rubber Coats



Made of strong durable material, coated on the outside surface with high grade rubber and a frictioned coating on the inside. No metal is used in its construction.

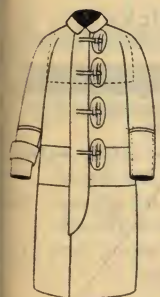
The inner cuff of the double-storm cuff is made of pure gum rubber. The collar is of standard lay-down type. Reinforced at hips to protect coat from tool belt abrasion. Has raglan shoulders, all rubber fasteners and storm fly front.

Length, 46 inches.

Furnished in sizes 36 to 46.

Prices upon application.

## Salisbury Static-Resisting Line Coats



The special construction of this coat retards static tingling at the neck or wrists when the garment is used during wet weather on work that is adjacent to energized conductors.

Special features: Inside double back; special rubber fasteners; reinforced at belt; all seams sewed and cemented; insulating skirt collar; roomy raglan shoulders; insulating storm cuffs; storm fly front.

Guaranteed to be free from all defects in material or workmanship.

The all rubber collar is standard. Corduroy faced collar can be furnished if desired.

Furnished in sizes 36 to 46 inclusive. Length, 47 inches.  
Packed one to a carton.

## Salisbury Cable Bandages



For general use as temporary insulation. Made of highest grade pure gum rubber. Unusually strong, very flexible, with excellent ageing qualities. Acceptance tests prove that a single thickness can withstand 10,000 volts.

In rolls 14 feet long, 3 or 4 inches wide, 1/2 inch thick.

Net weight per 3-inch roll, 10 ounces; 4-inch, 12 ounces.

## Salisbury Switchboard Rubber Matting



A non-slip corrugated surface matting of high dielectric strength and long aging qualities.

Meets requirements of all standard specifications.

Guaranteed to resist 50000 volts for 3 minutes on acceptance tests.

Furnished in 1/4-inch thickness; 24, 30, 36 and 48-inch widths; lengths up to 75 feet. Other

widths and thicknesses can be furnished.

## Salisbury Rubbercuff Protector Gloves



Gives complete protection with its rubbercuff protector and not only gives greater safety but allows a substantial reduction in glove expense.

Most rubber gloves are destroyed through reason of snags occurring on the upper ends of the gauntlets. Ordinary protector gloves made of leather cannot extend to the rim of the rubber gloves because leather is a conductor of electrical current.

Cuff is made from light but strong fabric reinforced, voltage resisting rubber. Tests prove that current creepage over it is no greater than over gauntlets themselves. Hand part is made from high quality leather.

### For Use with Straight Finger Rubber Gloves

No. 30, Sizes 9, 9 1/2, and 10.....  
No. 32, Sizes 10 1/2, 11, and 12.....

### For Use with Curved Finger Rubber Gloves

No. 130, Sizes 9, 9 1/2, and 10.....  
No. 132, Sizes 10 1/2, 11, and 12.....

## Salisbury Linemen's Protector Gloves Full Gauntlet, 4-Inch Style



Designed to wear over Linemen's Rubber Gloves to protect them from snagging, tearing or abrasive wear. Made expressly for this work and should not be confused with the ordinary work gloves.

Made of specially tanned Grade A buffed horsehide, maroon color, and from selected weights.

Remains soft and pliable under all conditions and will not become

slippery when wet. Resists wire puncture to a great degree.

### For Use With Straight Finger Rubber Gloves

No. ....	18-C	18	20-C	20
Style Back...	Closed	Open	Closed	Open
Covers Rubber				
Glove Sizes.	9, 9 1/2, 10	9, 9 1/2, 10	10 1/2, 11, 12	10 1/2, 11, 12

### For Use with Curved Finger Rubber Gloves

No. ....	118-C	118	120-C	120
Style Back...	Closed	Open	Closed	Open
Covers Rubber				
Glove Sizes.	9, 9 1/2, 10	9, 9 1/2, 10	10 1/2, 11, 12	10 1/2, 11, 12

## Salisbury Linemen's Glove Bags



Used to protect linemen's rubber gloves when not in use. Made of heavy, tightly woven, waterproof 42-ounce white duck with non-raveling edges.

Special features: Snap hook and D ring for attaching to belt; double head reinforcing rivets; sewed with linen thread, lock stitched; gusset sides and bottom, carrier flat when empty; flat lying cover; strong snap fastener; waterproof; ventilating eyelets in bottom gusset.

No. ....	35	25
Length.....	inches 15	9
Width.....	inches 8	8



### Salisbury Steam Cured Linemen's Rubber Gloves



No. 90  
Straight Finger Style

No. 100  
Curved Finger Style

Qualities of high insulation, low leakage, strength, flexibility and long life are evenly balanced. Each of these essentials is raised to the highest possible value without lowering the standard of some other property.

All gloves are seamless, form fitting, accurate to size, with finger lengths and widths adjusted to best meet average conditions.

Both Nos. 90 and 100 are furnished in 10,000, 15,000, and 20,000-volt ratings. Class B, 10,000-volt, 14-inch gloves are standard; Class A, 10,000-volt, heavier weight gloves are available.

Guaranteed to pass the most thorough inspection and to meet the A.S.T.M. specifications. Replacement made or return accepted of any which fail under initial tests at their rated voltage or otherwise prove unsatisfactory at time of delivery.

Furnished in sizes, 9, 9½, 10, 10½, 11, and 12.

Packed 1 pair to a box.

### Salisbury Protective Rubber Sleeves

Formed and Vulcanized in Chromium Plated Molds  
Full Length



Used to protect the arms and shoulders from accidental contact with energized equipment. Fastened across the shoulders by an adjustable rubber strap and rubber buttons. New chest strap feature prevents top of sleeves from sliding back and is so positioned that it does not interfere in any way.

Guaranteed to resist 10,000 volts for three minutes on initial tests. Chocolate color.

No. 40-R, standard size, is usually found suitable. No. 50-L, large size, is for men of large build or for use over heavy clothing.

Packed 1 pair to a carton.

No.		40-R	50-L
Outside Arm Length.....	inches	25	27
Inside Arm Length.....	inches	17½	18
Wrist Opening.....	inches	5½	6
Arm Opening.....	inches	11	12
Shipping Weight.....	pounds	3	3¾

#### Elbow Length

Fits fairly close around forearm but permits free arm movement. Very flexible. Molded in one seamless piece.

Combination of short sleeves with standard length gloves is economical, for if either are damaged it is only necessary to replace the unserviceable glove or sleeve.

Guaranteed to resist application of 10,000 volts for three minutes between water electrodes. Chocolate color.

Packed 1 pair to a carton.

No.		60-R	70-L
Outside Arm Length.....	inches	16¼	16¼
Inside Arm Length.....	inches	13½	13½
Wrist Opening.....	inches	4¼	4¼
Arm Opening.....	inches	6¼	7
Shipping Weight.....	pounds	1½	2

### No. G4767-2 Chance Temporary Jumper Clamps



This clamp, equipped with 5000-volt rubber-covered extra-flexible cable, is recommended for extra protection to linemen doing general low voltage maintenance work. Has large, positive, gripping surface.

Handle is of corrugated, medium hard rubber; will not break or crack if dropped from pole. Cable is easily and securely attached. Handle will accommodate 1-inch maximum overall diameter grounding cable.

No cable furnished.

Main line contact: maximum wire size, 750,000 CM stranded copper; minimum wire size, No. 10 solid copper. Jumper wire size: maximum, No. 2/0, 5000-volt flexible grounding cable. Length, 9 inches.

Weight each, 1¾ pounds.

### Chance Grip-All Clamp Sticks



This clamp stick is safe and easy to handle.

To open jaws it is necessary to release the safety catch. Safety catch closes automatically when jaws are closed.

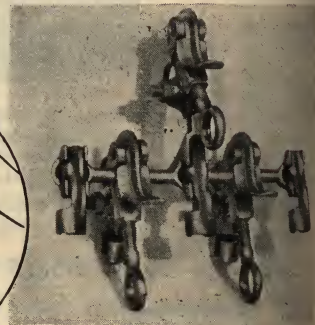
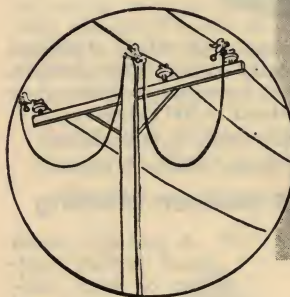
Full universal action is obtainable; eye screw may be turned with clamp stick at 0° to 90° angle to screw axis.

Hardwood pole is 1½ inches in diameter; tested to withstand 75,000 volts per foot for five minutes.

Castings are aluminum and bronze.

No.	M1865-4	M1865-6	M1865-8
Length Pole.....feet	4	6	8
Overall Length.....	4'6 $\frac{3}{4}$ "	6'6 $\frac{3}{4}$ "	8'6 $\frac{3}{4}$ "
Net Weight.....pounds	4 $\frac{1}{2}$	5 $\frac{1}{4}$	6

### No. G1710-5 Chance 3-Wire Standard Grounding Sets



Has eye screw for use with clamp stick, no cable.

Cluster shown at right is made for grounding on any 3-wire construction. Also with clamps mounted on poles, single clamps mounted or unmounted. Clamps and cluster are bronze.

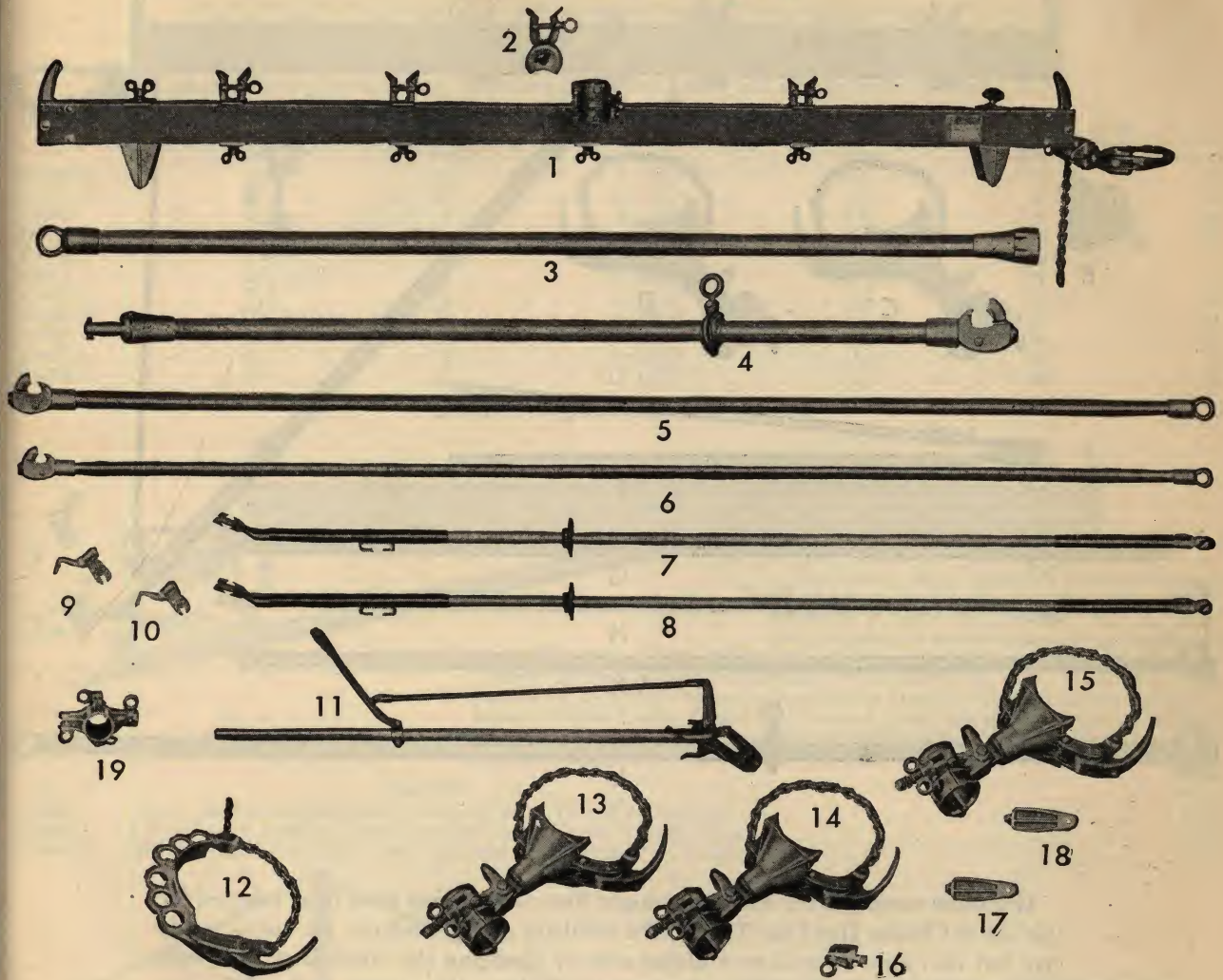
Main line contact: maximum wire size, 4/0 stranded copper, 3/0 ACSR. Jumper contact: maximum wire size, No. 2 ground cable. Overall length, 8 in. Weight, 4½ pounds.



## No. 4800-15 Chance Hot Line Maintenance Tool Sets

Aluminum Fitted for Light Weight, Efficiency

Complete Set for Two or Three Phase Lines



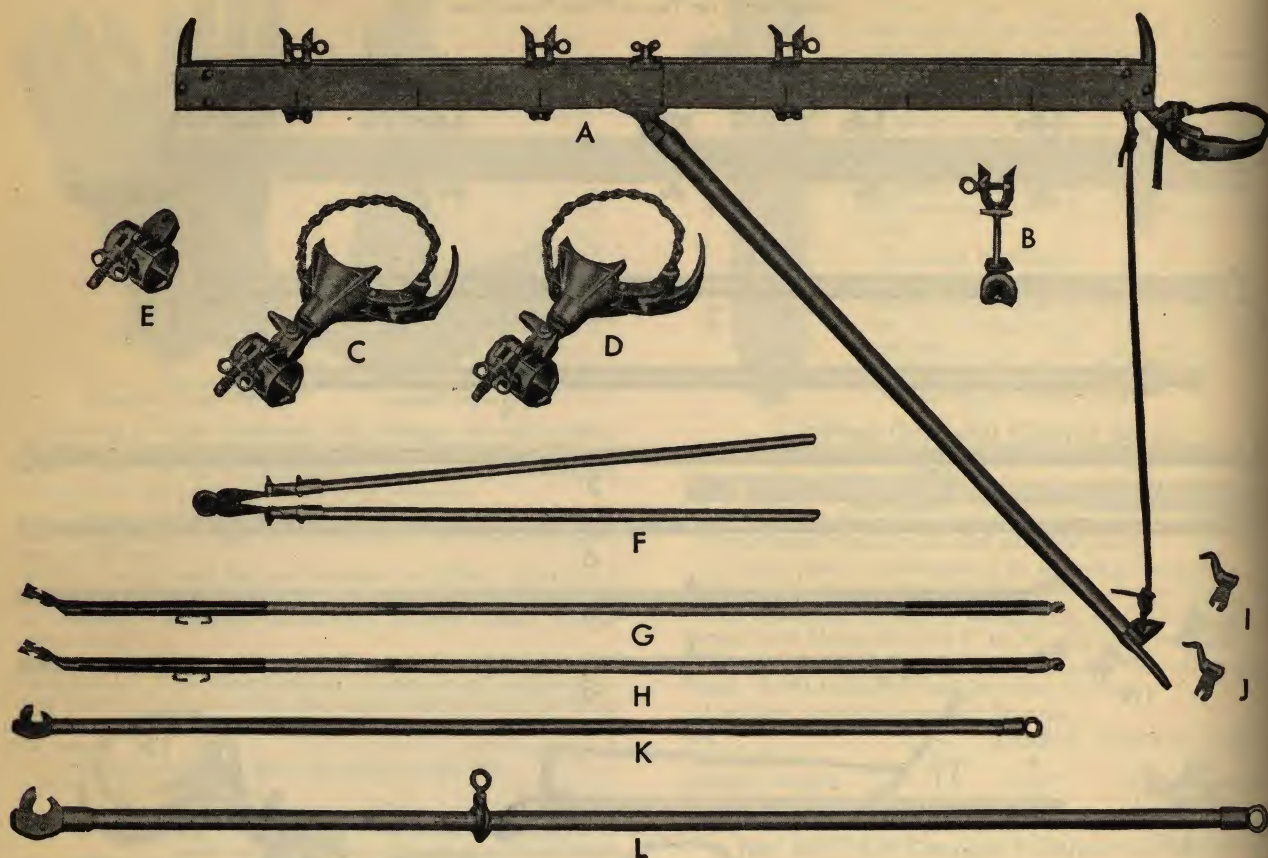
These Chance Hot Line Maintenance Tools represent the latest developments in equipment for making repairs on high voltage lines. The metal fittings are cast of heat treated aluminum alloy which makes them lightweight for ease in handling and has made possible many mechanical improvements.

The tool set shown above has been developed for making insulator changes, cross arm changes or pole changes on two or three phase straight line construction. The auxiliary arm may be used either as a side arm or as a lifting arm to lift the conductors above the structure. The set is available complete as shown or in parts as listed. Poles are laminated spruce tested to withstand 75,000 volts per foot.

No.	Reference	Description	Approx. Wt., Lb.
M4800-9	1 & 2	9-Foot Dual Auxiliary Cross Arm with Stationary Safety Brackets. Arm is Equipped with Chain Tightener, Three Wire Holders, Two Wire Tong Stirrups, 2½-Inch Pole Clamp and Arm Fitting, All of Which Are Detachable, and One Conductor Holder Clamp for Wire Tong (1).....	31½
M4657-5	3	2½"x15' Wire Tong in Two Sections, Spliced 8 Feet from Butt Swivel End with M3355-3 Rigid Pole Splice.....	25½
M4655-3	6	Wire Tong 1½"x10' Overall Length.....	89½
M1729-1	4	Wire Tong Band, 2½ Inches.....	13¼
M4656-1	5	Wire Tong, 2"x10' Overall Length.....	103½
M1855-6	7 & 8	Tie Stick 1¼"x8'. Blade Head on One End, Universal Head Other End, and Fiber Sleeve Both Ends. Hand Guard. (2 Required).....	3
M4455-69	9 & 10	Universal Rotary Prong Tie Stick Heads (2 Required).....	3⅞
M1871-4	11	4-Foot Lever Type Wire Cutters.....	61¼
M1728-5	19	Wire Tong Pole Clevis, 2½ Inches.....	21½
M1846	12	Rope Snubbing Bracket with Chain Tightener.....	53⅞
M4740-5	13 & 14	Wire Tong Saddle and Tightener for 2½-Inch Wire Tong (2 Required).....	83⅞
M4740-3	15	Wire Tong Saddle and Tightener for 1½-Inch Wire Tong.....	8
M4740-14	16	Wire Tong Saddle Clevis.....	9½
M4740-6	17 & 18	Wire Tong Saddle Extension, 4 Inches (2 Required).....	3¼



## No. 4800-10 Chance Standard Hot Line Tool Sets



Minimum essentials for working straight line construction have been selected for this set of Chance Hot Line Tools. The auxiliary arm is designed for use as a side arm but also may be used as a lifting arm by changing the position of the brace and mounting the arm on the wire tong for lifting. Wire tongs and saddles are generally used for laying conductors out into the wire holders on the auxiliary arm and for holding the conductor, on the opposite side of the pole, in the clear.

This tool set may be used for two or three phase lines. Metal fittings are heat treated aluminum alloy. Poles are laminated spruce, tested to withstand 75,000 volts per foot.

No.	Reference	Description	Approximate Weight Pounds
4800-1	A	Auxiliary Cross Arm, 8 Feet (3 Holders).....	31 1/8
4800-12	B	Wire Holder with Rigid Tong Holder for Attaching Item L to Item A.....	2
M4740-5	C & D	Saddle and Tightener Complete with Clamp for 2 1/4-Inch Poles (2 Required)....	11 1/4
M4741-1	E	1 1/2-Inch Pole Clamp.....	2 1/4
M1861-12	F	Insulated Handles with 8-Inch Cutters; 1 1/4-Inch Pole.....	5 1/2
M1855-6	G & H	Blade Tie Stick, 1 1/4-Inch 8-Foot Laminated Spruce Pole with Universal End (2 Required)....	2 5/8
M4455-69	I & J	Universal Rotary Prong Tie Stick Head (2 Required).....	3/8
M4655-2	K	Wire Tong, 1 1/2"x8', with Butt Swivel.....	7 3/8
M4657-1	L	Wire Tong, 2 1/2"x12'x10 1/4", with Butt Swivel.....	19 5/8
M1729-1	M	Wire Tong Band for 2 1/2-Inch diameter Wire Tong.....	1 3/4



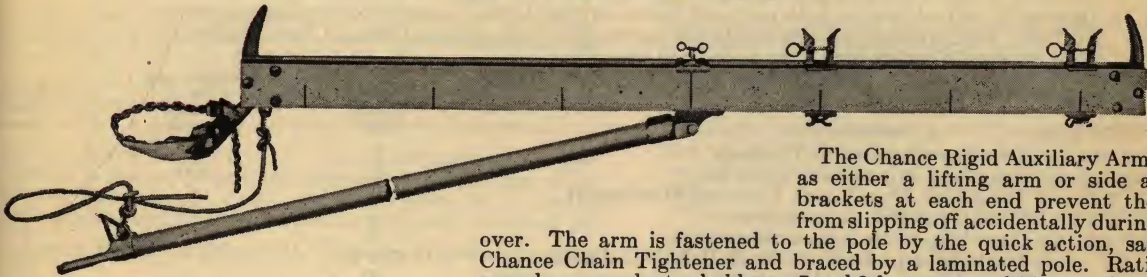
## Chance Wire Tongs



Use of heat treated aluminum castings has made possible several improvements in design and operation of Chance Wire Tongs without increasing their weight. Width of jaws has been increased to handle larger conductors. New actuating screw is faster and easier to operate, only 6 turns from fully open to fully closed on the 2-inch size being needed as compared with 12 $\frac{1}{8}$  turns with the former design. Poles are laminated spruce and are tested to withstand 75,000 volts per foot for five minutes.

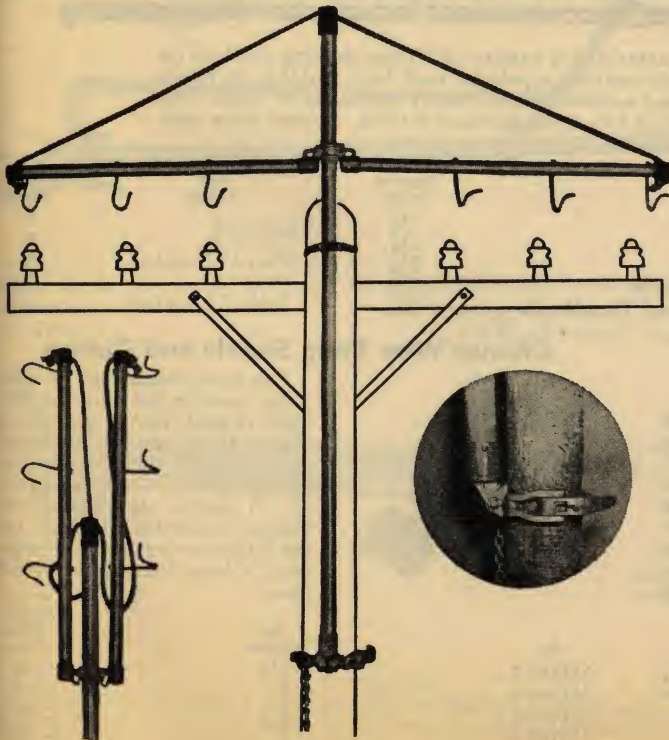
No.	Pole Diameter Inches	Pole Length Feet	Overall Length	Maximum Wire Size Inches	APPROX. WEIGHT	
					Pounds	Ounces
M4655-2	1 $\frac{1}{2}$	8	8' 7 $\frac{3}{4}$ "	1 $\frac{1}{16}$	7	9
M4655-3	1 $\frac{1}{2}$	10	10' 7 $\frac{3}{4}$ "	1 $\frac{1}{16}$	8	9
M4656	2	8	8' 8 $\frac{1}{2}$ "	1 $\frac{1}{16}$	9	10
M4656-1	2	10	10' 8 $\frac{1}{2}$ "	1 $\frac{1}{16}$	10	13
M4656-3	2	12	12' 8 $\frac{1}{2}$ "	1 $\frac{1}{16}$	12	
M4657	2 $\frac{1}{2}$	10	10' 10 $\frac{1}{4}$ "	1 $\frac{1}{2}$	17	8
M4657-1	2 $\frac{1}{2}$	12	12' 10 $\frac{1}{4}$ "	1 $\frac{1}{2}$	19	10
M4657-2	2 $\frac{1}{2}$	14	14' 10 $\frac{1}{2}$ "	1 $\frac{1}{2}$	21	11
M4658	3	10	10' 10 $\frac{1}{2}$ "	1 $\frac{1}{2}$	20	10
M4658-1	3	12	12' 10 $\frac{1}{2}$ "	1 $\frac{1}{2}$	23	6
M4658-2	3	14	14' 10 $\frac{1}{4}$ "	1 $\frac{1}{2}$	26	2

## Chance Rigid Auxiliary Arms



The Chance Rigid Auxiliary Arm can be used as either a lifting arm or side arm. Safety brackets at each end prevent the conductor from slipping off accidentally during the change over. The arm is fastened to the pole by the quick action, safety locking Chance Chain Tightener and braced by a laminated pole. Ratings are 200 pounds per conductor holder on 7 and 8-foot arms and 150 pounds per conductor holder on 10-foot arm. Use of heat treated aluminum alloy fittings has reduced weight of 7-foot arm from 35 pounds to 28 $\frac{3}{4}$  pounds. Weight reduction in other sizes is comparable.

No.	Description	Weight Pounds
M4800	7-Foot Rigid Auxiliary Arm Complete with Two Wire Holders.....	28 $\frac{3}{4}$
M4800-1	8-Foot Rigid Auxiliary Arm Complete with Three Wire Holders.....	31 $\frac{1}{8}$
M4800-2	10-Foot Rigid Auxiliary Arm Complete with Three Wire Holders.....	33 $\frac{1}{8}$



## No. M4800-35 Chance Temporary Distribution Cross Arms

This lightweight Chance Temporary Distribution Cross Arm is designed for changing four or six pin arms or insulators on voltages up to 4 kv. in urban areas where spans are short.

Folding arms permit it to be lifted by hand line through phases to position on pole.

Bottom of cross arm pole is applied with Chance Chain Tightener, top with adjustable strap arrangement.

This unit is rated for 100 pounds per hook, using six lines at once. Hooks are spaced 14 inches apart for sufficient insulation.

Lift pole, 8 feet by 2 $\frac{1}{2}$  inches.

Hinged arms, 4 feet by 2 inches.

Weight, 30 pounds.



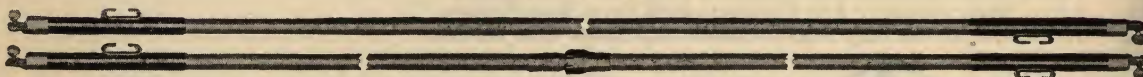
### Chance Adjustable Platforms With Attachments



The use of heat treated aluminum alloy fittings has made possible the addition of twin braces and a reinforcing keel piece to the Chance Adjustable Platform with little increase in weight. Other special features include attachments for converting this platform for tower use or for changing it into a pivot type platform which will rotate through 180 degrees on pole or tower. These pivot attachments—both pole and tower—eliminate the necessity for buying a separate platform. Platforms are equipped with the lightweight, safe locking Chance Chain Tightener. Rope railings 24 inches high may be ordered separately.

No.	Description	Length of Platform Feet	Working Load, End of Platform Pounds	Approx. Weight Pounds
M4901-2	Pole Type Adjustable Platform	6	500	42 $\frac{1}{4}$
M4901-3	Pole Type Adjustable Platform	8	500	49 $\frac{1}{4}$
M4901-11	Adjustable Type Tower Platform Attachment	6 or 8	...	8 $\frac{1}{4}$
M4901-12	Pivot Type Pole Attachment	6	...	28
M4901-13	Pivot Type Pole Attachment	8	...	28 $\frac{1}{2}$
M4901-16	Tower Clamps for Pivot Type Pole Attachment	6 or 8	...	13 $\frac{1}{2}$
M4901-14	Pivot Type Tower Attachment	6	...	30
M4901-15	Pivot Type Tower Attachment	8	...	30 $\frac{1}{2}$
M4901-35	Rope Railing	6	...	12 $\frac{1}{4}$
M4901-45	Rope Railing	8	...	13 $\frac{1}{8}$

### Chance Universal Poles



Chance Universal Poles are designed for attaching a variety of fittings making one tool do the work of several, eliminating the need for carrying a pole for each tool. Notches on heads dovetail with those on individual fittings and connections are easily tightened by hand with the wing screw. Standard lengths are 8 feet or two 4-foot sections spliced. Longer poles may be obtained if desired.

No.	Description	Pole Diameter Inches	Pole Length	Weight Pounds
M1760	With Tie Wire Assistant, One Head	1 $\frac{1}{4}$	8'	3
M1760-1	With Cotter Key Assistant, One Head	1 $\frac{1}{4}$	8'	3
M1760-2	With Tie Wire Assistant and Splice	1 $\frac{1}{4}$	Two 4' Lengths	5
M1760-4	Tie Wire, Cotter Key Assistant, Two Heads	1 $\frac{1}{4}$	8'	3 $\frac{1}{16}$
M1760-6	Tie Wire, Cotter Key Assistant, Splice and Two Heads	1 $\frac{1}{4}$	Two 4' Lengths	5 $\frac{1}{8}$

### Chance Universal Emergency Storm Tools



The Chance Universal Storm Tool is a short length of pole equipped with special insulator skirts. Pole has a universal head on one end and a universal spline fitting on the other for attaching to a standard universal pole. Its purpose is to do hot line work when rain, sleet, or heavy snow make the use of regular tools hazardous. Hoods prevent water stream from running down pole. Tool should be used for a limited time and considered an emergency tool.

No.	Description	For Working on Voltages
M4455-64	Two Insulator Skirt Tool	23 kv.
M4455-65	Three Insulator Skirt Tool	34 kv.

### Chance Wire Tong Saddle and Clamp



This pole attachment for wire tongs used in hot line work is made of heat treated aluminum alloy. It is quickly attached and securely held with the Chance Safety Chain Tightener. A clevis attachment for blocks eliminates binding, for the blocks swing with the wire tong. Clamp has stainless steel liner.

No.	Size Inches	Approx. Weight Pounds
M4740-3	1 $\frac{1}{2}$	8
M4740-4	2	8 $\frac{3}{16}$
M4740-5	2 $\frac{1}{2}$	8 $\frac{3}{8}$
M4740-9	3	8 $\frac{1}{2}$



## Chance Prong and Blade Type Tie Sticks



Fixed Two and Three Prong Tie Sticks with \*Universal Heads on the opposite end are used for manipulating tie wires. They are especially desirable for ties with looped ends and may also be used for pulling disconnects, installing cumalongs, etc. The third prong is a short, stubby finger which aids in making short bends with tie wire.

Fixed Blade Tie Stick with \*Universal Head on the opposite end is primarily used for removing insulator ties which do not have looped ends. Recommended for replacing ties which have had their looped ends kinked or burned off.

Rotary Blade Tie Stick with \*Universal Head on opposite

end handles tie wires with or without looped ends speedily and easily. Swivel action permits full turn on tie wire without releasing contact. A tie wire assistant is attached to the pole for prying up tie wires which do not have looped ends.

Rotary Prong Tie Stick with \*Universal Head on opposite end is used for replacing or removing insulator ties with looped ends. Hook swivels freely to aid in maneuvering tie wire.

\*Universal head on opposite end of pole is used for attaching other line tools making this two tools in one. Available also without universal head.

No.	Description	Pole Length Feet	Weight Pounds
M1855-17	Fixed 2-Prong Tie Stick with Universal Head	8	3 $\frac{3}{4}$
M1855-20	Fixed 3-Prong Tie Stick with Universal Head	8	4
M1855-6	Fixed Blade Tie Stick with Universal Head	8	3
M1855-26	Rotary Blade Tie Stick with Universal Head	8	2 $\frac{7}{8}$
M1855-19	Rotary Prong Tie Stick with Universal Head	8	2 $\frac{7}{8}$

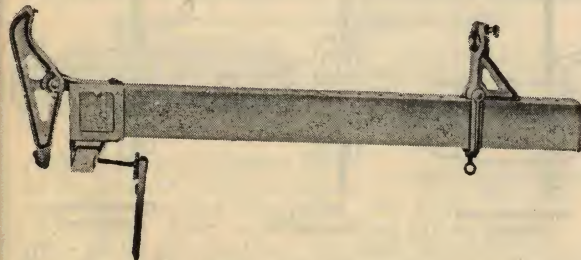


## Chance Lever Type Wire Cutters

Use of aluminum alloy fittings has made it possible to reduce the weight of the 4-foot Chance Lever Type Wire Cutter by two pounds and yet change from spruce to hardwood in the pole for greater strength and rigidity.

Operator is insulated from cutting head by fiber operating rod.

No.	Pole Length Feet	Recommendations	Weight Pounds
M1871-4	4	Cutting Maximum of 2/0 Hard Drawn Copper or ACSR Wire	6 $\frac{1}{4}$
M1871-6	6		6 $\frac{3}{4}$
M1873-4	4	Cutting Maximum of 2/0 Weatherproof Stranded Copper, 4/0 Hard Drawn Copper, or 4/0 ACSR Wire	9 $\frac{1}{4}$
M1873-6	6		11



## Chance Rural Dead End Strain Carriers

This strain carrier simplifies and speeds up changing dead end insulators on transmission lines up to and including 23 kv.

Handles insulators up to 10 inches in diameter.

Semi-corner fitting with clevis at the back for engaging conductor clamps on semi-corner construction may be ordered separately.

No.	Description	Take-Up Inches	SPAN BETWEEN ROCKER —ARM AND BRACKET, IN.— Minimum Maximum	Maximum Working Load Pounds	Approx. Weight Pounds
M1843-6	Strain Carrier for 10-Inch Maximum Insulators	4	17 47	2500	16
M1843-7	Strain Carrier for 10-Inch Maximum Insulators	4	17 71	2500	20
M1843-8	Semi-Corner Fitting	..	.. ..	....	1 $\frac{1}{16}$



## Diamond Steel Spring Toggle Bolts

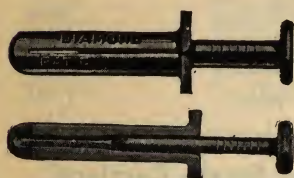


Threaded bolt  
riveted to toggle.

No.	Per 100	Size Inches	Shipping Wt. Lb. per 100	No.	Per 100	Size Inches	Shipping Wt. Lb. per 100
7122	\$6.60	1/8 x2	2 3/4	7154	\$13.00	5/16 x4	12 1/2
7123	6.80	1/8 x3	3 1/4	7155	14.00	5/16 x5	14 1/2
7124	7.00	1/8 x4	3 1/4	7156	15.00	5/16 x6	16 1/2
7133	7.00	3/16 x3	4 1/4	7163	14.00	3/8 x3	17 1/2
7134	7.30	3/16 x4	4 3/4	7164	16.00	3/8 x4	19 1/2
7135	8.40	3/16 x5	5 1/2	7165	18.00	3/8 x5	22 1/2
7136	8.90	3/16 x6	6	7166	20.00	3/8 x6	24 1/4
7143	7.70	1/4 x3	7	7183	22.00	1/2 x3	33
7144	8.00	1/4 x4	9	7184	25.00	1/2 x4	40
7145	9.40	1/4 x5	10	7185	28.00	1/2 x5	44 1/2
7146	9.80	1/4 x6	10 1/4	7186	30.00	1/2 x6	52
7153	12.00	5/16 x3	11	.....	.....	.....	.....

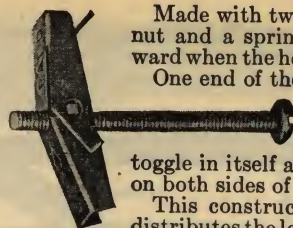
Furnished with round or flat slotted steel or brass toggle heads and brass bolts.

No.	Per 100	Size In.	Wt. Lb. per 100	No.	Per 100	Size, In.	Wt. Lb. per 100
7522	\$6.60	$\frac{1}{8} \times 2$	$1\frac{1}{2}$	7546	\$9.80	$\frac{1}{4} \times 6$	$10\frac{1}{2}$
7523	6.80	$\frac{1}{8} \times 3$	2	7553	12.00	$\frac{5}{16} \times 3$	11
7524	7.00	$\frac{1}{8} \times 4$	$2\frac{1}{4}$	7554	13.00	$\frac{5}{16} \times 4$	$12\frac{1}{2}$
7533	7.00	$\frac{3}{16} \times 3$	$4\frac{1}{4}$	7555	14.00	$\frac{5}{16} \times 5$	14
7534	7.30	$\frac{3}{16} \times 4$	$4\frac{3}{4}$	7556	15.00	$\frac{5}{16} \times 6$	$16\frac{1}{2}$
7535	8.40	$\frac{3}{16} \times 5$	$5\frac{3}{4}$	7563	14.00	$\frac{3}{8} \times 3$	$17\frac{1}{2}$
7536	8.90	$\frac{3}{16} \times 6$	6	7564	16.00	$\frac{3}{8} \times 4$	$19\frac{1}{2}$
7543	7.70	$\frac{1}{4} \times 3$	7	7565	18.00	$\frac{3}{8} \times 5$	$22\frac{1}{2}$
7544	8.00	$\frac{1}{4} \times 4$	9	7566	20.00	$\frac{3}{8} \times 6$	$24\frac{1}{4}$
7545	9.40	$\frac{1}{4} \times 5$	10				



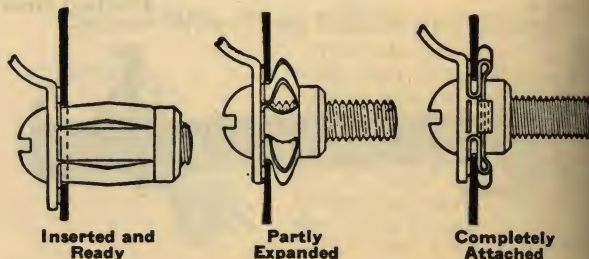
For nailing to concrete, brick or stone. Shields are non-rusting, made of aluminum alloy; made of 1 piece of metal, a single unit which cannot become disarranged. Furnished with heavily galvanized nails.

No.	Per 100	Diam. and Lgth. of Shield In.	Diam. Drill to Use In.	Avg. Load Sus- tained Lb.	Work- ing Load Lb.	Std. Pkg.	Wt. Lb. per 100
4314	\$8.00	$\frac{3}{16} \times \frac{7}{8}$	$\frac{3}{16}$	500	100	100	1
4320	9.00	$\frac{3}{16} \times 1\frac{1}{4}$	$\frac{3}{16}$	650	130	100	$1\frac{1}{8}$
4416	10.00	$\frac{1}{4} \times 1$	$\frac{1}{4}$	1200	240	100	$1\frac{1}{2}$
4420	11.00	$\frac{1}{4} \times 1\frac{1}{4}$	$\frac{1}{4}$	1300	260	100	2
4424	12.00	$\frac{1}{4} \times 1\frac{1}{2}$	$\frac{1}{4}$	1400	280	100	$2\frac{1}{8}$
4520	14.00	$\frac{5}{16} \times 1\frac{1}{4}$	$\frac{5}{16}$	1450	290	100	$2\frac{3}{4}$
4528	16.00	$\frac{5}{16} \times 1\frac{3}{4}$	$\frac{5}{16}$	1500	300	100	$3\frac{1}{2}$
4536	18.00	$\frac{5}{16} \times 2\frac{1}{4}$	$\frac{5}{16}$	1750	350	100	$4\frac{1}{2}$
4544	20.00	$\frac{5}{16} \times 2\frac{3}{4}$	$\frac{5}{16}$	1750	350	100	5
4632	20.00	$\frac{3}{8} \times 2$	$\frac{3}{8}$	2000	400	100	$6\frac{1}{2}$
4652	25.00	$\frac{3}{8} \times 3\frac{1}{4}$	$\frac{3}{8}$	2000	400	100	$8\frac{1}{4}$
4836	30.00	$\frac{1}{2} \times 2\frac{1}{4}$	$\frac{1}{2}$	3000	600	50	$11\frac{1}{2}$
4856	35.00	$\frac{1}{2} \times 3\frac{1}{2}$	$\frac{1}{2}$	4000	800	50	$15\frac{1}{2}$



TYPE **R**—with round head screws. TYPE **F**—with flat head screws and TYPE **M** with mushroom head screws furnished in 1/8-inch diameter only. TYPE **N**—reverse **R** or **F** screw and add nut. TYPE **P**—reverse **R** or **F** screw and add acorn nut. Cap nuts extra.

No.	Per 100	Steel Toggle Heads Only per 100	BOLT SIZE				Size Drill Req. In.	Ship Wt. Lb. per 100
			DIAMETER—In.	Wire Gage No.	Thrds. per In.	Lgth. In.		
7022	\$6.60	\$6.30	$\frac{1}{8}$	6	32	2	$\frac{3}{8}$	13 $\frac{1}{4}$
7023	6.80	6.30	$\frac{1}{8}$	6	32	3	$\frac{3}{8}$	2
7024	7.00	6.30	$\frac{1}{8}$	6	32	4	$\frac{3}{8}$	21 $\frac{1}{4}$
7033	7.00	6.40	$\frac{3}{16}$	10	24	3	$\frac{1}{2}$	33 $\frac{1}{4}$
7034	7.30	6.40	$\frac{3}{16}$	10	24	4	$\frac{1}{2}$	41 $\frac{1}{4}$
7035	8.40	6.40	$\frac{3}{16}$	10	24	5	$\frac{1}{2}$	43 $\frac{1}{2}$
7036	8.90	6.40	$\frac{3}{16}$	10	24	6	$\frac{1}{2}$	51 $\frac{1}{2}$
7043	7.70	7.00	$\frac{1}{4}$	..	20	3	$\frac{1}{2}$	6
7044	8.00	7.00	$\frac{1}{4}$	..	20	4	$\frac{1}{2}$	7 $\frac{1}{4}$
7045	9.40	7.00	$\frac{1}{4}$	..	20	5	$\frac{1}{2}$	81 $\frac{1}{2}$
7046	9.80	7.00	$\frac{1}{4}$	..	20	6	$\frac{1}{2}$	91 $\frac{1}{2}$
7053	12.00	9.00	$\frac{5}{16}$	..	18	3	$\frac{1}{2}$	11
7054	13.00	9.00	$\frac{5}{16}$	..	18	4	$\frac{1}{2}$	13
7055	14.00	9.00	$\frac{5}{16}$	..	18	5	$\frac{1}{2}$	15
7056	15.00	9.00	$\frac{5}{16}$	..	18	6	$\frac{1}{2}$	17



Screw Size....	6-32	8-32	10-24	10-24	10-32	7/16 - 1/2	9/16 - 1 1/2
Per 100.....	<b>\$7.50</b>	<b>7.50</b>	<b>7.50</b>	<b>10.00</b>	<b>7.50</b>	<b>8.50</b>	<b>9.00</b>
Hole Diam.in.	3/8	3/8	3/8	3/8	3/8	1/2	1/2
Length.....in.	3/16	3/16	3/16	1 1/16	3/16	1/2	1 1/2
Wt. per 100 lb.	.7	.7	.7	1.4	.7	.9	1.0
Rapid Attaching Tool.....	each						<b>\$12.50</b>



## Diamond P Lag Screw Expansion Shields



Malleable iron. Prices without lag screw.

Diam. Lag Screw Inches	No.	Per 100	Long Standard			Ship. Wt. Lb. per 100	No.	Per 100	Short Standard			Ship. Wt. Lb. per 100
			O.D. & Drill Size Inches	Length Inches	Shield No. Pkg.				O.D. & Drill Size Inches	Length Inches	Shield No. Pkg.	
3/16	1104	\$15.00	1/2	1 1/2	100	4	1004	\$15.00	3/8	1	100	2
1/4	1105	18.00	5/8	1 3/4	100	5	1005	18.00	1/2	1	100	3
5/16	1106	25.00	3/4	2 1/4	50	11	1006	25.00	5/8	2	50	7
3/8	1108	38.00	3/4	3 1/2	50	17	1008	38.00	3/4	2	50	10
1/2	1110	45.00	7/8	3 1/2	25	21	1010	45.00	7/8	2	50	13
5/8	1112	65.00	1 1/8	3 1/2	25	34	1012	65.00	1 1/8	2	25	21
3/4	1114	95.00	1 1/8	5	25	75	.....	.....	.....	.....	.....	.....
7/8	1116	110.00	1 1/2	5	25	90	.....	.....	.....	.....	.....	.....
1	1118	120.00	1 3/4	8 3/4	20	270	.....	.....	.....	.....	.....	.....

Di-En-Key Expansion Shields  
Malleable Iron

For use in suspension rods for mine hangers, steam and water pipes, sprinkler systems and allied

lines. The smaller sizes are adapted to opera chairs and school furniture work. Furnished either closed back (bottom bearing) as illustrated or open back.

Prices do not include machine bolt.

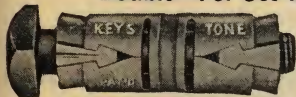
Closed Back No. ....	1604	1605	1606	1608	1610	1612
Open Back No. ....	1704	1705	1706	1708	1710	1712
Diam. Screw...inches	1/4	5/16	3/8	1/2	5/8	3/4
Length.....inches	1	1 1/4	2	2 1/2	2 1/2	3 3/4
O.D.....inches	1/6	9/16	11/16	7/8	1	1 1/4
No. per Box.....	100	100	50	50	50	25
Weight per 100 lb....	2	6	9	17	21	34
Per 100.....	\$15.00	18.00	25.00	38.00	45.00	65.00

## Keystone Single Expansion Shields

For Machine Bolts and Machine Screws



Diam. of Screw or Bolt Inches	No.	Per 100	Length Inches	Outside Diam. and Size Drill to Use, Inches	No. per Pkg.	Shipping Weight, Pounds per 100
1/4	1504	\$15.00	1 1/16	1/2	100	4
5/16	1505	18.00	1 1/2	5/8	100	6
3/8	1506	25.00	1 5/8	11/16	50	9
1/2	1508	38.00	1 7/8	7/8	50	16
5/8	1510	45.00	2	1	25	19
3/4	1512	65.00	2 3/4	1 1/16	25	38

Keystone Interlocking Expansion Shields  
Double—For Use with Machine Bolts

No. per package: 1/4 and 5/16 inch, 100; 3/8 and 1/2 inch, 50; 5/8 to 1 inch inclusive, 25; and 1 1/4 inches, 20.

Diam. Screw or Bolt	No.	Per 100	Shields Only	Length to Use In.	O.D. and Size Drill to Use In.	Wt. Lb. per 100
1/4	1404	\$15.00	1 1/2	1 1/2	5	5
5/16	1405	18.00	1 3/4	9/16	6	6
3/8	1406	25.00	2	11/16	10	10
1/2	1408	38.00	2 1/2	7/8	18	18
5/8	1410	45.00	2 7/8	1	27	27
3/4	1412	65.00	3 1/4	1 1/8	35	35
7/8	1414	95.00	4	1 1/2	85	85
1	1416	110.00	4 1/4	1 5/8	100	100
1 1/4	1420	250.00	6	2 1/8	240	240

## Style B Diamond Super-Grip Expansion Bolts



Shield expanded by long, tapered cone shaped end of bolt. Nut grips work and expands shield. Bolts hot galvanized by the Diamond process. One calking tool furnished in each box of 100 bolts. Prices include bolts.

No.	Per 100	SIZE IN.		O.D. In.	Depth of Hole Inches
		Diam.	Lgth.		
2041A	\$15.50	1/4	1 1/2	7/16	1
2042	15.65	1/4	2	7/16	1
2042A	15.80	1/4	2 1/2	7/16	1
2043	15.95	1/4	3	7/16	1
2052	23.50	5/16	2	1 1/2	1 1/4
2052A	24.00	5/16	2 1/2	1 1/2	1 1/4
2053	24.50	5/16	3	1 1/2	1 1/4
2062A	29.25	3/8	2 1/2	9/16	1 1/2
2063	30.00	3/8	3	9/16	1 1/2
2063A	30.75	3/8	3 1/2	9/16	1 1/2
2064	31.50	3/8	4	9/16	1 1/2
2065	33.00	3/8	5	9/16	1 1/2
2066	34.50	3/8	6	9/16	1 1/2
2083	44.40	1/2	3	3/4	2 1/8
2084	47.00	1/2	4	3/4	2 1/8
2085	48.20	1/2	5	3/4	2 1/8
2086	49.40	1/2	6	3/4	2 1/8
2103	76.40	5/8	3	7/8	3
2104	80.00	5/8	4	7/8	3
2105	83.80	5/8	5	7/8	3
2106	87.60	5/8	6	7/8	3
2124	114.60	3/4	4	1	3 1/8
2125	120.00	3/4	5	1	3 1/8
2126	125.40	3/4	6	1	3 1/8

## Diamond N.Y. Screw Anchors

For Wood Screws



Made of non-corroding, rustproof composition metal. Packed 100 in a box.

No.	Per 100	Diam. of Screw Inches	Length Anchor In.	O.D. Anchor In.	Size Screws	Wt. Lb. per 100
6208	\$4.40	1/8	1 1/2	1/4	5-6-7	1
6210	4.40	1/8	5/8	1/4	5-6-7	1
6212	4.40	1/8	3/4	1/4	5-6-7	1
6216	4.40	1/8	1	1/4	5-6-7	1 1/2
6308	5.00	3/16	1 1/2	5/16	8-9-10-11	1 1/2
6312	5.00	3/16	3/4	5/16	8-9-10-11	2
6316	5.00	3/16	1	5/16	8-9-10-11	3
6320	5.50	3/16	1 1/4	5/8	8-9-10-11	5
6326	6.25	3/16	1 5/8	5/8	8-9-10-11	3 1/2
6412	5.60	1/4	3/4	7/16	12-13-14	3
6416	5.60	1/4	1	7/16	12-13-14	4
6424	8.00	1/4	1 1/2	7/16	12-13-14	6
6432	10.00	1/4	2	7/16	12-13-14	8 1/4
6440	12.00	1/4	2 1/2	7/16	12-13-14	10 1/2
6512	6.25	5/16	3/4	7/16	15-16-17-18	3
6516	6.25	5/16	1	7/16	15-16-17-18	3 1/2
6524	9.00	5/16	1 1/2	7/16	15-16-17-18	6 1/4
6532	9.50	5/16	2	7/16	15-16-17-18	8 1/4
6616	9.00	3/8	1	9/16	20-22-24	6 1/2
6620	9.00	3/8	1 1/4	9/16	20-22-24	8 1/2
6632	10.00	3/8	2	9/16	20-22-24	11
6832	25.00	1/2	2	3/4	26-28-30	21 3/4
6840	30.00	1/2	2 1/2	3/4	1/2-In. Lag	28
6932	30.00	5/8	2	7/8	5/8-In. Lag	25
6956	50.00	5/8	3 1/2	7/8	5/8-In. Lag	42



Diamond Calking Anchors

For Use with Machine Screws



Cat. No.	Per 100 Without Screws	Diameter Bolt or Screw, In.	SIZE, HOLE INCHES		Std. Pkg.	Weight Pounds per 100
			Diam.	Depth		
3020	\$3.80	No. 6-32	3/16	3/8	100	3 1/2
3025	4.50	No. 8-32	5/16	1/2	100	11 1/2
3030	4.95	No. 10-24	3/8	5/8	100	2
3035	6.50	No. 12-24	7/16	3/4	100	3 1/2
3040	7.20	1/4-20	1/2	7/8	100	5 1/2
3050	9.75	5/16	5/8	1	50	10 1/2
3060	12.00	3/8	3/4	1 1/4	50	16
3070	15.00	7/16	7/8	1 1/2	50	21
3080	15.00	1/2	1	1 1/2	50	21
3100	25.00	5/8	1 1/8	2	50	41
3120	50.00	3/4	1 1/4	2 1/4	50	64

Diamond Calking Tools



One tool packed in each box of anchors.

Diamond Multi-Size Screw Anchors



Designed to accommodate in one anchor several diameters of wood screws. Made from high grade malleable iron.

Packed 100 in a box.

No.	Per 100	Designating Sizes	For Wood Screws No.	Lgth. In.	Drill Size		Wt. Lb. per 100
					Inches	Inches	
5212	\$5.00	Nos. 6 to 8x 3/4"	6 to 8	3/4	1/4	1	1
5224	5.60	Nos. 6 to 8x1 1/2"	6 to 8	1 1/2	1/4	1 3/4	1 3/4
5312	5.60	Nos. 10 to 14x 3/4"	10 to 14	3/4	5/16	1 1/2	1 1/2
5316	5.60	Nos. 10 to 14x1"	10 to 14	1	5/16	1 3/4	1 3/4
5324	8.00	Nos. 10 to 14x1 1/2"	10 to 14	1 1/2	5/16	2 1/2	2 1/2
5516	6.25	Nos. 16 to 18x1"	16 to 18	1	3/8	2 3/4	2 3/4
5524	9.00	Nos. 16 to 18x1 1/2"	16 to 18	1 1/2	3/8	4	4
5628	10.00	Nos. 20 to 24x1 3/4"	20 to 24	1 3/4	7/16	5 1/4	5 1/4

Diamond N Drills



No. 700 4-Point or Star Drill



No. 710 Diamond or Single Point Drill

Made of high grade octagon drill rod. Quality of steel is tested for uniformity. Heat treatment is scientifically conducted; heats for hardening and drawing the temper are determined by pyrometer and thermometer.

Diam. Drill In.	8-In. Length		12-In. Length		18-In. Length		24-In. Length	
	Per Doz.	Wt. Lb. per Doz.	Per Doz.	Wt. Lb. per Doz.	Per Doz.	Wt. Lb. per Doz.	Per Doz.	Wt. Lb. per Doz.
1/4	\$8.25	1 1/8	\$8.50	1 3/4	\$11.00	3	\$13.50	3 1/2
5/16	8.25	1 1/2	8.50	2 1/4	11.00	3 7/8	13.50	5 1/8
3/8	8.25	2 1/4	8.50	3 1/2	11.00	5	13.50	7 3/8
7/16	8.70	3 3/8	9.00	4 3/4	11.50	7	14.00	9
1/2	9.65	3 3/4	10.00	4 3/8	12.50	7 3/4	15.00	10 1/4
9/16 & 5/8	11.65	5 1/2	12.00	8 1/2	15.00	13 3/4	17.50	18 1/4
11/16 & 3/4	13.70	6 3/4	14.00	10 1/2	17.50	16 3/4	20.00	22 1/4
13/16 & 7/8	15.30	8 3/4	16.00	12 1/2	20.00	20 1/2	22.50	27 1/2
1	17.00	10	18.00	19	22.50	30	25.00	40
1 1/8	23.00	16	24.00	25	28.00	42	32.00	54
1 1/4	.....	.....	30.00	25	35.00	42 1/2	40.00	57
1 3/8	.....	.....	40.00	33	45.00	53	50.00	72
1 1/2	.....	.....	50.00	33	56.00	54	62.00	72
1 5/8	.....	.....	60.00	40	66.00	63	72.00	84
1 3/4	.....	.....	75.00	44 1/2	81.00	70	87.00	93
1 7/8	.....	.....	90.00	50	97.00	80	104.00	106
2	.....	.....	105.00	52	112.00	81	120.00	108
2 1/4	.....	.....	135.00	58	145.00	83	165.00	110
2 1/2	.....	.....	165.00	75	175.00	119	195.00	158

Can be furnished with tapered shanks to fit electric hammers. Supplied on order in lengths up to 6 feet for rock drilling.

No. 720 Diamond Di-Forge Twist Drills



Forged from a solid bar of Vanadium tool steel. For use with a hand or electric hammer. Rotates clockwise if used with hand hammer; rotates continuously if used with electric hammer. May be used with Diamond Styles A, B, and C.

Diam. In.	Per Dozen	Length Overall Inches	Depth Hole Inches	Wt. Lb. per Dozen
3/16	\$10.80	2 3/4	1 3/8	1 1/2
1/4	10.80	3 1/4	1 3/4	3/4
5/16	12.80	4 1/4	2 1/2	1
3/8	14.80	5	3	1 1/4
7/16	18.80	5 1/4	3 1/4	1 1/2
1/2	22.80	5 3/8	3 1/4	2
9/16	26.80	5 1/2	3 3/4	2 1/2
5/8	28.80	5 3/4	4	2 1/2

No. 730 Diamond N Drill Points



Made of steel.

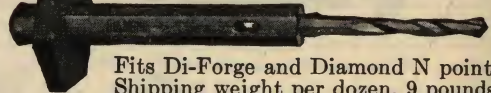
Drills are carefully tempered to insure sufficient hardness at the point to withstand the wear of cutting and the temper is drawn away toward the shank, so as to produce a softer steel where it enters the handle to prevent its breaking off at that point.

May be used with Diamond Drill Holders Styles A, B and C and Diamond Hammer Drills.

Size Inches	Per Dozen	Length Inches	Hole Inches	Depth per Dozen	Wt. Lb. per Dozen	Size Inches	Per Dozen	Length Inches	Hole Inches	Depth per Dozen	Wt. Lb. per Dozen
1/4	\$8.50	4 1/2	2	1 1/4	9 1/16 & 5/8	\$12.00	6 1/4	5	3 3/4	5 1/2	4 1/2
5/16	8.50	4 1/4	2	1 1/4	11/16 & 3/4	14.00	6 1/2	5 1/2	6	6	6
3/8	8.50	4 1/4	2	1 1/2	13/16 & 7/8	16.00	7	6	7 1/4	7	7 3/4
7/16	9.00	4 7/8	3 3/4	2	1	18.00	7 1/4	7	7 3/4	.....	.....
1/2	10.00	5	4	2	.....	.....	.....	.....	.....	.....	.....

No. 745 Style A Diamond Drill Holders

Forged from solid bar of Vanadium tool steel. Has a rubber guard.



Fits Di-Forge and Diamond N points. Shipping weight per dozen, 9 pounds.

No. 745.....per dozen \$27.00

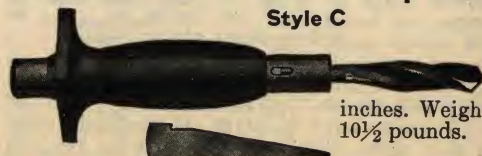
No. 750 Style B Diamond Drill Holders



A hand drilling tool made of steel. Either Diamond N or Di-Forge drill points may be used. Weight per dozen, 8 1/2 pounds.

No. 750, without Points.....each \$2.00

No. 755 Diamond Rubber Grip Drill Holders Style C



Overall length, 6 1/4 inches. Weight per dozen, 10 1/2 pounds.

No. 755.....per dozen \$48.00



## Peirce Lead Sleeve Expansion Bolts

Galvanized



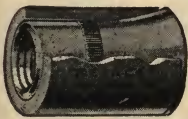
Consists of a steel bolt with a wedge or cone shaped head, tapering toward shank and provided with a lead sleeve.

No.	Per 100	Bolt Size In.	Overall Length In.	Drill Hole Diam. In.	Shipping Wt. Lb. per 100
1	\$9.73	1/4	1 3/4	1/2	7.7
2	9.96	1/4	2	1/2	8.8
3	10.34	1/4	2 1/2	1/2	8.8
4	12.49	1/4	3 1/4	1/2	11.0
4A	14.15	1/4	4	1/2	12.1
4B	17.69	1/2	5	1/2	13.2
5	17.31	3/8	2 1/2	5/8	16.5
6	18.57	3/8	3	5/8	17.6
7	19.84	3/8	3 1/2	5/8	18.7
8	23.25	3/8	4 1/2	5/8	20.9
9	23.61	3/8	5	5/8	22.0
10	25.14	3/8	5 1/2	5/8	23.1
11	26.03	1/2	2 1/2	7/8	45.1
12	30.59	1/2	3 1/2	7/8	51.7
13	32.38	1/2	4	7/8	55.0
14	33.12	1/2	4 1/2	7/8	58.3
15	35.25	1/2	5	7/8	61.6
16	36.66	1/2	5 1/2	7/8	64.9
17	39.06	1/2	6 1/2	7/8	68.2
18	43.86	1/2	8	7/8	80.3

## Extra Lead Sleeves

No. ....	22	23	24
Per 100 .....	\$3.27	5.29	16.19
For Bolt Diameter .....	inches 1/4	3/8	1/2
Overall Length .....	inches 9/16	3/4	1 1/2
Ship. Weight Per 100 .....	pounds 3.3	6.6	24.2

## Peirce Expansion Nuts

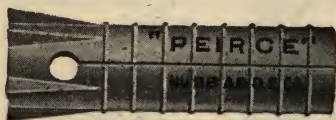


Installed independently, and tapped to receive the bolt.

No.	Per 100	Cone Material	Mach. Screw No. or Size In.	Diam. Drill In.	Min. Depth Hole In.	Shipping Wt. Lb. per 100
6200	....	Brass	6	1/4	3/8	.6
6202	....	Brass	8	3/16	1/2	1.0
6204	....	Brass	10	3/8	1/2	1.9
6206	....	Brass	12	7/16	3/4	2.6
6208	....	Brass	1/4	1/2	3/4	3.8
6210	....	Brass	5/16	5/8	7/8	7.7
6212	....	Steel	3/8	3/4	1 1/4	14.3
6214	....	Steel	1/2	7/8	1 3/8	22.0
6216	....	Steel	5/8	1 1/8	2	45.1
6220	....	Steel	3/4	1 3/8	2 1/8	75.9

Prices upon application.

## No. 31 Peirce Expansion Shields



Used with wood or lag screws for masonry attachments.

Size screw, Nos. 20 and 22. Shield: diameter, 1/2 inch; length 2 inches.

Shipping weight per 100, 12 pounds.

No. 31 . . . . . per 100 \$18.70

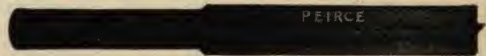
## Peirce Hammer Drills



Holes may be drilled in masonry with this drill in about one quarter of the time required by ordinary methods. The hazard of injured hands is also completely eliminated. Jammed drill points are quickly removed and most important, holes are neatly and quickly drilled. The outer end of the hammer drill is hollow for tamping lead sleeves. Chuck takes all sizes of drills.

No. ....	50	53
Per 100 .....	\$2608.53	2778.28
For Tamping Bolt .....	inches 1/4	3/8
Ship. Weight per 100 .....	pounds 825	880

## Peirce Drill Points



Made of fine tool steel, carefully tempered to the proper hardness and toughness. Two inches of the point is contained in the chuck.

Special sizes up to 1-inch diameter and any length can be furnished to fit Peirce Hammer Drill Chucks.

No.	Per 100	Drill Diam. In.	Overall Drill Length In.	Bolt Diam. In.	Shipping Wt. Lb. per 100
56	\$156.85	3/8	4	3/16	22
56-A	186.70	7/16	4	3/16	22
57	156.85	1/2	4	1/4	25
58	178.60	1/2	6	1/4	36
59	384.03	1/2	12	1/4	72
60	289.16	5/8	6	3/8	42
61	578.20	5/8	12	3/8	90
62	404.13	3/4	6	7/16	52
63	809.19	3/4	14	7/16	148
64	532.66	7/8	6	1/2	63
65	1066.13	7/8	12	1/2	150

## No. 55 Peirce Hand Chucks



Chuck allows the use of Peirce Drill Points with the old method of hand-and-hammer drilling. Similar to chuck of Peirce Hammer Drill. Will fit any Peirce Drill Points.

No. 55, Ship. Wt. 285 Pounds.....per 100 \$351.65

## Peirce Tamping Tools



Used for tamping lead sleeves into masonry.

Nos. 47, 48 and 49 are straight slotted for use on hooks and similarly shaped items.

Nos. 67, 68 and 69 are straight for standard straight bolts or screws.

No. ....	47	48	49	67	68	69
Per 100 .....	\$51.10	73.59	107.88	110.15	113.58	126.11
Diam. Expansion Bolt .....	in. 1/4	3/8	1/2	1/4	3/8	1/2
Overall Length .....	in. 6	6	8	6	6	8
Ship.wt.per100 .....	lb. 30	64	110	37	54	182



### Unique Gasoline and Kerosene Blow Torches



No. 3



No. 7

For heavy duty hard service under severe weather conditions and applications requiring large volume of flame and extra heat.

Flame,  $1\frac{1}{2} \times 12$  inches, 2000°F. Flame can be regulated to small jet.

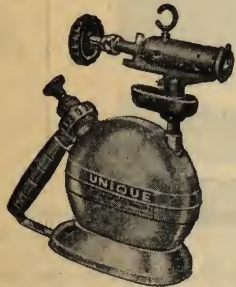
Closing the valve forces slender cleaning needle through orifice, keeping it clean and full size.

Has replaceable, threaded needle and orifice block, and removable channel plugs for cleaning, and powerful, dependable pump.

	Gasoline		Kerosene	
	3-L	7	3-K	7-K
No. ....	3-L	7	3-K	7-K
Each.....	\$13.33	16.66	16.66	20.00
Tank Capacity.....	quarts 1	2	1	2
Weight.....	lb. $4\frac{1}{2}$	$5\frac{1}{2}$	$4\frac{1}{2}$	$5\frac{1}{2}$

### No. 0 Unique Gasoline Blow Torches

#### 1-Pint Capacity



A compact torch for the tool kit; for use in places hard to get at. Produces an intense heat of 1900°F. plus. Burns in any position. Fine flame control. Closing fuel valve forces the steel cleaning needle through orifice, clearing it of foreign particles. The needle, threaded orifice block and all other parts are replaceable. Channels fitted with removable threaded plugs for cleaning.

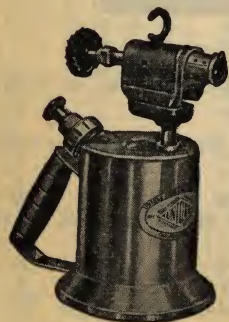
Steel tank, brazed fittings, and welded construction for safety. Top filler opening. Oval tank is  $2\frac{3}{4}$

inches through center; 5-inch circle. Size flame,  $1 \times 6$  inches. Weight, 3 pounds. Generator wind-shield included.

No. 0.....each \$7.33

### No. 1 Unique Gasoline Blow Torches

#### 1-Quart Capacity



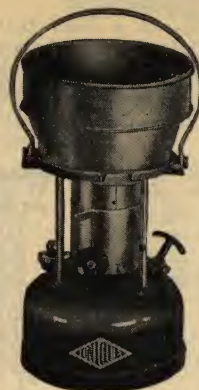
A medium, small flame torch. Produces an intense heat of 1900°F. plus. Burns in any position. Fine flame control. Closing fuel valve forces steel cleaning needle through the orifice, clearing it of foreign particles. Cleaning needle, orifice block and all parts replaceable at small cost. Channels are fitted with removable threaded plugs for cleaning.

Steel tank, powerful pump, brazed fittings, and welded bottom for safety. Filled through bottom funnel filler. Size flame,  $1 \times 6$  inches.

Weight,  $3\frac{3}{4}$  pounds.

No. 1.....each \$7.33

### No. 50 Unique Heavy Duty Gasoline Public Utility Furnace



With Style A Hood

Melts 50 pounds of solder in 10 minutes. Flame, 2000°F,  $\frac{1}{2} \times 12$ -inch length. Extra fine flame control which holds steady without change.

Generator is made of bronze alloy casting, fitted with replaceable orifice block and removable channel plugs.

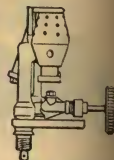
Tank is made of heavy steel, welded throughout.

Top-Plate has ample support for large kettles and solder pots up to 8-inch size. Handle locks to support solder iron.

Hood. Style A is standard and has open top. Style B hood (for solder irons) may be substituted and accommodates irons up to 12 pounds per pair. Heating time, 4 minutes. Style A hood is furnished as standard.

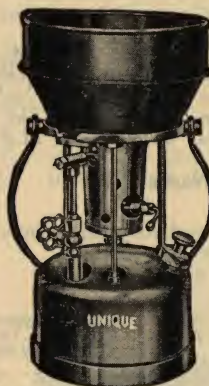
Tank capacity,  $1\frac{1}{2}$  gallons. Dimensions,  $9\frac{1}{2} \times 13$  inches.

No. 50, Weight 15 Pounds.....each \$22.33



No. 50 Generator

### No. 58 Unique Kerosene Heavy Duty Public Utility Furnaces



Melts 50 pounds of solder in 10 minutes. The figure 8 generator burns the fuel without carbon formation, producing a clean flame of 2000°F.

Orifice is cleared of foreign particles by turning flame control valve while furnace is burning.

Tank is made of heavy steel, welded throughout.

Top-Plate has ample support for large kettles and solder pots up to 8-inch size. Handle locks to support solder iron.

Hood. Style A hood is standard and has open top. Style B hood (for solder irons) may be substituted and accommodates irons up to 12 pounds per pair. Heating time, four minutes.

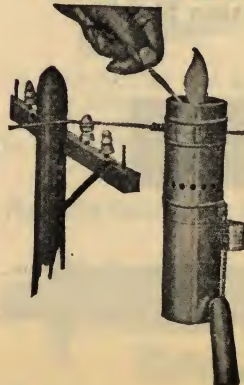
Tank capacity,  $1\frac{1}{2}$  gallons. Dimensions,  $9\frac{1}{2} \times 13$  inches.

No. 58, Weight 15 Pounds.....each \$22.33



Figure 8 Generator and Orifice Scraper

### No. 3420 Klein's Staysalite Linemen's Torches



This torch burns alcohol without odor or noise and stays lit in a wind.

Light and small and is lit or extinguished in a moment, as wanted. Has no adjusting parts.

The Staysalite is carried in the lineman's belt and eliminates the ground man; can be hung directly on the wire under joint to be soldered.

Provided with a cup for holding soldering paste. Can be used as a small heater or for soldering iron.

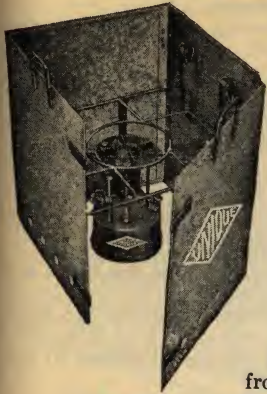
Weight,  $1\frac{1}{4}$  pounds.

No. 3420.....each \$13.30

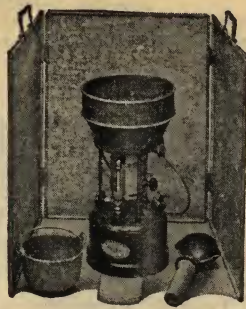


## Unique Safety Folding Shields

For Furnaces and Firepots



No. 50



No. 50-C

Protects workers and by-standers from hot materials and shields furnace from wind. Affords a protective spot for tools and accessories.

Galvanized iron with edges rolled around 1/4-inch rod. Rust proofed. No sharp corners. Folds flat for carrying and storing.

No. 50 is a four-panel shield with welded steel grate and supporting brackets for large pots and kettles. Grate hooks on bracket to hold shield in open position.

No. 50-C is a three-panel shield without grate

No. 50 Weight, 15 pounds.....each \$16.66  
No. 50-C Weight, 27 pounds.....each 8.00

## Unique Air Cooled Balanced Ladles



Wood Handle (Round, 1 1/8-Inch Diameter)  
Cut Away to Show Method of Attaching

Comfortable insulated, "close to the bowl" grip eliminates strain, and makes it easy to direct and control the flow of molten metal.

Made of pressed steel and treated so that solder cannot stick.

Wood handle can be easily and inexpensively replaced.

Bowl Diameter.....inches	2 1/2	3	3 1/2	4
Each.....	\$1.40	1.50	1.70	1.80
Capacity.....pints	1 1/2	1 3/4	2 1/8	2 1/2
Weight.....ounces	10	12	14	16

## Unique Air-Cooled Solder-Copper Handles



Shank contact with wood is minimized. This safe handle won't let go—the piano wire grip contracts and expands with the shank—a tight grip always. Simply drive the handle over the pointed shank—no special tools required.

No.....	1	2
For Copper Shanks.....inches	1/2 to 3/8	3/8 to 1/2
Wood Handle Dimensions.....inches	1 1/4 x 6	1 1/2 x 6
Each.....	\$1.00	1.20

## Soldering Coppers



Made of drawn copper bolts of the best quality and shaped like a hammer. By this method they are as solid as metal can be made, are better heat retainers and should not be compared with such as are cast from copper ingots.

Weight, per Pair.....lbs.	3/4	1	1 1/4	1 1/2
Soldering Coppers.....each				

## Ideal Commutator and Slip Ring Resurfacers

### Commutator Resurfacers

**Extra Coarse.** Exceptionally fast cutting. For "hogging" off excessive copper or other metals.

**Coarse.** Fast cutting. For use where a fair amount of copper or other material is to be removed.

**Medium.** For general utility, high mica, small ridges and burns.

**Finish.** For use after three grades above, bringing the surface to a velvet which quickly becomes a gloss after the brushes have been lowered. Used particularly for periodic application, and for the removal of small burns and ridges, immediately after their appearance.

**Polish.** An excellent grade, which gives a burnished finish. Made of an exceedingly fine, 220-grain aggregate.

### No. 81 Slip Ring Resurfacers

Designed especially for grinding steel and cast iron slip rings. This resurfacer is a slight conductor and should be used with the current off and no load on machine.

**Coarse No. 81.** For rapid grinding and for removing large quantities of material.

**Medium No. 81.** For general utility and removing small pits and burns.

**Finish No. 81.** For final application after Coarse No. 81 or Medium No. 81 has been used.

### Pencil Type (No Handle)

For fans or signal motors, auto generators, locomotive headlight motors and other fractional horse power motors.

### Straight Handle Type

Used primarily on inaccessible types of commutators on small or enclosed motors.

There are four standard sizes, but other larger sizes can be made to order.

### Vertical Adjustable, Tramway and Railway Handle Types

These three types of resurfacers are for use on medium size motors and small generators.

**Vertical Adjustable Handle.** The knob handle is fastened permanently. The extra rod handle makes this type universal to meet practically all conditions. The knob is drilled on two sides, also on the top, so that the rod handle can be adjusted to any one of three positions.

**Tramway Handle.** This is a stout handle with a good grip, permanently mounted at a 45° angle.

**Railway Handle.** This is a stout handle with a good grip, permanently mounted in a vertical position.

### Wood Block Handle or Tool Type

For use in Ideal Precision Grinders or any type of lathe truing device. Equipped with wood block handle for clamping rigidly into the grinder.

### U Handle and Saw Handle Types

These types are for use on large motors, small rotary converters, motor-generator sets, telephone generators, etc.

**U Handle.** Preferred when the stone is to be used with the handle parallel to the brush arm.

**Saw Handle.** Desirable when the stone is to be used with the handle at right angles to the brush arm.

Double U Handle and Double Saw Handle Types are also available.

### Slip Ring Types

To secure the most efficient grinding results, specify material from which rings are made, such as iron, steel, bronze, or brass. When space permits, use a resurfacer, about 1 inch wider than the ring, bridging over the entire width. Resurfacer should be three times as long as the flat spots as bridging over them assures a perfect job.

### "2-in-1" Pocket Type

For all-around shop practice. Made up in any combination of the five grades, two grades being cemented together.

Prices and Complete Information Sent on Request



## Condensed Listing of Ideal Commutator Motor Winding and Repair Shop Tools

### Brush Seaters

For seating carbon, graphite or metal-composition brushes.  
Standard size: length,  $4\frac{3}{4}$  inches; face,  $1\frac{1}{8} \times \frac{5}{8}$  inch.  
Per Dozen..... \$6.00

### Portable Precision Grinders

**No. 24-004 Perfect Model.** A high grade precision tool for use with Ideal Tool-Type Resurfacers. Adaptable to all open type commutators and rings. Furnished in any one of fifteen different lengths, ranging from 6 to 36 inches inclusive by 2-inch variations.

Shipping weight, 12-inch size, 45 pounds.

**No. 24-004, with 12-Inch Bed Plate, Including Brush Arm Supports.**.....each \$110.00

**No. 24-020 Ideal Model.** Designed especially for use in close quarters or on machines with outboard fans, large bearing pedestals, or close end frames. Furnished in the same lengths as the No. 6 Perfect Model.

Shipping weight, 12-inch size, 45 pounds.

**No. 24-020, with 12-Inch Bed Plate, Including Brush Arm Supports.**.....each \$140.00

**No. 24-033 Midget Model.** Designed especially for use on small commutators having a face width of 8 inches or less, as well as for use on medium-sized slip rings. For use with Ideal Tool-Type Resurfacers. Compact design allows working in small spaces.

Shipping weight, 20 pounds.

**No. 24-033, with Brush Arm Supports.**.....each \$72.50

### Commutator Turning Tool Heads

An excellent tool for removing the bead or ridge of copper left on the inside of the commutator next to the riser.

Net weight, 7 pounds.

**No. 24-045, for Perfect and Ideal Model Precision Grinders.**.....each \$31.50  
**No. 24-046, for Midget Model Precision Grinders.**.....each 27.50

### No. 25-029 Universal Power Mica Undercutters

Cuts smoothly without vibrations. May be used in space only  $2\frac{3}{4}$  inches wide.

Weight, including motor, 52 pounds.

Complete with Standard 115 Volt A.C. 60 Cycle Motor.....each \$140.00  
Complete, but without Motor; with Motor Shaft Connection.....each 120.00

If desired, other voltages and cycles can be furnished at extra charge; also undercutters for d.c.

### No. 25-023 Shop Type Undercutters

This undercutter is light enough for easy handling, and sturdy enough for continual heavy duty undercutting.

Net weight of head only,  $2\frac{3}{4}$  pounds.

**No. 25-023, without Motor.**.....each \$120.00

### Direct Drive Undercutters

Intended primarily for field use, but the rugged, sturdy design makes this undercutter suitable also for shop use.

Weight, with 8-foot cord,  $5\frac{3}{4}$  pounds.

**No. 25-001, with 115V. Universal Motor.**.....each \$90.00  
**No. 25-002, with 230V. (Also 250-Volt) Universal Motor.**.....each 98.00

### Commutator Saws and Milling Cutters

Made of Special No. 1 High Speed Steel. Available in all types and sizes, not only for the Ideal Undercutter, but any type of undercutter. Available in outside diameters from  $\frac{1}{4}$  to  $1\frac{1}{2}$  inches inclusive. Prices on application.

### Slotting Files

Specially designed and constructed for commutator use. Weight per dozen, 1 pound.

**No. 20-007, Large 8-Inch Type.**.....each \$1.06  
**No. 20-009,  $9\frac{1}{2}$ -Inch Single End Type (Specify Draw-Cut or Double-Cut).**.....each .89

### No. 20-006 Hand Type Commutator Mica Slotters and Scrapers

Designed for use on small commutators, and for plants which do not have sufficient work for a power driven unit.  
**No. 20-006.**.....each \$2.95

### Balancing Ways

Indispensable for the static balancing of motor armatures, crank shafts, pulleys, fly wheels, etc.

No.	19-006	19-007	19-008
Each.....	\$48.83	55.89	37.36
Capacity.....pounds	1000	1000	400
Approximate Shipping Weight.....pounds	13	48	108

Longer shafts can be furnished at slight extra charge.

### Growlers

Used to quickly locate grounds and shorts.

**Type U-2.** Used as an external growler for armatures and as an internal growler for stators.

**Type S.** Contained in oblong cases; made in two sizes, with and without meters.

**Type F.** Made with a built-in feeler, and shaped to test armatures and stators.

Specifications and prices will be furnished on request.

### No. 41-001 Insulation Testers

Indicates in a second whether or not there is a short, ground or broken wire. Suitable for testing insulation of low voltage equipment. Capacity, 500 to 2500 volts.

For 115 volts, 50-60 cycles. Weight, 15 pounds.

**No. 41-001.**.....\$55.89

### No. 16-003 Armature Winding Heads

Winds small universal, shaded pole, two pole d.c. or repulsion induction motor armatures.

Net weight of head, 2 pounds.

**No. 16-003.**.....each \$60.00

### Coil Winder Heads

**No. 16-002 Midget Model.** For making coils  $4 \times 1\frac{1}{8}$  inches minimum up to  $8\frac{1}{2} \times 6\frac{1}{2}$  inches maximum.

Weight, 10 pounds.

**No. 16-002.**.....each \$61.77

**No. 16-001 Universal Model.** Winds coils up to  $13 \times 16\frac{1}{2}$  inches. Weight, 35 pounds.

**No. 16-001.**.....each \$75.89

### No. 15-028 Coil Winder Drives

Gives an infinite number of driving speeds between 120 and 650 rpm. by moving control lever.

Weight, approximately 180 pounds.

**No. 15-028, Complete, 115V. 60 Cycles.**.....each \$464.71

### No. 16-004 Armature Winding Yokes

Winds any type armature with a shaft 9 to 19 inches long. Weight, 28 pounds.

**No. 16-004.**.....each \$85.29

### No. 16-006 Armature and Stator Holders

Ideally suited for holding work while soldering commutator leads, inserting insulation, inserting wedges, banding armatures, rewinding, removing and inserting coils on stators or armatures, etc.

Approximate shipping weight, 40 pounds.

**No. 16-006.**.....each \$40.59

### No. 45-070 Brush Type Wire Strippers

Cleans enamel wire rapidly. Cleanly strips cotton and enamel, silk and enamel, string asbestos and similar types of light insulation from round wire, flat or rectangular wire, or solid or stranded wire.

Net weight, approximately 50 pounds.

**No. 45-070 Complete, 115V., 60 Cycles.**.....each \$223.53

### No. 45-009 Rotary Type Wire Strippers

This powerful, motor-driven wire stripper is needed wherever volume stripping is done. Strips wire up to  $\frac{1}{2}$ -inch outside diameter. Net weight, 45 pounds.

**No. 45-009 Complete.**.....each \$147.06  
**No. L-2440, Extra Blades.**.....per set 3.95



## National Carbon Brush Assortments

### For Fractional Horsepower Motors



Brushes for vacuum cleaners, fans, vibrators, electric ironers, washing machines, sewing machines, food and drink mixers, heat regulators, pumps, electric tools, cash registers, and office appliances.

Container is designed for effective counter or store display.

All brushes and springs are of the finest quality and will take care of replacement

on fractional horsepower motors (a.c., d.c., and Universal) used on the popular makes of home, office and shop appliances and equipment.

Sizes range between  $\frac{5}{32}$  and  $\frac{5}{16}$ -inch square with 10 intermediate sizes of round and rectangular brushes including three types of brushes with shunts, springs and terminals. Springs are made of the best phosphor bronze wire.

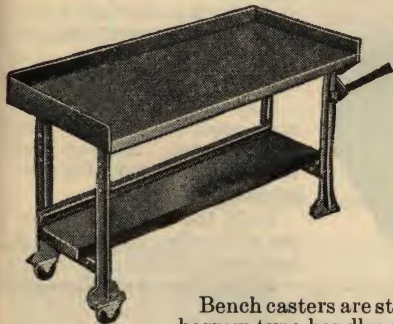
**No. 40 Assortment.** Contains 102 brushes of 17 types and sizes (3 sizes complete with shunts, springs, and terminals) and 55 springs in 3 sizes.

**No. 40 Assortment Complete**.....each **\$8.50**

**No. 55 Assortment.** Contains 198 brushes of 17 types and sizes (3 sizes complete with shunts, springs, and terminals) and 100 springs in 3 sizes.

**No. 55 Assortment Complete**.....each **\$14.50**

## No. 2560 Lyon Portable Work Benches



Used by maintenance men, millwrights, mechanics, and supervisors of mobile assembly and production lines. All the features of Lyon steel top work benches are contained in portable benches and all standard accessories may be used.

Bench casters are stationary type. Wheelbarrow type handles slide under bench top and out of the way when not in use. Green baked-on enamel finish. Length, 72 inches. Depth, 34 inches.

**No. 2560, Weight, 218 Pounds**.....each .....

## No. 3020 Lyon Tool Cabinets

Designed to hang on a wall or be used on a bench. Back and sides punched on 1-inch centers for  $\frac{1}{2}$ -inch pegs.



Tamper proof hinges. Strong three point latching device.

Complete with shelf, socket tray and ten adjustable pegs.

Green baked enamel finish.

No.....	<b>3020</b>
Each.....	<b>\$14.75</b>
Width.....inches	24
Depth.....inches	12
Height.....inches	33
Weight.....pounds	47.8

## Lyon Shop Desks

### Standing Type



Welded construction provides a smooth, firm surface for working. Shelf is adjustable. Sloping top 43 inches high at front. Drawer, 24x28x3 $\frac{1}{2}$  inches, has roller bearing slides, brass handles, built-in lock. Two hooks on right side.

Green baked-on enamel finish.

No.....	<b>2250</b>	<b>*2254</b>
Each.....	<b>\$26.95</b>	<b>33.20</b>
Width.....in.	34 $\frac{1}{2}$	34 $\frac{1}{2}$
Depth.....in.	30	30
Ht.....in.	53	53
Wt.....lb.	130.9	128.3

\*Same as No. 2250 plus swivel casters. Front casters have foot controlled locking lever.

## No. 2252 Counter Type



Same top and drawer as No. 2250. When used on counter or bench, desk is at convenient height to work while standing or seated on a stool.

Green baked-on enamel finish.

No.....	<b>2252</b>
Each.....	<b>\$20.75</b>
Width.....inches	34 $\frac{1}{2}$
Depth.....inches	30
Height.....inches	17
Weight.....pounds	79.7

## Lyon Tool Stands



No. 3107

Used in machine shops, printing plants, assembly lines, stock rooms, repair shops, garages, toolrooms, service stations, maintenance departments, laboratories, restaurants and vocational schools.

In factories, used as work stands around production machines, mountings for small tools, parts containers for assembly lines, etc.

In restaurants, used as salad tables; in laboratories, as portable work centers; in printing plants, as ink stands; in garages, as tool and part carriers, etc.

Available in stationary and portable models.

Trays attach at each corner with four bolts, all are interchangeable and punched for attachment of drawers. Legs are formed from band steel, curled at bottom to hold glide feet or swivel type casters.

Drawers have padlock attachment, padlock not furnished and a sliding tool tray.

Green baked-on enamel finish.

For further information on  
the complete line of  
**LYON SHOP EQUIPMENT**  
consult your nearby Graybar office.



**No. 3160 Lyon Tool Toters**

Used in machine shops, power plants, plumbing shops, electrical shops, toolrooms, printing plants, welding shops, and maintenance departments.

Built-in drawers operate in a closed case that strengthens entire totter and assures continued drawer alignment. Padlock hasp on cross piece locks both drawers at one time, padlock not furnished. Top and bottom trays have 1½ inch flange. Steel swivel casters. Riveted construction. Width, 18 inches. Depth, 24 inches. Height, 34½ inches. Drawer size, 15x23x4½ inches.

Green baked-on enamel finish. Weight, 78 pounds.

No. 3160.....each **\$16.65**

**Style H Lyon Steel Stacking Boxes**

For heavy loads from 75 to 125 pounds and to withstand hard usage.

Made of 18-gage steel.

Shallow V shaped runners make it ideal for gravity conveyor use. Tapered for efficient stacking. Stacking rail at each end strengthens entire box.

No.	3600	3601	3602	3603
Each.....	<b>\$2.25</b>	<b>2.40</b>	<b>2.35</b>	<b>2.55</b>
Width.....inches	12	12	12	12
Length.....inches	18	18	21	21
Height.....inches	6	6	6	6
Finish.....	None	Green	None	Green
Weight.....pounds	12.5	12.5	13.8	13.8

**Style R Lyon Steel Stacking Boxes**

For handling and storing medium loads. Particularly rigid when stacked because inside supporting rail extends around all four sides.

Made of 16-gage steel.

Three piece construction. Reinforced corners. Drop handles.

Width, 10 inches. Length, 20 inches. Height, 8 inches.

Weight, 16.4 pounds.

No. 3610, without Finish.....each **\$2.10**

No. 3611, Green Finish.....each **2.25**

**Style RB Lyon Steel Stacking Boxes**

A strong stacking box used also for transportation between operations.

Made of 16-gage steel.

May be stacked on floor and used for regular bin type storage. Hopper end permits easy removal of contents.

Front top rail rounded for use as handle. Opposite end has drop handle.

Width, 10 inches. Length, 20 inches. Height, 8 inches.

Weight, 15.4 pounds.

No. 3620, without Finish.....each **\$2.30**

No. 3621, Green Finish.....each **2.50**

**Style L Lyon Steel Nesting Pans**

For handling parts safely and economically. Pans can be nested. A stack of 50 is only 43 inches high.

Made from a single sheet of folded steel.

Four thicknesses where hem overlaps corner braces. Integral handles are double thickness. Width, 11 inches. Length, 22 inches. Height, 6 inches.

No.	3630	3631	3632	3633
Each.....	<b>\$1.45</b>	<b>1.70</b>	<b>1.30</b>	<b>1.50</b>
Gage Steel.....	16	16	18	18
Finish.....	None	Green	None	Green
Weight.....pounds	12.5	12.5	9.6	9.6

**Lyon Tool Boxes and Trays****Tool Boxes**

Heavy duty tool box that protects tools and provides carrying case. Full-length, piano type hinge. Padlock attachment, padlock not furnished. Width, 7 inches.

Greenbaked-on enamel finish.

Tray is furnished, when specified, at additional cost.

No.	2301	2303
Each.....	<b>\$2.70</b>	<b>2.80</b>
Length.....inches	19	22
Height.....inches	6½	6
Weight.....pounds	12.1	13.3

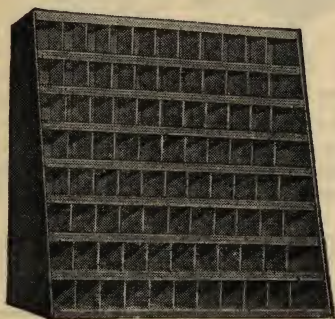
**No. 2310 One-Piece Steel Tool Trays**

Ends overlap sides and are clamped tight under the ½-inch flange, in addition to being securely welded.

Full length handle, attached to each end with rivets, is shaped to fit the hand. Length, 17½ inches. Width, 8½ inches. Height, 4½ inches. Overall height, 8½ inches.

Green baked-on enamel finish.

No. 2310, Weight, 10 Pounds.....each **\$1.50**

**No. 4191 Lyon Sloping Front Tool Storage Units**

Provides 88 openings in 8 depths. Shelf dividers adjustable every inch with patented snap-ins. Labelholders on each shelf.

Width, 34¼ inches. Depth, 17½ inches. Height, 37⅞ inches.

Green enamel finish.

Weight, 120.0 pounds.

No. 4191.....each **\$31.10**



## Lyon Steel Cabinets



No. 1000 Storage Cabinet

No. 1010 Combination Cabinet

Used in factories, printing plants, offices, hospitals, and service stations. Front corners are rounded. Type of construction eliminates bolt heads on front and sides. Cabinet has polished chrome handles and built-in locks. Three point locking device. Double doors swing open full 180 degree angle. Has four shelves adjustable every 2 inches without tools. Extra shelves may be added if required. Width, 36 inches. Depth, 21 inches. Height, 78 inches. Green baked-on enamel finish.

### Storage Cabinets

The double doors permit full access to all parts of cabinet. Shelf reinforcements available for heavy duty storage.

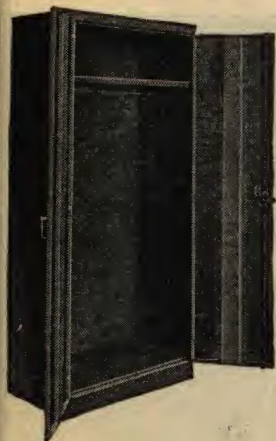
No. ....	*1000	†1001
Each. ....	\$46.75	36.50
Weight. .... pounds	200	190
No. 1050, Extra Shelf. .... each	\$2.15	
No. 1070, Shelf Reinforcement. .... each	.98	

### Combination Cabinets

Combines office supplies or package storage and wardrobe facilities in one cabinet. One full width shelf at top for hats. Balance of cabinet is divided for full length clothing storage and material storage.

No. ....	*1010	†1011
Each. ....	\$48.95	40.00
Weight. .... pounds	196	186
No. 1052, Extra Half Shelf. .... each	\$1.60	

### Wardrobe Cabinets



Full width shelf at top for hats and packages. Coat rod below shelf holds 8 to 15 heavy coats on hangers.

Interior completely finished, no sharp edges to mar appearance of cabinet or damage clothing.

No. ....	*1005	†1006
Each. ....	\$43.70	34.20
Weight. .... pounds	173	163
No. 1051, Extra Wardrobe Shelf with Coat Rod Attached. .... each	\$3.25	
*Shipped set-up.		
†Shipped knocked down.		

## Lyon Steel Lockers



Single Tier

Double Tier

Used in factories, offices, shops, printing plants, and hospitals. Has positive latch, full length pre-locking lock bar. Rigid frame, vertical members extend to floor to form legs. Vertical and horizontal members rabbetted and welded. Bulb edge adds strength and beauty. No bolt heads on locker fronts. Trouble-free hinges, projection welded to frame. Butt of hinge is recessed in door frame. Pin cannot be forced out. Door may be removed and replaced and still retain perfect alignment. Recessed handle, satin chrome finish. Number plate fits in handle and cannot be removed. No protruding parts to snag clothing. Used with padlock or built-in lock. Lockers 12 inches wide have one double prong and three single prong coat hooks. Lockers over 12 inches wide have one double and four single hooks. Number plate extra. Green baked-on enamel finish. Also available in brown finish.

### Single Tier

Full length clothing storage. Shelf 9 inches from top for hats, lunches, etc. Single tier doors have 3-point locking device (top, bottom and center).

Sizes shown are per locker opening, add 6 inches to height for legs.

Dimen. Width Depth Height Inches	No. of Rows	With Padlock Hasp				With Flat Key Lock			
		Set-Up		Knocked Down		Set-Up		Knocked Down	
12x12x60	Sgl.	5000	.....	5002	\$11.50	5001	.....	5003	\$12.50
12x12x60	Dbl.	5000	.....	5004	10.10	5001	.....	5005	11.45
12x15x60	Sgl.	5010	.....	5012	11.70	5011	.....	5013	13.05
12x15x60	Dbl.	5010	.....	5014	10.75	5011	.....	5015	12.10
15x18x72	Sgl.	5060	.....	5062	14.75	5061	.....	5063	16.10
15x18x72	Dbl.	5060	.....	5064	13.50	5061	.....	5065	14.85
15x15x60	Sgl.	5070	.....	5072	12.70	5071	.....	5073	14.05
15x15x60	Dbl.	5070	.....	5074	11.60	5071	.....	5075	12.95
15x18x60	Sgl.	5080	.....	5082	13.35	5081	.....	5083	14.70
15x18x60	Dbl.	5080	.....	5084	12.20	5081	.....	5085	13.55

### Double Tier

Satisfactory for a great many uses, particularly for short period occupancy and where long coats are not worn. Double tier lockers have no shelves. Double tier doors have 2-point locking device (top and bottom).

Sizes shown are per locker opening, add 6 inches to height for legs.

Dimen. Width Depth Height Inches	No. of Rows	With Padlock Hasp				With Flat Key Lock			
		Set-Up		Knocked Down		Set-Up		Knocked Down	
12x12x36	Sgl.	5200	....	5202	\$7.05	5201	....	5203	\$8.40
12x12x36	Dbl.	5200	....	5204	6.45	5201	....	5205	7.80
12x12x30	Sgl.	5240	....	5242	6.55	5241	....	5243	7.90
12x12x30	Dbl.	5240	....	5244	6.05	5241	....	5245	7.40
15x15x36	Sgl.	5250	....	5252	8.05	5251	....	5253	9.40
15x15x36	Dbl.	5250	....	5254	7.45	5251	....	5255	9.80

### No. 5840 Lyon Locker Racks

Open coat rack having 10 compartments with perforated doors above rack. Locking door secures coat by means of chain attachment. Built in lock, 2 keys. Width, 50 inches. Height, 76 inches. Depth, 18 inches. Green baked-on enamel finish, tan doors.

No. 5840. ....	each	\$50.00
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## Orangeburg Fibre Conduit



Taper Sleeve Joint

Orangeburg Conduit has been used as a raceway for underground communications and power circuits since 1893.

Manufactured by the Fibre Conduit Company, Orangeburg, New York, where continuing research and development insures a high standard of both workmanship and product improvement.

### Permanence and Low Cost

Orangeburg Conduit has proven its ability to give maximum, permanent, low maintenance service under conditions that expose ducts to attack from ground waters and chemical wastes—both acid and alkaline.

Installations running back over forty years are still providing clear, usable raceways.

Low in first cost, light in weight yet amply strong to resist breakage, it can be transported to the job in large truckloads.

The material is easy to cut or work. Angle couplings, bends, and other fittings make installation simple and economical. Long lengths and readily assembled Taper Sleeve Joints make for labor saving and low installed cost.

### Protection From Cable Sheath Abrasion

Scoring or abrasion of the cable sheath weakens its resistance to corrosive elements and shortens its life. Because of the smooth bore and relatively soft nature of their materials, Orangeburg ducts do not score or abrade the lead-sheath cable.

### Protection From Pulling Tension

Pulling tension on cable tends to set up strains in the sheath. The coefficient of friction in Orangeburg Conduit is lower than in other types of duct material. Published data by one large utility reveal the following coefficient of friction for a large actual installation recently made in which oil-filled cable was used:

Size of Cable	Size of Cut	Coefficient
300,000C.M.	2 1/4-In. O.D.	3 1/2 Inches .25-.30
650,000C.M.	2 1/2-In. O.D.	4 Inches .25-.30

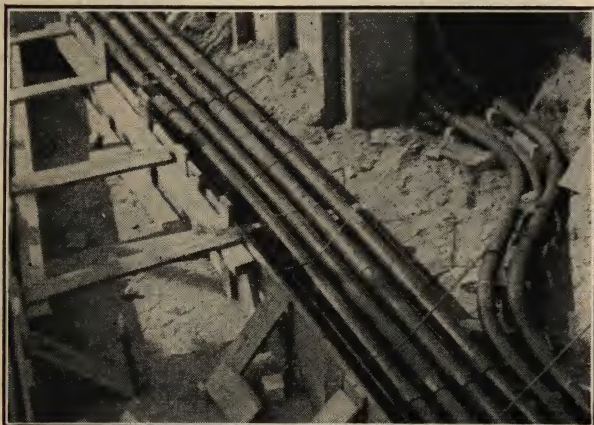
### General Properties

Composed of 25 per cent fibre and 75 per cent coal tar pitch with wall sections homogeneous and impregnation uniform throughout.

### Specifications

Federal Specification: WC-581,  
A.T. & T. (Bell Laboratories): AT-7047,  
U.S. Navy: 9YE,  
I.M.S.A.: 104-1942,  
Civil Aeronautics Authority: CAA-606,  
Association of American Railroads: XVIII-A-21 1929,  
And many Public Utilities specifications.

## Orangeburg Standard Conduit (Type I) For Installation with Concrete Encasement



For main distribution, high tension, and downtown locations.

Orangeburg Standard (Encased in Concrete), is the most economical where duct banks of four or more ducts are involved.

Interchangeable taperjoint couplings are furnished with each length of conduit without extra charge.

A mating 2-degree factory machined taper is provided on each length of conduit and assures a watertight joint.

## Orangeburg NOCRETE Conduit (Type II)

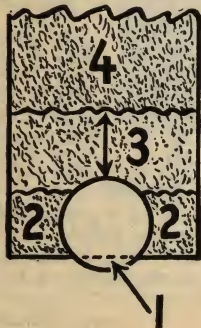
### For Installation Without Concrete Encasement

Conduit for underground without concrete encasement must have three prime characteristics: (1) mechanical strength; (2) ability to endure permanently; (3) offer lasting cable protection.

For house connections, laterals and extensions; airport, street and parkway lighting, fire alarm and signal systems; industrial and institutional grounds.

### How to Lay Orangeburg NOCRETE Conduit

Trench and backfill. The trench bottom should be graded true and free from stones or soft spots. Backfill should be free of stones, and should be firmly tamped around the side of the conduit to develop maximum supporting strength. Tamping on top of the conduit is not recommended.

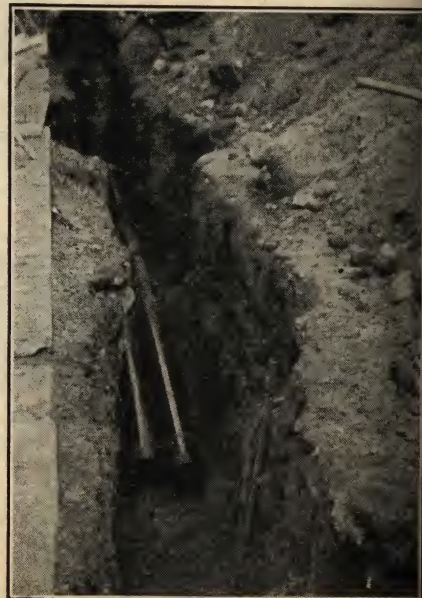


1. Best results are obtained if a cradle is made for the conduit in the undisturbed subgrade. In rocky soil, where this is not possible, a bedding of selected backfill should be put down and tamped before laying conduit.

2. Sidefill up to near the top of the conduit should be firmly tamped.

3. Selected backfill (not tamped) at least 6 inches over the top of the conduit is recommended.

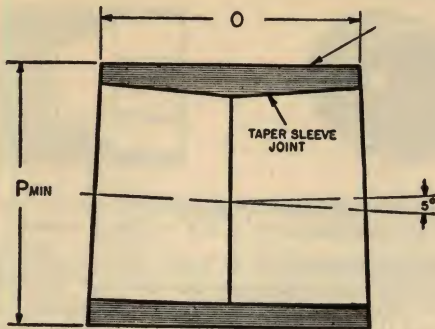
4. Final backfill may now be placed. Tamping may now be employed to finish grade.





### Fittings for *Standard* and *NOCRETE* Conduit

#### 5° Angle Couplings



Available to permit the laying of offsets, long radius bends, etc., to get around obstructions and other services which may be encountered.

The Taper Joint is provided, and a mark on the coupling shows the direction in which the angle will point.

#### 5° Angle Coupling *Standard* (Type I)

Dimensions, Inches

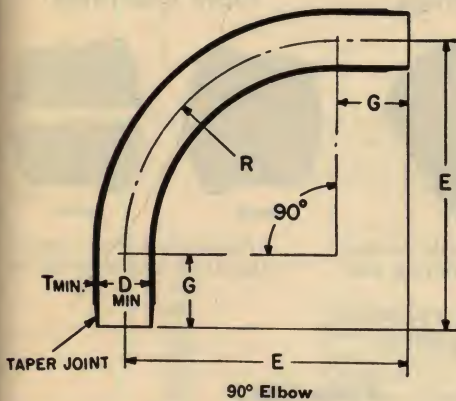
Size.....	1	2	3	4	4.5	5	6
P MIN.....	1.75	2.97	3.99	5.12	5.73	6.66	7.72
O MIN.....	2.00	2.98	3.5	4.00	4.00	4.00	4.00

#### 5° Angle Coupling *NOCRETE* (Type II)

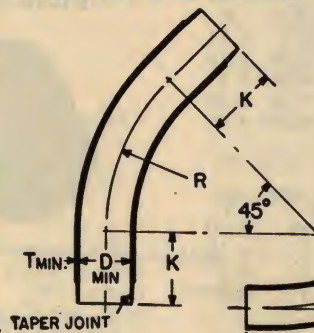
Dimensions, Inches

Size.....	2	3	4
P MIN.....	3.42	4.49	5.60
O MIN.....	3.48	3.98	4.48

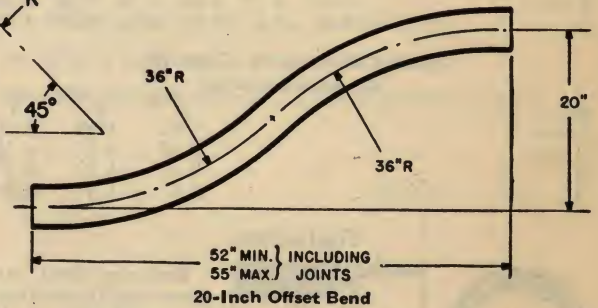
### Bends and Elbows



90° Elbow



45° Elbow



20-Inch Offset Bend

Orangeburg Fibre Conduit bends and elbows are made to the required radius and degree. Furnished with standard interchangeable Taper Sleeve Joint (coupling included). Standard bends and elbows are listed with dimensions. Split bends and bends of special radius and degree may be made to order.

### *Standard* Conduit (Type I) or *NOCRETE* Conduit (Type II)

Nominal Inside Diameter, Inches

Type I Bend Sizes.....	1.	2.	3.	4.	4.5	5.	6.
Type II Bend Sizes.....	2.	3.	4.	.....	.....	.....	.....

#### 90° Elbow *Standard* Conduit (Type I)

Dimensions, Inches

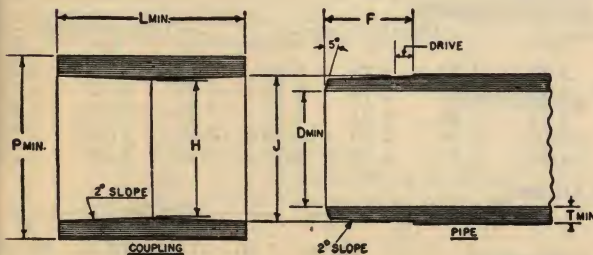
Size, D MIN	1.0	2.0	3.0	4.0	4.5	5.0	6.0
T MIN.	.20	.23	.28	.32	.32	.41	.46
R.....	5.75	18 24 36	9.5 18 24 36	13 24 36	16 36	18 36 24 36	36
E.....	13.75	26 32 38	17.5 26 32 38	21 32 38	24 38	26 36 32 36	36
G.....	8	8 8 2	8 8 8 2	8 8 2	8 2	8 0 8 0	0
K.....	8	8 8 8	8 8 8 8	8 8 8	8 8	8 8 8	8

#### 45° Elbow *NOCRETE* Conduit (Type II)

Dimensions, Inches

Size, D MIN	2.0	3.0	4.0
T MIN.	.38	.43	.48
R.....	9.5 18 24 36	13 24 36	16 36
E.....	17.5 26 32 38	21 32 38	24 38
G.....	8 8 8 2	8 8 2	8 2
K.....	8 8 8 8	8 8 8	8 8

### Taper Joint Couplings



#### *Standard* Conduit (Type I)

Dimensions, Inches

Size.....	1	2	3	4	4.5	5	6
D MIN..	.95	2.00	3.00	4.00	4.50	5.00	6.00
F.....	.94	1.43	1.69	1.94	1.94	1.94	1.94
H.....	1.272	2.365	3.326	4.353	4.932	5.528	6.562
J.....	1.342	2.470	3.448	4.493	5.072	5.668	6.702
L MIN..	2.00	3.00	3.50	4.00	4.00	4.00	4.00
P MIN..	1.75	2.97	3.99	5.12	5.73	6.66	7.72
T MIN..	.20	.23	.23	.24	.26	.36	.37
Drive...	.28	.28	.28	.28	.28	.28	.28

#### *NOCRETE* Conduit (Type II)

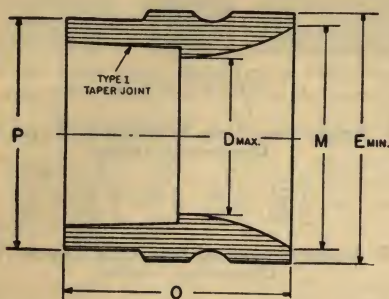
Dimensions, Inches

Size.....	2	3	4
D MIN..	2.00	3.00	4.00
F.....	1.68	1.93	2.18
H.....	2.678	3.705	4.764
J.....	2.800	3.845	4.922
L MIN..	3.50	4.00	4.50
P MIN..	3.42	4.49	5.60
T MIN..	.38	.43	.48
Drive...	.25	.25	.25



## Fittings for Orangeburg Standard and NOCRETE Conduit

## Bell Ends



For use at conduit terminals in manholes at sub stations, etc.

## Standard Conduit (Type I)

Dimensions, Inches

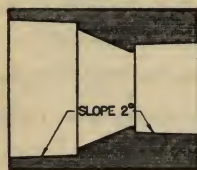
Size.....	1	2	3	4	4.5	5
P.....	1.75	3.1	4.3	5.5	6.4	6.64
D MAX.....	1.08	2.15	3.15	4.15	4.65	5.15
M.....	1.86	3.0	4.2	5.4	6.25	6.5
E MIN.....	2.07	3.37	4.56	5.73	6.66	6.83
O.....	2.0	3.0	3.5	4.0	4.5	4.5

## NOCRETE Conduit (Type II)

Dimensions, Inches

Size.....	2	3	4
P MIN.....	3.42	4.49	5.60
D MAX.....	2.15	3.15	4.15
M.....	3.0	4.12	5.2
O.....	3.5	4.0	4.5

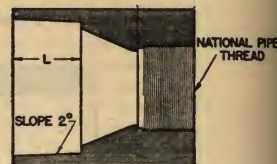
## Reducers



Reducers from one size conduit to another are available in all combinations from 1 to 6 inches inclusive. The standard reducer is Taper Sleeve Joint at both ends. Sizes

and types of conduit, joints, etc. to be connected must be specified in detail.

## Adapters



Adapters from metal pipe to fibre conduit are available in all combinations from 1 to 6 inches inclusive.

The standard adapter is Taper Sleeve Joint at the fibre end threaded for metal pipe size specified, at the other end. Can be supplied straight bore for threadless metal pipe. Sizes and types of connections desired must be specified.

## Fibre Plugs



## Fibre Bushings



Solid

Split

For temporarily closing ends of ducts during concreting, etc.

Available for 2 to 6-inch size conduits inclusive.

Available for all conduit sizes 2 to 5 inches inclusive.

## Fibre Caps

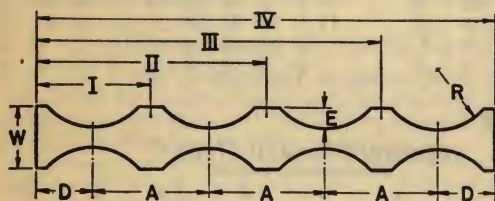
For sealing spare ducts or exposed conduit ends, etc. Taper Sleeve Joint is standard; socket joint or sleeve fit if specified.

Made for conduit sizes 1 to 6 inches inclusive.



## Orangeburg Fibre Conduit Accessories

## Spacers (Bridges or Separators)



For built-up fibre conduit installations, grooved spacers are available for one, two, three or four conduit wide assemblies. These spacers are cast for conduit sizes from 2 to 4½ inches inclusive.

As the general practice is to allow a separation of 1 inch between conduits, this is the standard separation provided. However, for special applications, spacers can be supplied for 1½, 2 or 3-inch separation between ducts.

Orangeburg Conduit Spacers are handled as a service item. Although built for minimum weight with adequate strength, transportation cost may make it more economical for the large user at distant points to make his own spacers. Complete information as to mix employed will be furnished upon request.

## Dimension, Inches, of Conduit Spacers

Conduit Inches	R	E	1-INCH SEPARATION			1½-INCH SEPARATION			2-INCH SEPARATION			3-INCH SEPARATION		
			A	D	W	A	D	W	A	D	W	A	D	W
2	1.31	.63	3.63	1.75	2.25	4.13	2.00	2.75	4.63	2.25	3.25	5.63	2.75	4.25
3	1.81	.88	4.63	2.25	2.75	5.14	2.50	3.25	5.63	2.75	3.75	6.63	3.25	4.75
4	2.38	1.13	5.75	2.81	3.25	6.25	3.06	3.75	6.75	3.31	4.25	7.75	3.81	5.25
4½	2.69	1.25	6.38	3.13	3.50	6.88	3.38	4.00	7.38	3.63	4.50	8.38	4.13	5.50
5	3.06	1.38	7.13	3.50	3.75	7.63	3.75	4.25	8.13	4.00	4.75	9.13	4.50	5.75

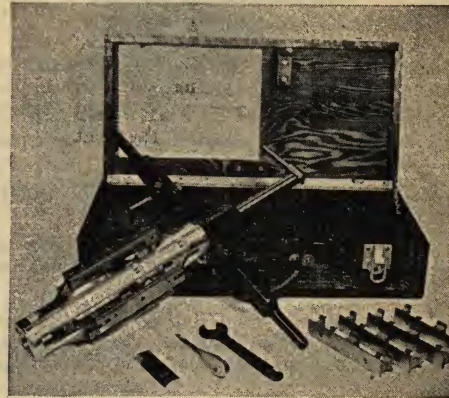
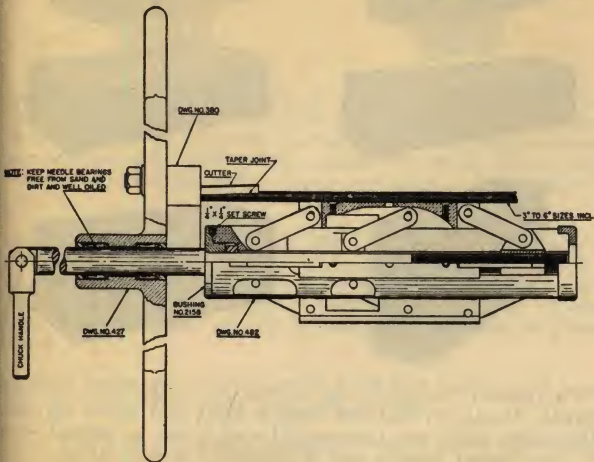
## Overall Length, Inches

Conduit Inches	1-INCH SEPARATION				1½-INCH SEPARATION				2-INCH SEPARATION				3-INCH SEPARATION			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
2	3.50	7.13	10.75	14.38	4.00	8.13	12.25	16.38	4.50	9.13	13.75	18.38	5.50	11.13	16.75	22.38
3	4.50	9.13	13.75	18.38	5.00	10.13	15.25	20.38	5.50	11.13	16.75	22.38	6.50	13.13	19.75	26.38
4	5.63	11.38	17.13	22.88	6.13	12.38	18.63	24.88	6.63	13.38	20.13	26.88	7.63	15.38	23.13	30.88
4½	6.25	12.63	19.00	25.38	6.75	13.63	20.50	27.38	7.25	14.63	22.00	29.38	8.25	16.63	25.00	33.38
5	7.00	14.13	21.25	28.38	7.50	15.13	22.75	30.38	8.00	16.13	24.25	32.38	9.00	18.13	27.25	36.38

Dimensions I, II, III and IV indicate overall length of spacer for 1, 2, 3 or 4 conduits laterally spaced.



## Orangeburg Field Tooling Lathe

For 1 to 6-Inch *Standard* and *NOCRETE* Conduit

Orangeburg field tooling lathes are made of hardened steel alloy with needle bearings in the cutting handle.

With reasonable care, they maintain accuracy for many years.

No. 0902 is designed for 1-inch conduit only.

No. 0904 is designed for 2-inch conduit only.

No. 0905 is adjustable for 3 to 6-inch conduit only.

## Parts List

No.	Description	Quantity
380	Cutter Holder (Taper Joint).....	1
381	Short Taper Joint Cutter.....	1
379	Long Taper Joint Cutter.....	1
422	Combination Wrench.....	1
427	Cutting Handle.....	1
482	Chuck Assembly.....	1
2270-0905	Carrying Case.....	1
*420	Cutter Holder (Socket Joint).....	1
*428	Socket Joint Cutter, 3 to 6-Inch <i>Standard</i>	
*429	Socket Joint Cutter, 3 to 4-Inch <i>NOCRETE</i>	

\*Furnished only when specified.

## Shipping Weights and Data

**Economical Transportation.** Orangeburg Conduit is transported by rail or truck most economically because it combines light weight with ample strength to resist breakage. The largest truck bodies can be loaded to maximum cubic carrying capacity, reducing trips and hourly costs to an almost negligible cost per foot.

Orangeburg price schedules are based on total weight of material involved, including all bends, elbows and items classified as fittings *Standard* and *NOCRETE*; excluding items classified as accessories (spacers, etc.)

**Shorts.** The right is reserved to include 15 per cent of lengths shorter than standard. All shorts included are packed separately in any shipment to facilitate identification and easy count. Shorts are cut to even lengths six or twelve inches less than standard.

**Class A Orders:** 30,000 pounds (minimum car) or over.

**Class B Orders:** 10,000 to 29,999 pounds.

**Class C Orders:** 9,999 pounds or less.

**Crating.** There is an extra charge for crating Class A and B orders, if crating is desired and specified. Class C orders are usually packaged for less than carload handling.

Weights of bends and other fiber items are included in figuring minimum weights; consequently such items on an order will decrease footage in the conduit weight tables.

The weights listed below are used for pricing computations only (approximate shipping weights).

Orangeburg *Standard* Conduit

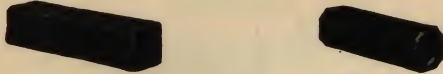
Conduit Size.....inches	1	2	3	4	4½	5	6
Weight per 100 Feet.....pounds	50	115	140	200	240	300	425
Min. No. of Feet to Make 30,000 Lb.....ft.	60,000	26,100	21,430	15,000	12,500	10,000	7,059
Min. No. of Feet to Make 10,000 Lb.....ft.	20,000	8,700	7,144	5,000	4,167	3,334	2,353

Orangeburg *NOCRETE* Conduit

Conduit Size.....inches	2	3	4
Weight per 100 Feet.....pounds	180	270	360
Min. No. of Feet to Make 30,000 Pounds.....feet	16,668	11,112	8,333
Min. No. of Feet to Make 10,000 Pounds.....feet	5,556	3,704	2,778



### Natco Standard Single Duct Conduit



Adapted for high tension power lines, single cable terminals or for low tension laterals, as in telephone or signal lines.

In building up duct banks, this conduit provides two heavy insulating walls between adjacent cables, and permits breaking or staggering of all joints throughout the duct bank.

Permits the splaying or separation of individual duct lines in approaches to manholes.

Conduit is scarified lengthwise on the four outer sides, to provide anchorage for bedding mortar.

The inner edges of the duct entrances are properly bevelled and smoothed to eliminate projections and to make safe the pulling of cables.

Certain square single duct shapes are provided with through dowel holes in the corners, permitting the use of steel dowel pins for assembling, centering and aligning such duct lines.

Nom- inal Bore In.	No. Duct Holes	Std. Lgth. In.	Duct Ft. per Pc.	Actual Size Duct Hole In.	Approx. Out- side Dimen. In.	Short Lgths. In.	Min. Car- load Duct Ft.
3 1/4 Rd.	1	18	1 1/2	3 3/8	4 1/2 x 4 1/2	3, 4, 6, 9, 12	8700
3 1/2 Rd.	1	18	1 1/2	3 5/8	4 7/8 x 4 7/8	3, 4, 6, 9, 12	6900
4 1/4 Rd.	1	18	1 1/2	4 3/8	5 5/8 x 5 5/8	3, 4, 6, 9, 12	5700
5 1/4 Rd.	1	24	2	5 3/8	6 7/8 x 6 7/8	3, 4, 6, 9, 12	4000
3 1/4 Sq.	1	24	2	3 3/8	4 3/4 x 4 3/4	3, 4, 6, 9, 12	6100
3 1/2 Sq.	1	18	1 1/2	3 5/8	5 x 5	3, 4, 6, 9, 12	5700
4 1/4 Sq.	1	18	1 1/2	4 3/8	5 7/8 x 5 7/8	3, 4, 6, 9, 12	4800

### Natco Single Duct Bends



#### Standard Shapes

Bore.....	3 1/4, 3 1/2 or 4 1/4	Round or Square
Angle.....	45°	90°
Radius.....inches	12, 18, 24 or 36	12, 18, 24

#### Arc or Length

Bore.....inches	3 1/4, 3 1/2 or 4 1/4 Rd.	3 1/4, 3 1/2 or 4 1/4 Sq.
Length.....inches	18	18
Radius.....inches	36, 60, 72 or 96	36, 60, 72 or 96

Bends also supplied that are scored for splitting apart.

### Natco Socket Joint Single Duct Conduit



Natco Single Duct Conduit is also manufactured in a new socket joint type, which is supplied in 3 1/2, 4 and 4 1/2-inch round bore and in either 18 or 24-inch standard lengths. This new type of duct is self-centering, provides positive alignment, lays up fast and can be installed by ordinary labor. If desired, the joints may be readily troweled or sealed with cement mortar. This new type of conduit is especially adapted for single duct lateral lines, also equally suitable for duct bank construction where this type of joint is preferred.

Nominal Bore.....inches	3 1/2 Rd.	4 Rd.	4 1/2 Rd.
Length.....inches	18 and 24	24	24
Actual Size of Duct			
Holes.....inches	3 5/8	4 1/8	4 5/8

Also furnished in bends and mitred sections.

### Natco Standard Multiple Duct Conduit



Particularly adapted for telephone, telegraph, railway signal, fire alarm and low tension light and power service. The large units are economical and quick to install, due to their longer lengths and multiplicity of duct holes.

At the extreme ends of each piece of conduit, a smooth surface is left to permit wrapping each joint with tape or fabric to exclude joint mortar from the ducts.

Supplied in either 3 1/4, 3 1/2 or 4 1/4-inch square bore shapes and in 2, 3, 4, 6, 8 and 9-way multiple shapes.

The 3 1/4 inch is the standard bore, while 4 1/4 inch is the over-size bore, for most telephone service and for certain low tension power and lighting systems, while the 3 1/2 inch bore is frequently specified for certain municipal installation.

Nom- inal Bore In.	No. Duct Holes	Std. Lgth. In.	Duct Ft. per Pc.	Actual Size Duct Hole In.	Approx. Out- side Dimen. In.	Made in Short Lgths. In.	Min. Car load Duct Ft.
3 1/4 Sq.	2	24	4	3 3/8	4 3/4 x 8 3/4	6, 8, 12	8200
3 1/4 Sq.	3	24	6	3 3/8	4 3/4 x 12 3/4	6, 8, 12	8100
3 1/4 Sq.	4	36	12	3 3/8	8 3/4 x 8 3/4	6, 9, 12	9600
3 1/4 Sq.	6	36	18	3 3/8	8 3/4 x 12 3/4	6, 9, 12	10000
3 1/4 Sq.	8	36	24	3 3/8	8 3/4 x 16 3/4	6, 9, 12	10000
3 1/4 Sq.	9	36	27	3 3/8	12 3/4 x 12 3/4	6, 9, 12	10000
3 1/2 Sq.	2	24	4	3 5/8	5 1/8 x 9 5/8	6, 8, 12	7000
3 1/2 Sq.	3	24	6	3 5/8	5 1/8 x 13 5/8	6, 8, 12	7200
3 1/2 Sq.	4	36	12	3 5/8	9 5/8 x 9 5/8	6, 9, 12	8200
3 1/2 Sq.	6	36	18	3 5/8	9 5/8 x 13 5/8	6, 9, 12	8600
4 1/4 Sq.	2	24	4	4 3/8	5 1/2 x 11	6, 8, 12	5600
4 1/4 Sq.	3	24	6	4 3/8	5 1/2 x 16 1/2	6, 8, 12	6000
4 1/4 Sq.	4	36	12	4 3/8	11 x 11	6, 9, 12	6600
4 1/4 Sq.	6	36	18	4 3/8	11 x 16 1/2	6, 9, 12	6800
4 1/4 Sq.	9	24	18	4 3/8	16 1/2 x 16 1/2	6, 8, 12	7300

### Natco Split Conduit



Natco Conduit in both single and multiple duct shapes and in all standard bores is supplied, scored or knifed, for splitting apart on the job, for repairing or replacing duct lines, without the necessity of removing cables.

These split sections may be also used to enclose cable joints or splices in place of building manholes.

Bore Inches	No. of Duct Holes	Standard Length Inches	Short Lengths Inches
3 1/4, 3 1/2 or 4 1/4 Rd.	Sgl. Duct	18	6, 9, 12
3 1/4, 3 1/2 or 4 1/4 Sq.	Sgl. Duct	18	6, 9, 12
3 1/4 Sq.	2 or 3-Way	18	6, 9, 12
3 1/4 Sq.	4 or 6-Way	18 and 36	6, 9, 12
3 1/4 Sq.	8 or 9-Way	18	6, 9, 12
3 1/2 Sq.	2 or 3-Way	24	6, 9, 12
3 1/2 Sq.	4 or 6-Way	18 and 36	6, 9, 12
4 1/4 Sq.	2 or 3-Way	18	6
4 1/4 Sq.	4 or 6-Way	18	6
4 1/4 Sq.	9-Way	18	6



**Natco Mitred Conduit**

For Curve Construction



Natco Conduit, both single and multiple duct, in all standard bores, is supplied in mitred shapes, for building either simple or intricate curves in lines of clay conduit, for transposing narrow duct banks into wide ones or vice versa, or for playing duct lines to enter manholes or service points.

Natco Mitred Conduit is made in one standard cut—3 degree and 10-foot radius. The radius of curves built of these sections, is varied simply by interposing straight short pieces between the mitred sections, and the arc of such curves is governed simply by the total number of pieces used.

True and easy curves from 10 to 30 foot radius, and ranging from 3 to 90 degrees, can thus be built.

In the 2, 3 and 6-way multiple conduit, the mitred sections are supplied in either a flat or edge position.

Mitred conduit also supplied scored for splitting apart.

Approximate length, 6x6 $\frac{5}{8}$  inches. Number of pieces in 90° curve, 30.

Bore Inches	No. of Duct Holes	Position
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ , or 4 $\frac{1}{4}$ Round	Single Duct	.....
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ , or 4 $\frac{1}{4}$ Square	Single Duct	.....
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ , or 4 $\frac{1}{4}$ Square	2, 3, or 6-Way	Flat or Edge
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ , or 4 $\frac{1}{4}$ Square	4-Way	.....
3 $\frac{1}{4}$ Square	8-Way	Flat or Edge
3 $\frac{1}{4}$ or 4 $\frac{1}{4}$ Square	9-Way	.....

**Natco Branch Conduit**

For Dividing Multiple Duct Main Lines



Natco Multiple Duct Conduit is supplied in branch shapes in all standard bores.

Natco Branch Conduit is a new shape, one end of which is the same shape and size as standard conduit, while at the opposite end, certain ducts are more widely separated by means of double webs, so as to permit alignment with abutting branch lines.

Branch conduit permits the division of multiple duct main lines into two or more branch lines, each having a smaller number of ducts than the main line. Such a division is highly advantageous in playing main duct lines into central office buildings, manholes or cable vaults, or for turning laterals or service connections. It frequently saves the necessity of manholes.

Also supplied scored for splitting apart.

Length, 24 inches.

Bore Inches	No. of Duct Holes	Type	For Branching Into
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	2-Way	1-1	2 Single Duct
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	3-Way	1-2	1 Single and 1 Two-Way
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	3-Way	1-1-1	3 Single Duct
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	4-Way	2-2	2 Two-Way
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	6-Way	2-4	1 Two-Way and 1 Four-Way
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	6-Way	2-2-2	3 Two-Way
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	6-Way	3-3	2 Three-Way
3 $\frac{1}{4}$ Sq.	8-Way	4-4	2 Four-Way
3 $\frac{1}{4}$ Sq.	8-Way	2-6	1 Two-Way and 1 Six-Way
3 $\frac{1}{4}$ , or 4 $\frac{1}{4}$	9-Way	3-6	1 Three-Way and 1 Six-Way

**Natco Transposition Conduit**

For Transposing or Twisting 2, 3 and 6-Way Conduit Lines



Natco Multiple Duct Conduit is also supplied in transposition shapes in 2, 3, 6 and 8-way multiples, with right or left-hand twist. The degree or angle of twist is 22 $\frac{1}{2}$ ° for 3 $\frac{1}{4}$ -inch bore shapes, 18° for 3 $\frac{1}{2}$ -inch bore shapes and 15° for 4 $\frac{1}{4}$ -inch bore shapes, and the standard length is 24 inches.

The number of pieces required to effect a quarter turn of 90° from a flat to an edge position, or vice versa, is four pieces in the 3 $\frac{1}{4}$ -inch bore, five pieces in 3 $\frac{1}{2}$ -inch bore or six pieces in the 4 $\frac{1}{4}$ -inch bore sizes.

These transposition shapes are of considerable advantage in changing the position of height of conduit lines, in order to avoid certain street obstructions, or to cross viaducts or bridges, or to change the position of cables on their approach to manholes or cable vaults, all of which frequently eliminates the need of manholes.

Direction of twist, right or left hand.

Bore.....inches	3 $\frac{1}{4}$	3 $\frac{1}{2}$	4 $\frac{1}{4}$
Twist.....	22 $\frac{1}{2}$ °	18°	15°
No. of Pieces in $\frac{1}{4}$ Turn.....	4	5	6

**Natco Pipe Connectors**Single Duct  
Connector2-Way  
Connector3-Way  
Connector

Rear View of Connector Ready to Receive Conduit

For the purpose of connecting clay conduit lines to iron pipe lines as in pole risers or to enter buildings, Natco Pipe Connectors are available in the sizes shown below.

These connectors are made of cast iron, one end is shaped to receive the end of the clay conduit line, while the opposite end of the connector is reamed to receive the iron pipe lines.

**Single Duct Connector**

For 3 $\frac{1}{4}$ -inch bore conduit and 3-inch pipe or 4 $\frac{1}{4}$ -inch bore conduit and 4-inch pipe.

**2-Way Connector**

For 3 $\frac{1}{4}$ -inch bore conduit and 3-inch pipe or 4 $\frac{1}{4}$ -inch bore conduit and 4-inch pipe.

**3-Way Connector**

For 3 $\frac{1}{4}$ -inch bore conduit and 3-inch pipe or 4 $\frac{1}{4}$ -inch bore conduit and 4-inch pipe.



## No. 106 Natco Conduit



Illustrating the conversion of a 4-way multiple duct line into two 2-way multiple duct lines in an edge position, one of which is flexed or curved to one side in the direction of a pole and terminated in two riser iron pipe lines, ascending the pole, while the other 2-way line is transposed or twisted 90° from an edge to a flat position in a distance of 8 feet and then continued straight on in the form of standard 2-way multiple duct conduit—in a flat position.

## Specifications

B—One-piece 4-way type 2-2 branch conduit, 2 feet long (for dividing the 4-way line into two 2-way lines).

E—Six pieces 2-way mitred conduit—edge position—3° 10-inch radius—6¼ inches long, (for flexing or curving one of the 2-way lines to one side in the direction of the pole. The angle of flexure shown is 18° but any angle of flexure divisible by 3, may be attained by varying the number of mitred pieces).

H—One-piece 2-way standard conduit, 2 feet long (laid in edge position—to extend the flexed 2-way line on towards pole).

R—One cast iron 2-way connector for 3-inch wrought iron pipe.

P—Four pieces 2-way left-hand transposition conduit, 22½°, 2 feet long (for transposing the other 2-way line 90° from an edge to a flat position).

## Dowel Pins



Pressed steel pins, 5/8x3 inches, with an integral central flange or collar, are generally used for joining or aligning individual sections of multiple duct, also certain sizes of square bore single duct conduit together.

Two pins are used at each joint or for each piece of conduit.

## Joint Tape



An especially prepared tape is frequently used for wrapping the joints of multiple duct conduit prior to the application of the joint mortar, also occasionally used for wrapping joints of single duct conduit in trench, subway or masonry structures, prior to the pouring of the concrete encasement.

This tape has an adhesive waterproof coating on one side, and is supplied in 4 and 6-inch widths, and put up in rolls of 25 linear yards.

Tape adheres closely and firmly to the glazed surface of the conduit and aids in sealing the joints.

In ordering, specify total number of linear yards required.

## Minerallac Insulating Compound

For Use in Cable Joints, Potheads and Terminal Bells



## High Voltage Compound

**No. 1.** A compound having the consistency of molasses. Not affected by moisture. Especially effective in drying out tape and cloth, and between layers of such materials when wound on high-voltage electrical apparatus.

**No. 2A.** Cable joint or pothead compound. Melting point, 82°C. One of the most important characteristics of this compound is its ability to adhere to metal or porcelain. Suitable for use in warm climates.

**No. 64.** A compound suitable for use in mild climates where there is no great variation in temperature. A hard compound with a melting point of approximately 93°C.

**No. 78.** Cable joint or pothead compound. Dense and adhesive with little shrinkage. Recommended as an all-purpose insulating material. Low moisture absorption; pliable. Recommended for voltages 600 and up. Melting point, 90°C. Dielectric strength 940 volts per mil at 30°C.

**No. 80.** Pothead compound. A hard compound for use on 600 volts and over. Melting point, 130°C. Tests 990 volts per mil at 30°C.

**No. 104.** A semi-solid compound for use in cable joints on high voltage lines over 600. Melting point, 50°C. Dielectric strength averages 800 volts per mil at 30°C.

**No. 104A.** A semi-solid compound with the same general characteristics as No. 104, except that it has a lower melting point (35°C). Average viscosity, 800 seconds at 100°C. For use on high voltage potheads and cable joints where a low melting point compound is required.

Size Container.....	gallons	1/2	1	2	5	*400
No. 1.....	per gallon	\$2.80	\$2.30	\$2.25	\$2.10	\$1.80
No. 2-A.....	per gallon	3.30	2.80	2.75	2.60	2.30
No. 33.....	per gallon	3.80	3.30	3.25	3.10	2.80
No. 64.....	per gallon	2.60	2.10	2.05	1.90	1.60
No. 78.....	per gallon	2.50	2.00	1.70	1.55	.80
No. 80.....	per gallon	2.50	2.00	1.70	1.55	.80
No. 104.....	per gallon	2.50	2.00	1.70	1.55	.80
No. 104A.....	per gallon	2.50	2.00	1.70	1.55	.80

\*Closed steel drum weighing approximately 400 pounds.

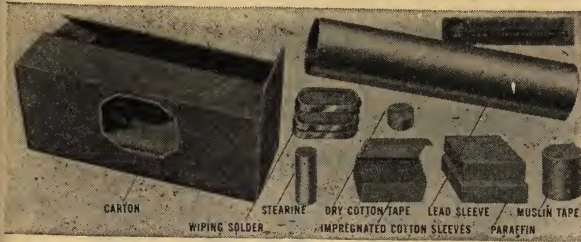
## High Voltage Compound—Oil Insoluble

**No. 33.** For use in cable joints, potheads and terminals, and other electrical apparatus where a close seal against oil filtration is specified. For protection of transformer bushings on oil-filled transformers.

Size Container.....	gallons	1	2	5
Per Gallon.....		\$3.30	3.25	3.10



## G &amp; W Telephone Cable Splicing Kits



For 2-way straight joints for all sizes and numbers of conductors, paper-wrapped, wood pulp and silk insulated, lead covered, plain and armored cables.

Kit contains: paraffin, for boiling out the core; Stearine, flux for wiping joints; dry cotton tape, for protecting the individual conductors at the ends of the lead sheaths; muslin tape, for wrapping the spliced conductors; paper pasters, for limiting the wipes; lead sleeve, 1/8-inch thick, for housing the joint; and wiping solder, for wiping lead sleeve to cable sheaths.

No. 22 A.W.G. Conductors					No. 19 A.W.G. Conductors				
No. of Pairs of Conductors	No.	Per Kit	LEAD. SLEEVE. Ship.		No.	Per Kit	LEAD. SLEEVE. Ship.		
			I.D. In.	Approx. Lgth. Lb.			I.D. In.	Approx. Lgth. Lb.	
6	622T	\$3.30	3/4	15 9	619T	\$3.30	3/4	15 9	
11	1122T	3.30	3/4	15 9	1119T	3.60	3/4	15 9	
16	1622T	3.30	3/4	15 9	1619T	3.60	3/4	15 9	
26	2622T	3.60	1	15 9 1/2	2619T	3.90	1	15 9 1/2	
51	5122T	4.20	1 1/4	15 10	5119T	5.10	1 1/2	15 11	
76	7622T	4.50	1 1/2	15 11	7619T	6.30	1 3/4	17 12 1/2	
101	10122T	4.80	1 1/2	15 11 1/2	10119T	7.20	2	17 13 1/2	
152	15222T	5.10	2	17 14 1/2	15219T	9.00	2 1/4	20 18	
202	20222T	7.50	2 1/4	17 15 1/2	20219T	11.40	2 3/4	20 20 1/2	
303	30322T	10.80	2 3/4	20 20 1/2	30319T	16.50	3 1/2	20 25 1/2	
404	40422T	12.30	3	20 22	40419T	20.10	4	20 28 1/2	
455	45522T	12.90	3	20 22	45519T	21.00	4	20 29	
606	60622T	15.60	3 1/2	20 25					
909	90922T	20.10	4	20 28 1/2					

## Ozite B Filling Compounds



Ozite B is a black asphaltic compound recommended for filling joints, terminals and junction boxes operated at normal temperatures.

This compound is manufactured under an improved process which results in a product with a low carbon content. Formulated by expert cable engineers with many years of experience, this compound combines all of the desirable characteristics that a jointing or filling compound should have.

Prices and complete information upon application.

## No. 2769 McGill Crescent Chatterton Compound

Domestic Brand



A para rubber compound for insulating 75% pure rubber. Gives complete assurance against danger of open contacts and terminals; can also be used for waterproofing. Used on all high grade electrical work. Formed in 1/4-pound sticks, 1 inch in diameter and 8 inches long.

Put up 10 sticks in a package; weight, 2 1/2 pounds.

No. 2769.....per pound \$2.00

## No. 150 Minerallac Cable Pulling Compound

Minerallac Cable Pulling Compound is applied to the cable at the entrance of the cable feeder with a stiff brush. The properties of this compound cause it to cling to and lubricate the full length of the cable and conduit. The compound will follow through curves and bends in the conduit, eliminating damage to the cable sheath. No. 150 Cable Pulling Compound has the following features:

Chemically inert—no deterioration to either cable or conduit, including fiber conduit.

Economical—a comparatively small quantity is sufficient to pull a cable into the conduit: 5 to 7 pounds to pull a 2.83-inch diameter cable into approximately 400 feet of 3 1/2-inch tile conduit.

Not affected by temperature—cables may be pulled at temperatures as low as 10° above zero (F.).

Size Can.....pounds 12 25 60 \*600  
No. 150.....per pound \$1.14 .13 .12 .10

\*Steel drum weighing approximately 600 pounds.

## No. 100 Minerallac Pull-In Compound

Used to lubricate rubber covered wire and cable that is to be pulled through conduit.

Reduces pulling tension and injury to wires and cables.

Furnished in 2-gallon cans.

No. 100.....per can \$3.25

## O.Z. Insulating Compound



For 750 to 2500 volt terminators

Approximate shipping weight, 10 pounds per gallon.

Prices on compound in steel drums upon request.

Quantity Gallons	1/4-Gallon Can per Gallon	1/2-Gallon Can per Gallon	1-Gallon Pail per Gallon	2-Gallon Pail per Gallon	5-Gallon Pail per Gallon
1-9	\$3.75	\$2.50	\$2.05	\$2.00	\$1.85
10-49	3.22	2.15	1.75	1.70	1.55
50-149	2.62	1.75	1.25	1.20	1.05
150-249	2.47	1.65	1.20	1.15	1.00
250 and Over	2.10	1.40	1.00	.95	.80

## Cope Safety Compound Kettles

Capacity, 3 Gallons



The double flue extending through the kettle bottom and up and out to the sides, conducts the heat to every part of the compound. This insures a uniform melting, thereby preventing all danger of explosion.

The short lip spout eliminates clogging and allows free pouring. The wide kettle opening provides ease in filling and also in dipping tubes and socks.

Made of heavy steel, welded throughout. Has an extra heavy bottom which is inset 1 inch from the base. Tight fitting lid prevents loss of compound. Diameter, 10 inches; height, 12 inches.

Each.....\$16.90

## Ruberoid Rapid Asphalt Paint

(Formerly P & B Rapid Asphalt Paint)

Dries quickly to a hard, glossy coating, exceedingly tough and durable and with high insulating properties. Adapted for cables, switchboards, battery boxes, shelving, conduit joints and all insulating requirements.

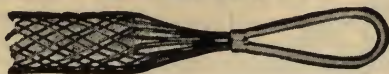
Made in medium brushing consistency.

Size Package.gal. 1/8 1/4 1 5 55  
Per Gallon.....\$2.00 1.70 1.40 1.25 1.10





## Reliable Steel Pulling Cable Grips

Solid Wire  
Double Weave

No.	Each	CABLE DIAM., IN.		Length Inches	Tensile Strength Pounds	Ship. Wt. Lb.
		Min.	Max.			
801	\$3.25	1 1/2	5/8	18	5,300	1
802	3.50	3/4	7/8	22	6,300	1
803	3.75	1	1 3/8	22	6,300	1 1/2
804	4.00	1 1/2	1 7/8	22	8,500	1 1/2
805	4.25	2	2 3/8	22	15,000	2
806	4.50	2 1/2	2 7/8	30	18,300	4
807	4.75	3	3 3/8	30	23,000	3
808	5.00	3 1/2	3 7/8	30	23,000	4
811	3.50	1 1/2	5/8	24	5,300	1
812	4.50	3/4	7/8	30	6,300	1 1/2
813	4.75	1	1 3/8	30	6,300	1 1/2
814	5.00	1 1/2	1 7/8	30	8,500	1 1/2
815	5.25	2	2 3/8	30	15,000	2
816	5.50	2 1/2	2 7/8	45	18,300	3
817	5.75	3	3 3/8	45	23,000	5
818	6.00	3 1/2	3 7/8	45	23,000	5 1/2

Plain Flexible



18-Inch—Single Weave						
821	\$2.00	1 1/2	5/8	18	2,800	1
24-Inch—Single Weave						
822	\$2.25	3/4	7/8	24	3,350	1
823	2.50	1	1 3/8	24	6,300	2
824	2.75	1 1/2	1 7/8	24	8,400	1 1/2
825	3.00	2	2 3/8	24	12,300	2 1/2
826	3.25	2 1/2	2 7/8	24	15,400	2 1/2
827	3.50	3	3 3/8	24	15,400	3
828	3.75	3 1/2	3 7/8	24	15,400	3
36-Inch—Double Weave						
933	\$4.00	1	1 3/8	36	10,500	2
934	4.25	1 1/2	1 7/8	36	12,500	3
935	4.50	2	2 3/8	36	18,500	4
936	4.75	2 1/2	2 7/8	36	24,500	4 1/2
937	5.00	3	3 3/8	36	27,700	7
938	5.25	3 1/2	3 7/8	36	27,700	6

Reinforced Flexible



24-Inch—Double Weave						
1023	\$4.60	1	1 3/8	24	10,500	2 1/2
1024	5.10	1 1/2	1 7/8	24	12,600	3
1025	5.60	2	2 3/8	24	18,500	3 1/2
1026	6.10	2 1/2	2 7/8	24	24,500	5
1027	6.60	3	3 3/8	24	33,500	5 1/2
1028	7.10	3 1/2	3 7/8	24	33,500	6
36-Inch—Double Weave						
1033	\$6.10	1	1 3/8	36	10,500	2 1/2
1034	6.60	1 1/2	1 7/8	36	12,600	3
1035	7.10	2	2 3/8	36	18,500	4 1/2
1036	7.60	2 1/2	2 7/8	36	24,500	5 1/2
1037	8.10	3	3 3/8	36	33,500	6
1038	8.60	3 1/2	3 7/8	36	33,500	7
48-Inch—Double Weave						
1043	\$7.60	1	1 3/8	48	10,500	3 1/2
1044	8.10	1 1/2	1 7/8	48	12,500	4
1045	8.60	2	2 3/8	48	18,500	5 1/2
1046	9.10	2 1/2	2 7/8	48	24,500	6 1/2
1047	9.60	3	3 3/8	48	33,500	7
1048	10.10	3 1/2	3 7/8	48	33,500	8

Multiple Wire



Single Weave						
505	\$1.75	11/32	1/2	8 1/2	500	1
407	1.75	1/2	5/8	8 3/4	900	1
509	1.75	5/8	3/4	8 7/8	1,400	1
712	1.75	11/16	13/16	9 7/8	1,600	1
1220	1.75	13/16	1	9 9/8	2,100	1
2030	1.75	1	1 1/8	9 3/4	2,100	1

## Reliable Steel Cable Grips

Double Eye Luffing



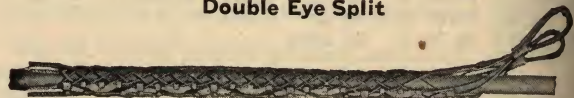
18-Inch—Single Weave						
No.	Each	Min.	Max.	Length Inches	Tensile Strength Pounds	Ship. Wt., Lb.
842	\$2.75	3/4	7/8	18	3,000	1
843	3.00	1	1 3/8	18	6,300	2
24-Inch—Double Weave						
954	\$5.25	1 1/2	1 7/8	24	12,600	2 1/2
955	5.75	2	2 3/8	24	16,800	3
956	6.25	2 1/2	2 7/8	24	24,600	5
957	6.75	3	3 3/8	24	24,600	5
958	7.25	3 1/2	3 7/8	24	24,600	5

Single Eye Luffing



18-Inch—Single Weave						
1842	\$2.75	3/4	7/8	18	3,300	1
1843	3.00	1	1 3/8	18	6,300	2
24-Inch—Double Weave						
1954	\$5.25	1 1/2	1 7/8	24	12,600	3
1955	5.75	2	2 3/8	24	16,800	3
1956	6.25	2 1/2	2 7/8	24	24,600	3 1/2
1957	6.75	3	3 3/8	24	24,600	4
1958	7.25	3 1/2	3 7/8	24	24,600	4

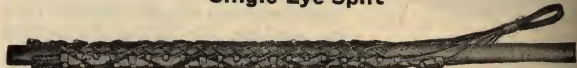
Double Eye Split



18-Inch—Single Weave						
*862	\$3.25	3/4	7/8	18	3,300	1
863	3.50	1	1 3/8	18	6,300	1 1/2
24-Inch—Double Weave						
974	\$5.60	1 1/2	1 7/8	24	12,600	3
975	6.20	2	2 3/8	24	16,800	4
976	6.80	2 1/2	2 7/8	24	24,600	4 1/2
977	7.40	3	3 3/8	24	24,600	5
978	8.00	3 1/2	3 7/8	24	24,600	5 1/2

\*No hooks, rawhide lacing furnished.

Single Eye Split



18-Inch—Single Weave						
1862	\$3.25	3/4	7/8	18	3,300	1
1863	3.50	1	1 3/8	18	6,300	1 1/2
24-Inch—Double Weave						
1974	\$5.60	1 1/2	1 7/8	24	12,600	3
1975	6.20	2	2 3/8	24	16,800	4
1976	6.80	2 1/2	2 7/8	24	24,600	6
1977	7.40	3	3 3/8	24	24,600	5 1/2
1978	8.00	3 1/2	3 7/8	24	24,600	5 1/2

## Reliable Bronze Cable Grips

Used for permanent fastenings and supports for cables.  
Bronze cable grips can be furnished in all standard designs  
and sizes specified for steel.

To obtain prices, add 20 per cent to steel prices for sizes  
1/2-inch diameter to 1 7/8-inch diameter. For sizes 2 inches in  
diameter and larger, add 30 per cent. Example: No. 1023,  
steel price, \$4.60; bronze price, \$5.52.



## Perfection Flat Tape Conduit Rods



In general use by power, electric light, telephone, city fire alarm systems, street railway companies, and contractors in general.

This rod will handle laterals easily. One man can rod 300 feet, using the patent grip handle.

The factor of broken rods has been eliminated. The average time required to rod 500 feet with two men is about twenty minutes, at an average cost of about  $\frac{1}{4}$  cent a running duct foot.

**$\frac{1}{4} \times \frac{1}{16}$ -Inch Size.** Will take right angles in  $1\frac{1}{2}$ -inch conduits. With flexible cleanout leader, ball roller, and adjustable hand grip. On safety holding frame.

In 100 to 500-foot lengths.  
Per 100 Feet..... \$6.00

**$\frac{1}{2} \times \frac{1}{16}$ -Inch Size.** For 2 to 4-inch ducts. Flexible; will take laterals; will rod over another cable in ducts. Has ball roller and sliding rodding hand grip. On safety holding frame.

In 100 to 400-foot lengths.  
Per 100 Feet..... \$11.25

**$\frac{1}{2} \times \frac{1}{8}$ -Inch Size.** For 2 to 4-inch ducts. Rigid; for long runs; flexible enough to take laterals. Has ball roller which indicates clearance in duct where one or more cables are in and more cable is desired. Furnished with adjustable hand grip. On safety holding frame.

In 100 to 400-foot lengths.  
Per 100 Feet..... \$15.75

**$\frac{3}{4} \times \frac{1}{16}$ -Inch Size.** For 2 to 4-inch ducts. This size is more flexible than the  $\frac{1}{2} \times \frac{1}{8}$ -inch size. Has ball roller and adjustable hand grip. On safety holding frame.

In 100 to 400-foot lengths.  
Per 100 Feet..... \$12.75

**$\frac{3}{4} \times \frac{1}{8}$ -Inch Standard Size.** A standard duct size for long runs. For 3 to 4-inch ducts. This rod replaces the old type wooden rod.

Tensile strength, 225,000 pounds per square inch. Breaking strength, 21,000 pounds. On galvanized safety holding frame.

In 100 to 500-foot lengths.  
Net Weight per 100 feet, 33 pounds.

Per 100 Feet..... \$22.00

**$1 \times \frac{1}{8}$ -Inch Special Size.** A rigid, yet sufficiently flexible rod to take laterals. On safety holding frame.

In 100 to 500-foot lengths.  
Per 100 Feet..... \$28.00

## Parts

\*†Large Ball Feeding Rollers.....each \$2.00  
\*†Small Ball Feeding Rollers.....each 2.00  
Revolving Spear Heads, Large.....each 5.00  
Revolving Spear Heads, Small.....each 4.00

\*Take laterals easily and slide rod through ducts rapidly.

†For 2 to 4-inch ducts.

‡For small ducts or where rodding is done over another cable in ducts.

## Cope Underground Conduit Tools

## Jar Hammers



Used in connection with all types of cutters for removal of stubborn obstructions such as heavy silt, cement, etc.

Made of 2-inch diameter steel tubing with heavy piston and hammer working inside the cylinder.

Size Stroke.....inches 8  
Each..... \$22.80

## Laying Mandrels



Body is of well seasoned maple. Rear end is equipped with a leather wiping washer and the forward end with a counter-sunk steel hoop and tool steel cutting edge.

Length, 36 inches. In diameters to fit any size conduit.  
Size.....inches 3  $3\frac{1}{2}$  4 6  
Each..... \$15.00 17.20 19.00 27.60

## Test Mandrels



## Round

## Square

Made to exact size for testing conduits after laying. Has tool steel cutting ends to remove concrete or other light obstructions. Length, 12 inches.

Size.....inches 3  $3\frac{1}{2}$  4  
Round.....each \$9.50 10.50 11.50  
Square.....each 11.50 12.50 13.50

## Flexible Mandrels



For testing conduits having bends through which a rigid mandrel would not pass. Constructed of tool steel discs, mounted on a flexible wire rope, securely babbitted to the heavy socket eyes. Will withstand a pull of over 5000 pounds.

Size.....inches 3  $3\frac{1}{2}$  4  
Each..... \$30.50 34.30 38.30

## Pickups



Used to recover rods or tools lost in the conduit. Can also be used on long pulls where it is desirable to work from both ends.

Pickup has two steel shutters with beveled notches and spring action, so that it will recover and catch firmly no matter what position it may be in within the conduit.

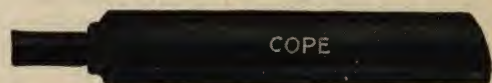
Each..... \$28.80

## Rod Grapples



Used where long lines of conduit are to be rodded. Permits rodding from both ends of conduit and provides positive connection where they meet. Several hooks engage opposite ends  
Each..... \$14.50

## Sand Scoops



For removing loose sand and silt which may enter the conduit and prove harmful to lead sheathed cables.

Made of light weight tubing.  
Size.....inches 3x15  $3\frac{1}{2}$ x18 4x20  
Each..... \$11.40 13.30 15.20



Cope Wire Brush Cleaners



Single End



Double End

Brush has a flat tempered steel bristle which will remove all sand and other light obstructions.

Made for all size conduits with either a rod connection or socket eyes on both ends.

Diameter.....inches	3	3½	4	5
Single End.....each	\$4.80	\$5.30	\$5.80	\$6.60
Double End.....each	5.30	5.80	6.50	7.30

Diamond Empire Conduit and Sewer Rods



Straight sticks are furnished of uniform diameter 1 inch throughout.

Couplings are malleable iron. Ends are interchangeable. Axles are machined from brass rod, solid head and shouldered on coupling. Wheels are machined at hub to fit axle and shaped to conform to curve of duct. The rod is made of best selected straight grain well seasoned hickory, tapering to 1 inch at opening.

Length.....feet	3	4
With Wheels.....each	\$1.80	\$2.00
Without Wheels.....each	1.55	1.75

Diamond Screw Duct Rods



Couplings are made of government bronze. The hickory used in the shaft is selected stock, well seasoned. Threads are accurately cut to ¾-inch U.S.S., 10 threads per inch. Rivets are countersunk. Hickory shafts are 7/8 inch in diameter.

No. 855, 3-Foot Length.....each	\$1.65
No. 856, 4-Foot Length.....each	1.80

Cope Quick Coupling Conduit Rods



Made from annealed malleable iron. Power-driven and securely riveted on the stick.

Stick is made of hickory.

Available in 2, 3, and 4-foot lengths with a straight shaft of 1-inch diameter. The 3 and 4-foot lengths are also made with a swell center stick, having a diameter of 1¼ inches in the center, tapering to 1-inch diameter.

Description	Each	Wt. Lb. per 100
2-Foot Rod, Straight Stick.....	105	
3-Foot Rod, Straight Stick.....	205	
4-Foot Rod, Straight Stick.....	245	
3-Foot Rod, Swell Center Stick.....	230	
4-Foot Rod, Swell Center Stick.....	275	

Cope Rod Adapters



Designed to make the Quick coupling rod available for use with any conduit tool equipped for screw coupling or vice versa.

Weight, 2 pounds.

Each..... \$3.00

Cope Screw Coupling Conduit Rods



Furnished in 3 or 4-foot lengths.

Coupling is made of cast bronze, octagon-shaped, with a ¾-inch U.S. standard thread.

Stick is made of hickory, and is available with either a 7/8 or 1-inch diameter. Also furnished with swell center, 1-inch diameter stick.

Diam. In.	Description	Each	Wt. Lb. per 100
7/8	3-Foot Rod, Straight Stick.....	155	
7/8	4-Foot Rod, Straight Stick.....	185	
1	3-Foot Rod, Straight Stick.....	195	
1	4-Foot Rod, Straight Stick.....	235	
1	3-Foot Rod, Swell Center Stick.....	220	
1	4-Foot Rod, Swell Center Stick.....	265	

Cope Iron Cable Dressers

Used to produce a smooth finish on splices or sleeves when placed over any unevenness in the splice. Made of 2x¼-inch carbon steel. Handle is movable.

Available in two sizes: No. 1 for cable up to 3½ inches in diameter; No. 2 for 4½-inch cable. Weight, 1 pound.

No. ....	1	2
Each.....	\$3.25	3.75

Cope Criss Cross Cleaners

Cleans conduit. Has a multitude of edges at right angles to the surface of the conduit to assure a thorough cleaning.

Flexible spring formation makes it self-conforming.

Adjusting nuts on each end permit nominal adjustments in the outside diameter. Furnished in any diameter. Weight, 5 pounds.

Size.....inches	3	3½	4
Each.....	\$11.50	12.50	13.50

Cope Washer Duct Cleaners



For a final wiping and cleaning of the conduit.

Consists of a flexible wire rope with tube spacers separating leather washers of graduated sizes, faced with steel. Has heavy socket eyes fastened on both ends. Size, 3 inches.

Furnished in any diameter. Weight, 8 pounds.

Each..... \$22.70

Cope Sag Gages

Used when stringing open wire.

A sag gage is hung on the cross arm at each end of the span and the target is set at a pre-determined height on the calibrated slot in the gage.

The sag in the line is conditional upon the size of wire and length of span.

The target folds when not in use, and when open presents a face 12x2 inches, painted bright yellow.

Calibrations, 4 to 18 inches.

Weight, 1½ pounds.

Each..... \$3.80





## Cope Rod Puller

Used for rodding long conduit lines where the weight of the rod becomes a controlling factor.

Made of malleable iron.

Can be placed on the rod at any point and can be used for either pulling or pushing by reversing the tool.

It exerts a firm pressure on the stick without cutting or otherwise injuring the rod.

Weight, 2½ pounds.

Each..... \$4.70

## Cope Push-Pull Jacks



Used for additional slack in a manhole or to take up slack in overhead cable installation. Converted into a pusher by reversing the drawbar.

Made of high carbon, heat treated steel.

Leverage, 30 to 1. Safe capacity, 4000 pounds. Double action makes a secure lock every half inch. Furnished with drop-forged clevis and bronze double shackle swivel.

Weight, 12 pounds.

Each..... \$40.00

## Type C Cope Cable Benders



Designed to form and bend large cable in underground construction.

May also be used for straightening cable.

Adjustable yoke provides seven positions of handle and permits work in close quarters.

Simply pulling back on sleeve releases ratchet and permits handle to be moved in any position.

Yoke and arm are alloy steel castings with extension handle of steel tubing.

Wide bearing surface and rounded edges of shoes prevent injury or deformation of cable sheath.

Overall dimension, 36 inches.

Weight, 14 pounds.

Type C.....each \$28.40

## Cope Cable Puller

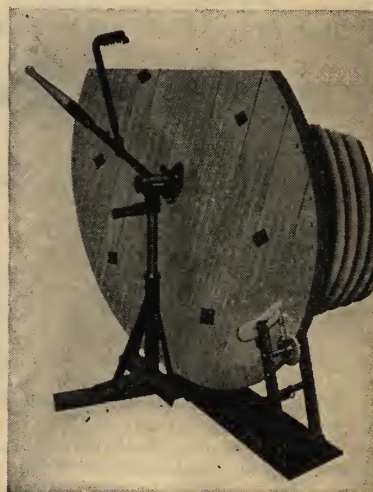


Used with the reel turner and reel brake in pulling out 2½ to 3-inch cable.

The grips or clamps are alloy steel castings designed to exert a positive grip on the cable when in the pulling position. Slackening of the winch or hoist permits it to be released and slid back on the cable for another pull. The grips will not cut or deform the cable. Weight, 30 pounds.

Each..... \$50.00

## Cope Cable Pulling Equipment



### Safety Reel Brake

Used in the removal of cable to eliminate back-lash.

One man, while handling the turning bar can manage the re-reeling operation.

Adjustable to different sizes of reels. Rings are provided on the base plate for tying to the jack.

Weight, 90 pounds.

Each..... \$72.50

### Reel Turner

Used to re-reel cable.

One man can safely and easily handle the turning of the reel, taking up the cable as it is pulled from the conduit.

Adjustable to any standard size reel. Weight, 23 pounds.

Each..... \$50.00

## Cope Aerial Tents



For protection of aerial cable during installation or repair.

Made of 10-ounce U. S. Army duck double hemmed at each seam.

Framework is made of steel and pipe sections which fold into a compact bundle.

Open dimensions, 52x48 inches.

Length of 104 inches gives plenty of headroom and extends well below the working platform.

Tent is lashed to working platform with ropes provided on each corner of frame. A locking device securely fastens tent frame to the messenger strand.

Weight, with frame, 40 lb.

Each..... \$70.00



## Cope Cable Pulling Rigging



Type B

Designed to provide a direct pull through the conduit. When in the manhole, the lower sheave is located opposite the conduit with the upper sheave above the street line to lead to the winch.

Constructed of 6-inch 8.2-pound channel, welded. The two sheaves with 10-inch minimum diameter have large, well finished grooves to prevent injury to the cable. Each sheave is mounted on a 1-inch steel shaft.

Length.....feet	9	10	12
Type B.....each	\$60.50	64.75	72.00

## B &amp; L Star Brand Pulling-In Frames



No. PU 26

The pulling-in frame is constructed to help install cable in underground ducts.

The sheave support consists of two 13-foot sections of 6-inch steel channels, fastened together at each end by two sections of 4-inch steel channels. Each 13-foot section is provided with 24 holes on 6-inch centers in order to allow the two sheaves to be adjusted to the proper position on the sheave support for any cable installation.

Two aluminum sheaves are used with each sheave support: one large sheave and one small sheave which have diameters of 20 and 5 $\frac{3}{4}$  inches respectively. The diameter and groove of large sheave are of sufficient size to allow a cable to be pulled over it without harming the cable sheath, when this procedure is necessary to obtain sufficient cable in the manhole for splicing. An important feature is that each sheave is provided with Graphite Bronze self-lubricating bushing which makes the use of lubricant unnecessary.

Shipping weight, 260 pounds.

No. PU26, Complete.....

## Cope Ground Tents



Gives full protection to men working in a manhole under adverse weather conditions.

Made of 10-ounce U.S. Army duck.

Framework is made of  $\frac{1}{2}$ -inch heavy pipe, welded, and has hot dipped galvanized finish.

Open dimensions, 82 $\frac{1}{2}$  inches square and 77 inches high. An additional flap,

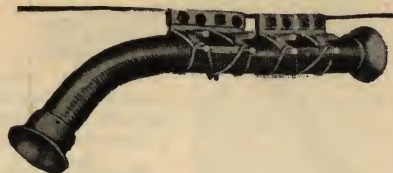
15 $\frac{1}{2}$  inches wide, extends around the tent on the ground. Legs of tent fold up in two sections inside the framework to form a compact package approximately 38x38x9 inches.

Weight: frame, 45 pounds; cover, 25 pounds.

Frames and Covers, Complete.....each \$72.50

Frames and covers may be purchased individually.

## Cope Aerial Cable Feeders and Straighteners



For pulling in aerial cable.

The wide mouth aluminum bells and flexible steel tubing prevent danger to cable or sheath. Holding clamps which securely grip messenger wire can also be used for dead-ending and splicing work. Interior surfaces are smoothly finished to accommodate up to 3-inch cables.

Complete with 6-Foot Tube, 2 Pairs Malleable Iron Clamps.....each	\$38.25
Extra Lengths of Tubing.....per foot	1.50
Holding and Splicing Clamps.....per pair	9.00

## Cope Pull-In-Guide or Cable Feeders

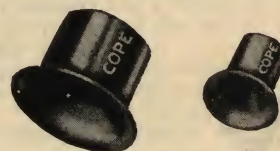


Used to lead the cable from the street reel into the mouth of the conduit without injury.

Constructed with heavy brass bell, completely finished, securely fixed to a length of heavy steel tubing. The conduit end has a steel sleeve which will accommodate various size brass nozzles to fit the several sizes of conduit.

Guides, Length.....feet	9	12	16	20			
Each.....	\$86.00	95.00	106.25	118.75			
Nozzles, For Conduit.in.	2	2½	3	3½	4	4½	5
Each.....	\$18.25	18.25	18.25	18.25	21.00	23.75	23.75

## Cope Cable Drawing-In Protectors



A heavy brass bell carefully machined and finished. To be used in the mouth of the conduit to protect the lead sheath of the cable from injury while being drawn into the conduit.

	Round						
Diameter.....inches	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	
Each.....	\$7.75	8.50	9.50	11.00	12.50	14.25	
	Square						
Size.....inches					3	4	
Each.....					\$9.50	12.50	

## No. 860 Diamond Manhole Cover Hooks



This is a useful tool for the subway construction force. It is designed to easily raise a heavy manhole cover by prying the wedged point end of the hook under the groove provided in the cover for the purpose.

The hook is made of an excellent quality of electric tool steel suitably hardened at and adjacent to the hook to prevent its bending, and at the same time sufficiently tough to prevent breaking off.

No. 860.....each \$1.50



## Cope Pneumatic Fish Lines



For rodding long run round conduit ranging in size from 3 to 5 inches.

## Reel Unit

The reel is equipped with crank and gear for re-reeling. Contains 1000 feet of  $\frac{3}{8}$ -inch stranded steel cable having a tensile strength of 920 pounds. Only one reel unit is required for use in any size conduit.

## Conduit Seal

Faced with rubber which is expanded to grip the interior surface of the conduit to prevent the loss of air and to support the reel during operation. Expansion range, 1 inch. Two sizes: No. 3, 3 to 4-inch; No. 4, 4 to 5-inch conduit.

## Projectile

Consists of a pair of rubber cups fastened together. When compressed air is introduced, the projectile progresses 100 feet per minute with a pressure of less than 10 pounds. Since rubber cups must have a snug fit, each projectile will fit only one size conduit. Furnished with one projectile for any one size ranging from 3 to 5 inches.

Furnished with carrying case.

Weight, 100 pounds.

Complete.....	each	\$205.00
Additional Seals.....	each	72.50
Additional Projectiles.....	each	20.00

Up to 2000 feet of reel cable can be furnished at additional cost.

## No. 220 Simplex Manhole Sheaves



For pulling cable or carrying the winch line at right angles. Used on end of a truck or over edge of manhole in connection with a snatch block in the manhole, eliminating use of manhole skids.

Will handle cable up to 3 inches in diameter, or any size winch line.

Furnished with a  $\frac{1}{4}$ -inch chain, 24 inches long, with special hook for anchoring.

No.....	220
Each.....	\$106.00
Large Sheave Diameter.....	inches $7\frac{3}{4}$
Large Sheave Width.....	inches 3
Small Sheave Diameter.....	inches $4\frac{3}{4}$
Small Sheave Width.....	inches 3
Weight.....	pounds 100

## No. PU 27 B &amp; L Star Brand Cable Sheaves and Shackles



The cable sheave and shackle may be used in place of the pulling-in frame when it is possible or advisable to locate the rear of the truck directly over the manhole. The device is attached to the manhole pulling iron and the winch line goes over a roller or sheave at the rear of the truck then down and under the cable sheave and shackle and thus into the duct. The sheave is made of special aluminum alloy for light weight, 20 inches in diameter, with a groove large enough to take a  $2\frac{5}{8}$ -inch cable. The hook is drop-forged.

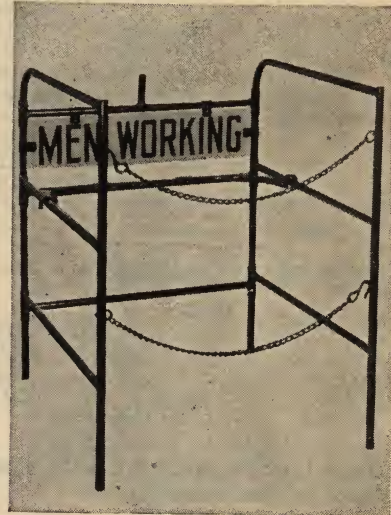
Complete, Approximate Weight, 65 Pounds.....	\$180.00
Frame, Complete, less Sheave, Approx. Wt., 37 lb. ea.	35.00
20-Inch Diam. Aluminum Sheave, Approx. Wt., 28 Lb.....	each 145.00

## Cope Manhole Guard Rails

Made of  $\frac{3}{4}$ -inch standard black steel pipe with seamless steel tubing sleeves. Made with a completely welded construction.

Unless otherwise ordered, all rails are painted with two coats of Signal Red Enamel.

## Type 264



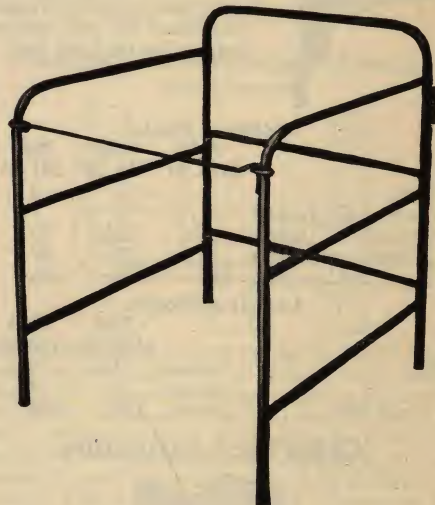
This guard closely follows the design of the American Telephone and Telegraph Company's standard. The bow-shaped wing brace holds the rail absolutely rigid against collapse when in place, leaving the open side entirely free for work. The chains allow this rail to be padlocked to pole, etc. Can be supplied with or without "men working" panels.

Open 32x32x42 inches high, folded 32x2x42 inches.

Weight, 49 pounds.

Type 264.....	each \$30.75
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## Type 110



This is somewhat lighter construction than the Type 264 while still holding to the same material.

It is equipped with flag holder and steel hook for holding it rigid while open.

Open 32x32x42 inches high, closed 32x3x42 inches.

Weight 40 pounds.

Type 110.....	each \$23.75
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## Peirce Underground Cable Racks

Hot Galvanized



Rack section is made in three lengths which can be combined into almost any desired length. Section is made from  $1\frac{1}{2} \times \frac{3}{4} \times \frac{3}{16}$ -inch open hearth steel channel, amply strong to support the heaviest cable. Should be fastened to manhole wall with  $\frac{1}{2} \times 4$ -inch Peirce Expansion Bolts.

Hook is cut from open hearth steel T section and has a smooth, well rounded top surface  $1\frac{1}{2}$  inches wide which will not injure the sheaths of cable. Steel size,  $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{16}$  inches. Easily attached and with the weight of the cable on it, holds securely to the channel back.

## Racks

No.	*2124	*2125	*2126
Per 100	\$55.12	98.25	115.81
No. of Holes	8	14	18
Hook Hole Spacing	inches $1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$
Overall Length	inches 15	24	30
Bolt Hole Spacing	inches $13\frac{1}{2}$	$22\frac{1}{2}$	$28\frac{1}{2}$
Ship. Wt. per 100	lb. 155	265	315

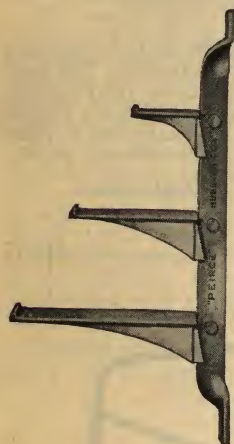
## Hooks

No.	*2131	*2132	*2133
Per 100	\$52.51	75.39	92.97
Extension from Face of Rack	inches 4	$7\frac{1}{2}$	10
Ship. Wt. per 100	pounds 61	110	135

†A.T. & T. Co. Std. \*Western Union Std.

## Hubbard Underground Cable Racks

Hot Galvanized



Furnished to accommodate from one to four hooks. Combinations may be used for a greater number of hooks if desired.

Hook furnished in three lengths made from certified malleable iron, hot galvanized. Hook is placed in position by raising the outer end slightly above horizontal so that the supporting lug will engage the opening in the rack. It is then moved to alignment and allowed to drop into place where it is held against side movement by web braces which engage the back on both sides.

## Locktype Racks

No.	2281	2282	2283	2284
Per 100	\$153.04	208.59	251.98	294.47
No. of Holes	1	2	3	4
Hook Hole Spacing	inches 7	7	7	7
Length Overall	inches $14\frac{3}{4}$	$21\frac{3}{4}$	$28\frac{3}{4}$	$35\frac{3}{4}$
Bolt Hole Spacing	inches 13	20	27	34
Ship. Wt. per 100	pounds 280	385	535	645

## Locktype Hooks

No.	2254	2258	2262
Per 100	\$139.25	177.33	226.68
Extension	inches $4\frac{1}{4}$	$8\frac{1}{4}$	$12\frac{1}{4}$
Width	inches 2	2	2
Ship. Wt. per 100	pounds 183	260	341

## Cable Rack Insulators



No.	For Peirce Racks	For *Hubbard Racks	2123
Per 100	\$31.45	31.44	75.63
Radius for Cable	in. $1\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{4}$
Length Along Hook	in. 3	3	$3\frac{15}{16}$
Width	in. $2\frac{3}{4}$	3	3
Ship. Wt. per 100	lb. 105	129	160

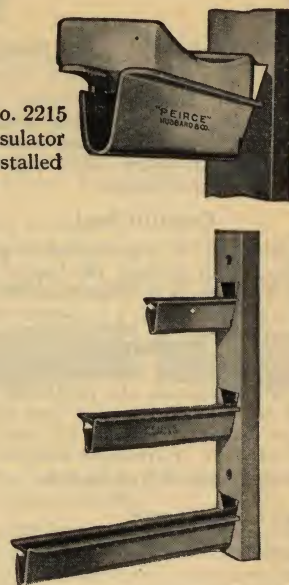
\*For Locktype hooks.

## Peirce V-Type Cable Racks

Hot Galvanized

Insulator No. 2215

No. 2215 Insulator Installed



Hooks are held rigidly in a horizontal position. No. 2291 hook accommodates one insulator, No. 2292 takes two insulators, No. 2293 takes three insulators, and No. 2294 takes four insulators.

The same number of either size insulator listed will fit on any hook. When more than one insulator is used, they are generally spaced an inch or more apart to give mechanical and electrical clearance.

A stop is furnished on each hook to prevent the insulators from sliding off the end.

No.	Per 100	No. of Slots	Slot Spacing	Overall Length	Flat Steel or Channel Size	Approx. Ship. Wt. Lb. per 100
2471	\$79.67	2	8	8	$4 \times 1\frac{1}{2} \times \frac{3}{16}$	360
2472	169.73	2	8	16	$4 \times 1\frac{1}{2} \times \frac{3}{16}$	685
2473	225.27	3	8	24	$4 \times 1\frac{1}{2} \times \frac{3}{16}$	1010
2474	271.71	4	8	32	$4 \times 1\frac{1}{2} \times \frac{3}{16}$	1335
2475	316.47	5	8	40	$4 \times 1\frac{1}{2} \times \frac{3}{16}$	1660
2476	385.04	6	8	48	$4 \times 1\frac{1}{2} \times \frac{3}{16}$	1985

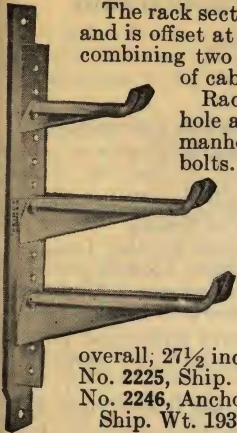
## Hooks

No.	Per 100	Extension From Face of Rack	Overall Length	Steel Size Gage	Approx. Ship. Wt. Lb. per 100
2291	\$64.76	$5\frac{1}{4}$	$6\frac{5}{8}$	12	145
2292	78.66	$10\frac{1}{4}$	12	12	265
2293	100.03	$16\frac{5}{8}$	18	12	385
2294	128.76	$22\frac{5}{8}$	24	12	505

## Insulators—White Glaze

No.	Per 100	Radius for Cable	Overall Length	Overall Width	Approx. Ship. Wt. Lb. per 100
2114	\$29.73	$1\frac{3}{4}$	$4\frac{1}{2}$	$2\frac{7}{8}$	170
2115	47.44	$2\frac{5}{8}$	$4\frac{1}{2}$	$2\frac{7}{8}$	160



**No. 2225 Peirce Heavy Cable Racks****Hot Galvanized**

The rack section is  $2\frac{1}{4} \times 2\frac{1}{4} \times \frac{1}{4}$ -inch steel T section and is offset at the lower end for overlapping when combining two racks together. Any desired length of cable rack can be made in this manner.

Rack is provided with  $\frac{1}{16}$ -inch mounting hole at top and bottom and is fastened to manhole walls with  $\frac{1}{2} \times 4$ -inch expansion bolts. Anchor bolt No. 2246 is also used for this purpose. It consists of hook head which is cemented in masonry, opposite end being threaded and equipped with nut for attachment.

Number of holes, 14. Hook hole spacing,  $1\frac{1}{2}$  inches; bolt hole spacing,  $25\frac{1}{2}$  inches. Length

overall,  $27\frac{1}{2}$  inches.

No. 2225, Ship. Wt. 800 Pounds... per 100 **\$223.63**

No. 2246, Anchor Bolt,  $\frac{5}{8} \times 6$  Inches,

Ship. Wt. 193 Pounds... per 100 **26.93**

**Peirce Underground Heavy Cable Rack Hooks****Hot Galvanized**

Made of one-piece  $\frac{3}{16}$ -inch steel pressed to channel shape. Edges are rounded, and there is a smooth surface for cable to rest upon. Width,  $2\frac{1}{2}$  inches.

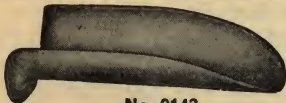
Used with or without an insulator.

No. ....	2231	2232	2233
Per 100.....	<b>\$122.17</b>	<b>156.19</b>	<b>222.24</b>
Extension.....inches	6	$10\frac{1}{2}$	15
Shipping Weight per 100...pounds	180	308	489

**Peirce White Glaze Insulators**

Insulator fits snugly on cable hooks. Weight of cable holds it in place. Width,  $3\frac{3}{4}$  inches.

No. ....	2117	2118	2121
Per 100.....	<b>\$70.87</b>	<b>78.66</b>	<b>86.28</b>
Radius for Cable.....inches	$\frac{3}{4}$	$1\frac{1}{2}$	$2\frac{5}{8}$
Length Along Hook.....inches	$2\frac{1}{4}$	3	$3\frac{3}{4}$
Shipping Weight per 100...pounds	90	115	125

**Hubbard Cable Duct Shields****Zinc and Hot Galvanized Steel****No. 9142**

This shield is used to protect cable sheaths at the entrance of ducts.

**.050-Inch Sheet Zinc**

No.	Per 100	Diameter Inches	Length Inches	Shipping Weight Pound per 100
9141	<b>\$37.18</b>	3	6	63
9122	47.16	3	8	68
9123	59.44	3	10	84
9125	38.81	$3\frac{1}{4}$	6	53
9126	50.59	$3\frac{1}{4}$	8	71
9127	63.37	$3\frac{1}{4}$	10	78
9129	41.23	$3\frac{1}{2}$	6	55
9130	53.88	$3\frac{1}{2}$	8	75
9131	67.29	$3\frac{1}{2}$	10	94
9133	45.25	4	6	62
9134	59.80	4	8	82
9144	74.11	4	10	103
9137	50.95	$4\frac{1}{2}$	6	68
9138	67.02	$4\frac{1}{2}$	8	91
9139	83.33	$4\frac{1}{2}$	10	115

**No. 20-Gage Sheet Steel**

*9140	<b>\$47.67</b>	3	6	67
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**No. 12-Gage Sheet Steel**

9142	<b>\$74.87</b>	$2\frac{5}{8}$	9	187
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\*A. T. & T. Co. Std.

**Hubbard Manhole Ladders****Hot Galvanized**

Made to the specifications of the largest telephone and central station companies.

Rung spacing, 12 inches. Width inside, 12 inches.

Rungs are  $\frac{5}{8}$  inch round.

No.	Per 100	Overall Feet	No. of Rungs	Ship. Wt. Lb. Per 100
*9110	<b>\$953.54</b>	6	5	2500
*9111	1063.71	$6\frac{1}{2}$	6	2700
*9112	1309.63	8	7	3300
*9113	1532.51	10	9	4200
*9114	1825.63	11	10	4600
*9115	1963.27	12	11	5000
*9116	2166.53	13	12	5400
*9117	2289.88	14	13	5900

†A. T. & T. Co. Std.

**No. 9145 Hubbard Plain Dowel Pins****For Clay Conduit**

Used in the ends of multiple duct clay conduit for preserving alignment of adjacent sections. Made of  $\frac{5}{16}$ -inch diameter steel with a shoulder in the center. Overall length,  $3\frac{3}{4}$  inches. Collar diameter,  $\frac{5}{8}$  inch.

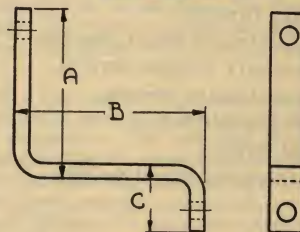
No. 9145, Ship. Wt. 9 Pounds... per 100 **\$3.39**

**Hubbard Pulling-In Irons****For Manholes****Hot Galvanized**

This iron is set into the concrete or brick walls of street vaults opposite duct entrances to provide a convenient and strong attachment for block and tackle when installing or removing cables.

No. ....	*9119	*9120
Per 100.....	<b>\$168.66</b>	<b>175.12</b>
Diameter Steel.....in.	$\frac{7}{8}$	$\frac{7}{8}$
Extension from Wall.....in.	9	12
Ship. Wt. per 100.....lb.	550	660

†A. T. & T. Co. Std. \*Western Union Std.

**Hubbard Cable Rack Extensions****Hot Galvanized**

Used for mounting racks away from the wall because of obstructions, limited space or to escape water seepage. If used away from wall, racks can be mounted on approximately  $4\frac{1}{2}$  inches less wall space than is needed for the rack. If extension is turned around and mounted, it will occupy 10 to 13 inches more wall space than the length of rack.







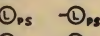
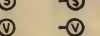

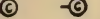
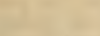
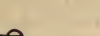
Mounting is generally accomplished by means of two No. 13,  $\frac{1}{2} \times 4$ -inch Peirce Expansion Bolts. Furnished 1 and  $1\frac{1}{4}$  inches wide in  $\frac{1}{2}$ -inch stock. Mounting holes are for  $\frac{1}{2}$ -inch bolts. Order two for each rack mounting.

No. ....	2101	2102
Per 100.....	<b>\$39.96</b>	<b>75.50</b>
Steel Size.....inches	$\frac{1}{2} \times 1$	$\frac{1}{2} \times 1\frac{1}{4}$
Dimension A.....inches	$4\frac{1}{4}$	$5\frac{3}{4}$
Dimension B.....inches	$3\frac{5}{8}$	$6\frac{1}{8}$
Dimension C.....inches	$2\frac{1}{4}$	$2\frac{3}{8}$
Diameter Holes.....inches	$\frac{3}{16}$	$\frac{3}{16}$
Ship. Weight per 100.....pounds	176	270


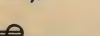
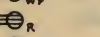
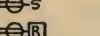

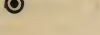
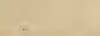



## Electrical Wiring Symbols

## General Outlets

Symbol	Description
	Outlet.
	Blanked Outlet.
	Drop Cord.
	Electrical Outlet—for Use Only When Circle Used Alone Might Be Confused with Columns, plumbing symbols, Etc.
	Fan Outlet.
	Junction Box.
	Lamp Holder.
	Lamp Holder with Pull Switch.
	Pull Switch.
	Outlet for Vapor Discharge Lamp.
	Exit Light Outlet.
	Clock Outlet (Specify Voltage).

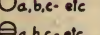
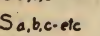
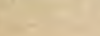
## Convenience Outlets

	Duplex Convenience Outlet.
	Convenience Outlet Other Than Duplex. 1=Single, 3=Triplex, Etc.
	Weatherproof Convenience Outlet.
	Range Outlet.
	Switch and Convenience Outlet.
	Radio and Convenience Outlet.
	Special Purpose Outlet (Desc. in Spec.)
	Floor Outlet.

## Switch Outlets

S	Single Pole Switch.
S <sub>2</sub>	Double Pole Switch.
S <sub>3</sub>	Three Way Switch.
S <sub>4</sub>	Four Way Switch.
S <sub>D</sub>	Automatic Door Switch.
S <sub>E</sub>	Electroliner Switch.
S <sub>K</sub>	Key Operated Switch.
S <sub>P</sub>	Switch and Pilot Lamp.
S <sub>CB</sub>	Circuit Breaker.
S <sub>WCB</sub>	Weatherproof Circuit Breaker.
S <sub>MC</sub>	Momentary Contact Switch.
S <sub>RC</sub>	Remote Control Switch.
S <sub>WP</sub>	Weatherproof Switch.
S <sub>F</sub>	Fused Switch.
S <sub>WF</sub>	Weatherproof Fused Switch.

## Special Outlets


















	Any Standard Symbol As Given Above with the Addition of a Lower Case Subscript Letter May Be Used to Designate Some Special Variation of Standard Equipment of Particular Interest In a Specific Set of Architectural Plans.
	
	

When Used They Must Be Listed In the Key of Symbols On Each Drawing and If Necessary Further Described In the Specifications.

























These symbols have been prepared by a technical sub-committee of ASA, Committee Z32, Standardization of Graphical Symbols and Abbreviations for use on Drawings, and have been submitted for approval as an American Standard to replace the symbols shown in ASA C10-1924.


The electrical symbols for architectural plans as finally approved by the ASA as an American Standard will be announced by that body in due course of time.

## Panels, Circuits and Miscellaneous

Symbol	Description
	Lighting Panel.
	Power Panel.
	Branch Circuit—Concealed in Ceiling or Wall.
	Branch Circuit—Concealed in Floor.
	Branch Circuit Exposed.
	Home Run to Panel Board. Indicate Number of Circuits by Number of Arrows.
	Note: Any Circuit without Further Designation Indicates a Two-Wire Circuit. For a Greater Number of Wires Indicate As Follows:  (3 Wires),  (4 Wires), Etc.
	Feeders. Note: Use Heavy Lines and Designate by Number Corresponding to Listing in Feeder Schedule.
	Underfloor Duct & Junction Box—Triple System. Note: For Double or Single Systems Eliminate One or Two Lines. This Symbol Is Equally Adaptable to Auxiliary System Layouts.
	Generator.
	Motor.
	Instrument.
	Power (Or Draw to Scale) Transformer.
	Controller.
	Isolating Switch.

## Auxiliary Systems

	Push Button.
	Buzzer.
	Bell.
	Annunciator.
	Outside Telephone.
	Interconnecting Telephone.
	Telephone Switchboard.
	Bell-Ringing Transformer.
	Electric Door Opener.
	Fire Alarm Bell.
	Fire Alarm Station.
	City Fire Alarm Station.
	Fire Alarm Central Station.
	Automatic Fire Alarm Device.
	Watchman's Station.
	Watchman's Central Station.
	Horn.
	Nurse's Signal Plug.
	Maid's Signal Plug.
	Radio Outlet.
	Signal Central Station.
	Interconnection Box.
	Battery.
	Auxiliary System Circuits.

Note: Any Line without Further Designation Indicates a 2-Wire Circuit. For a Greater Number of Wires Designate with Numerals in Manner Similar to —12-No. 18W-3/4"-C., or Designated by Number Corresponding to Listing in Schedule.

Special Auxiliary Outlets.

Sub-Script Letters Refer to Notes on Plans or Detailed Description in Specifications.

 a,b,c



## Definitions of Electrical Terms

**Air Gap.** Air space in a magnetic circuit through which the magnetic flux must pass. It should be as short as possible as the reluctance of air is very high.

**Ampere.** The unit of current flow of electricity. It means the same with reference to electricity, as does the number of gallons per minute, when referring to the flow of water through a pipe. A 60-watt, 110-volt tungsten lamp takes 0.545 ampere to make it give the proper light.

**Ampere-Hour.** This expression is used to describe the capacity of a storage battery and corresponds to the number of gallons a tank will hold when talking about water. Ampere-hours are obtained by multiplying the number of amperes flowing by the length of time in hours which they flow. Example: How many ampere-hours are required to light four 60-watt, 110-volt tungsten lamps for 3 hours. As stated above one lamp takes 0.545 ampere, so four lamps takes 4 times 0.545 or 2.18 amperes; 2.18 times 3 equals 6.54 ampere-hours.

**Ampere-Turns.** Turns of wire in a coil times the ampere current flowing. It is used as a measure of magnetizing force, which varies directly as the number of ampere-turns.

**Apparent Load or Apparent Power.** Current in amperes times electromotive force in volts gives apparent load in watts. Used for alternating current circuits because the current flow is not in phase with the electromotive force, hence, amperes times volts does not give the real energy load.

**Automatic Battery-Charging Switch.** An automatic switch for opening the circuit between the battery and the generator when for any reason the generator voltage drops below battery voltage. This switch also closes automatically when the generator voltage is at the proper value for charging the battery or lighting the lamps.

**Candlepower.** The unit for measuring strength of a source of light. The usual practical standard is a carefully standardized incandescent lamp, comparison being made by means of a photometer. Ordinary tallow candle gives about 1 c.p.; flat wick oil lamp, 6 c.p.; 60-watt tungsten bulb, 40 c.p.

**Foot-Candle.** Same as candle-foot. The illumination produced at 1 foot from a light of 1 candlepower; illumination varies as the strength of the light source and inversely as the square of the distance from that light source.

**Circular-Mil.** The area of a circle 0.001 in diameter. The circular mils area of a wire varies as the square of the diameter: For No. 36 B & S wire, the diameter is 0.0005 in. and the area 25 circular-mils. For No. 14 wire, the diameter is 0.06408 in. or 64.08 mils and the area is 64.08<sup>2</sup> or 4107 cir. mils.

**Coil Wound Motor.** One in which the armature winding is made up in formed coils then placed on the core and the coil leads connected in proper order.

**Commutating Pole.** A small pole piece on motor generator, usually placed midway between the main pole pieces and provided with a winding to neutralize the magnetic effect of the armature current so as to avoid distortion of the magnetic field with change of load.

**Compensating Winding.** A winding placed on the field poles either to increase voltage as load increases, thus making up for loss of potential in armature and transmission lines, or on one tip of the poles to offset the magnetic effect of armature current and prevent distortion of the magnetic field. The term is also used for alternating-current machines where the compensating current is rectified from alternating, as distinguished from compound winding for direct-current machines.

Continued

## Definitions of Electrical Terms

**Compound-Wound.** Applied to direct-current machines having a series field coil to vary the field magnetism as the load varies, in addition to a shunt field coil for main excitation. The compound coil may be proportioned to add just enough voltage to make up for drop in potential through the armature, (flat compounded), or it may increase the voltage as load increases so as to make up for line drop, (over compounded).

**Condenser.** An electrical device for storing a charge of electricity and returning it to the line. It is used to balance the inductance of a circuit, since its action is opposite in phase to that of inductive apparatus, i.e., it throws the current ahead of the e.m.f. in phase. It is made of alternate plates of tinfoil and insulating material, the size of plates and thickness of insulation determining the capacity for holding electric charge. Capacity is measured, practically, in microfarads or millionths of a farad.

**Dielectric.** A non-conducting or insulating material. The dielectric value of a material is measured by comparing it with that of a like thickness of air taken as unity. Glass is 3 to 8; porcelain, 4.4; treated paper, 2 to 4; paraffin and various forms of rubber, 2.2 to 2.5; mica, 6; water, 80.

**Electro-Magnet.** A core of iron or steel, solid or laminated, surrounded by a coil of wire through which electric current is passed. The coil, carrying current, produces a magnetic field and the core becomes a magnet. Without the core, the coil is known as a solenoid.

**Electrolyte.** The liquid used in a storage battery. It consists of a small portion of sulphuric acid mixed with pure distilled water.

**Exciting Current.** Current used for energizing the field coils of a motor or generator to create magnetic flux in the pole pieces.

**Hysteresis.** The quality of iron which causes lagging of the induced magnetism behind the magnetizing force. When the magnetic field is reversed, this causes a loss varying with the number of reversals per second, with the 1.6 power of the maximum value of magnetic density in the iron and with the volume of iron in the magnetic field.

**Induction Motor.** One in which rotor current is set up by transformer action from alternating currents supplied to the stator windings. The rotor currents are induced by those in the stator, hence the name—induction motor.

**Inductance.** The coefficient of self-induction of a circuit. The effect is to cause current to lag behind electromotive force in phase. It depends on the size and shape of the circuit, cross-section and shape of conductor, magnetic properties of the conductor and the surrounding medium and on the frequency of the current reversal and resistance of the conductor. It is, therefore, difficult to compute except for simple wire circuits suspended in air. The unit for measurement is the henry, or the millihenry (1/1000 of a henry).

**Line Loss.** Energy used up in overcoming the resistance of the transmission line to flow of electric current. Its result is drop in voltage, which varies with resistance of the line and as the square of the current flowing. Also known as I<sup>2</sup>R loss.

**Magnetic Density.** Magnetic lines per unit of area of cross-section of the magnetic circuit, also known as magnetic induction. One magnetic line per square of the centimeter is known as a gauss and the magnetic density, B, in gausses is equal to the magnetizing force, H, times the permeability of the material at the point considered. Permeability of air is 1.

Continued



## Definitions of Electrical Terms

## Concluded

**Magnetic Flux.** Total of magnetic lines in a circuit. One line is known as a maxwell and the magnetic flux is equal to the average magnetic density times the area of cross-section of the magnetic circuit. Except for leakage, the magnetic flux will be the same at all parts of a magnetic circuit but the magnetic density will vary with the area of cross-section of different parts. The symbol is F.

**Magnetizing Force.** The force per unit of length of solenoid. It depends on the number of turns and the current flowing. The symbol is H.

**Magnetomotive Force.** The total magnetizing force developed by a solenoid, or required to set up a given density through a magnetic circuit or part of a circuit. The magnetomotive force for each part of a circuit will depend on the material in that part of the circuit and the length of the magnetic path through it. The unit in the C.G.S. system is the gilbert but it is customary to express magnetomotive force in ampere-turns either per inch of length of the magnetic path or total for the circuit.

**Mil.** 1/1000 of an inch.

**Ohm.** The unit of electrical resistance about equivalent to the resistance of 400 feet of common iron telegraph wire.

**Phase.** The relative time of change in values of current or electromotive force. Values which change exactly together are in phase. Difference in phase is expressed in degrees, a complete cycle or double reversal being taken as 360 degrees. A 180-degree phase difference is complete opposition in phase.

**Permeability.** The ratio of magnetic induction or density in a magnetic circuit to the magnetizing force. It is the opposite of reluctivity and is denoted by symbol  $\mu$ .

**Phase Advancer.** A synchronous motor used as a condenser to advance the phase of the lagging current in a circuit and bring it more nearly in phase with the electromotive force.

**Photometer.** An apparatus for measuring the intensity of a source of light by comparison with a known standard source. Various methods of comparison are employed to compare the illumination from two sources.

**Potential.** Voltage, or difference in electric pressure between two parts of a circuit or between a circuit and an outside point.

**Power Factor.** The relation of real to apparent power in an alternating-current circuit. It depends on the difference in phase between current and electromotive force and is equal to the cosine of the angle of phase lag or lead of the current.

**Primary Cell.** A battery cell which generates electromotive force by direct chemical action of the electrolyte on a metal, the metal usually being destroyed in the process.

**Real Power or Actual Power** in an alternating current circuit is that which is measured only with a wattmeter.

**Regulation.** Steadiness of maintaining the value of electromotive force or current. Controlled by generator or transformer action or by a special regulator. Good regulation should hold voltage variation within 3 per cent of normal.

**Repulsion Motor.** An a.c. motor which operates by repulsion of armature conductors by the stator field. It has low starting torque on full load, tendency to spark and rather low efficiency.

**Reluctance.** Magnetic resistance or opposition to the passage of magnetic lines of force. Unit reluctance, the oersted, is that of a cubic centimeter of air. It is the ratio of magnetomotive force to magnetic flux. It is practically the same for all non-magnetic materials but, for iron and steel, it increases with the increase of magnetic density although not in direct proportion.

**Resistivity.** The specific resistance of a substance; the resistance in ohms of a centimeter cube of the material to flow of current between opposite faces.

## Equivalent Values in Different Units

1 H.P. =	746 watts
	.746 K.W.
	33,000 ft.-lbs. per minute
	550 ft.-lbs. per second
	2,545 heat-units per hour
	42.4 heat-units per minute
1 H.P. Hour =	.707 heat-units per second
	.175 lb. carbon oxidized per hour
	2.64 lbs. water evaporated per hour from and at 212° F.
	746 K.W. hours
	1,980,000 ft.-lbs.
	2,545 heat-units
1 Kilo-watt =	273,740 k.g.m.
	.175 lb. carbon oxidized with perfect efficiency
	2.64 lbs. water evaporated from and at 212° F.
	17.0 lbs. water raised from 62° to 212° F.
	1,000 watts
	1.34 H.P.
1 Watt per Sq. In. =	2,654,200 ft.-lbs. per hour
	44,240 ft.-lbs. per minute
	737.3 ft.-lbs. per second
	3,412 heat-units per hour
	56.9 heat-units per minute
	.948 heat-units per second
1 Kilo-gram Meter =	.2275 lb. carbon oxidized per hour
	3.53 lbs. water evaporated per hour from and at 212° F.
	8.9 heat-units per sq. ft. per minute
	6,371 ft.-lbs. per sq. ft. per minute
	.193 H.P. per sq. ft.
	.7.233 ft.-lbs.
1 Lb. Water Evaporated from and at 212° F. =	.00000365 H.P. hour
	.00000272 K.W. hour
	.0093 heat-units
	.283 K.W. hour
	.379 H.P. hour
	965.7 heat-units
1 Heat-Unit =	103,900 k.g.m.
	1,019,000 joules
	751,300 ft.-lbs.
	.0664 lb. of carbon oxidized
	1,055 watt seconds
	778 ft.-lbs.
1 Heat-Unit per Sq. Ft. per Min. =	107.6 kilogram meters
	.000293 K.W. hour
	.000393 H.P. hour
	.0000688 lb. carbon oxidized
	.001036 lb. water evaporated from and at 212° F.
	.122 watt per sq. in.
1 Heat-Unit per Sq. Ft. per Min. =	.0176 K.W. per sq. ft.
	.0236 H.P. per sq. ft.

## Wiring Formula

Ohm's law is practically the basis for the various formulae in general use for determining the proper size of wire to use to carry various currents. It is essential to know the amount of current expressed in amperes, the distance, and to decide upon the loss to allow in transmission; the best rule is as follows:

The cross section (CM) of the necessary wire is found by multiplying twice the distance one way (2D) by the amount of current expressed in amperes (C) and this by the resistance of one mil-foot (10.7) and dividing by the loss in transmission expressed in volts (v).

$$\text{or, CM} = \frac{2D \times C \times 10.7}{v} \text{ or, CM} = \frac{D \times C \times 21.4}{v}$$



## Equivalent Values in Different Units

Continued

1 Watt =	1 joule per second .00134 Hp. 3,412 heat-units per hour .7373 ft.-lb. per second .0035 lb. water evaporated per hour 44.24 ft.-lb. per minute
1 Kw. Hour =	1,000 watt hours 1.34 Hp. hours 2,654,200 ft.-lb. 3,600,000 joules 3,412 heat-units 367,000 kilogram meters .235 lb. carbon oxidized with perfect efficiency 3.53 lbs. water evaporated from and at 212°F. 22.75 lbs. of water raised from 62° to 212°F.
1 Joule =	1 watt second .000000278 Kw. hour .102 k.g.m. .0009477 heat-units .7373 ft.-lb.
1 Ft.-Lb. =	1.356 joules .1383 k.g.m. .000000377 Kw. hours .001285 heat-units .0000005 Hp. hour
1 lb. Carbon Oxidized with Perfect Efficiency =	14,544 heat-units 1.11 lb. anthracite coal oxidized 2.5 lbs. dry wood oxidized 21 cu. ft. illuminating gas 4.26 Kw. hours 5.71 Hp. hours 11,315,000 ft. lb. 15 lbs. of water evaporated from and at 212°F.

## Equivalent of Electrical Units

1 Hp. =	33,000 foot-pounds per minute 746 watts 42.746 BTU. (British Thermal Unit) per minute 2,564.76 BTU. per hour
1 Kw. =	44,235 foot-pounds per minute 1.34 Hp. 0.955 BTU. per second 57.3 BTU. per minute 3,438 BTU. per hour
1 BTU =	772 foot-pounds 17,452 watt minutes 0.2909 watt hours.
1 Watt =	44.236 foot-pounds per minute 2,654.16 foot-pounds per hour

Latent heat of evaporation of water = 966 BTU.

Latent heat of melting of water = 142 BTU.

To evaporate 1 lb. water from and at 212° = 16.859 Kw. minutes

To evaporate 1 lb. water from and at 212° = 0.281 Kw. hours

Weight per cu. ft. of water = 62.42 lb.

Weight per gallon of water = 8.33 lb.

## Tables

### Units of Measure

The electrical units are derived from the following mechanical units of the metric system:

METER.—A unit of length equal, approximately, to one ten-millionth part of a quadrant of a meridian of the earth taken through Paris; or, approximately, to 39.37 inches.

GRAMME.—Unit of weight. Weight of a cubic centimeter of water at a temperature of 4 degrees centigrade.

SECOND.—Unit of time. The time of one swing of a pendulum making 86,400 swings in a solar day.

### Electrical Units

VOLT.—Such an electromotive force as would cause a current of one ampere to flow against a resistance of one ohm. Such an electromotive force as would charge a condenser of the capacity of one farad with a quantity of electricity equal to one coulomb.

OHM.—The practical unit of electric resistance. Such a resistance as would limit the flow of electricity under an electromotive force of one volt, to a current of one ampere, or one-coulomb-per-second.

MEG OHM.—1,000,000 ohms.

AMPERE.—The practical unit of electric current. A rate of flow of electricity transmitting one coulomb per second. The current of electricity which would pass through a circuit whose resistance is one ohm, under an electromotive force of one volt.

COULOMB.—The practical unit of electric quantity. Such a quantity of electricity as would pass in one second through a circuit conveying one ampere. The quantity of electricity contained in a condenser of one farad capacity, when subjected to the E. M. F. of one volt.

FARAD.—The practical unit of electric capacity. Such a capacity of a conductor or condenser that one coulomb of electricity is required to produce therein a difference of potential of one volt.

MICROFARAD (MFD).—One-millionth of a farad.

WATT.—A unit of electric power. A volt-ampere. The power developed when 44.25 foot-pounds of work are done in a minute, or 0.7375 foot-pound of work is done in a second.

JOULE.—A volt-coulomb or unit of electric energy or work. The amount of electric work required to raise the potential of one coulomb of electricity one volt. Ten million ergs.

### Ohm's Law

Ohm's law is a method of expressing relationship existing between the electromotive force, current and resistance, and is practically the basis of most electrical computations. It is expressed in various forms, as follows:

$$\text{Current Flow} = \frac{\text{Electromotive Force}}{\text{Resistance}} \text{ or, } I = \frac{E}{R}$$

Electromotive force equals the current flow multiplied by resistance.

Electromotive Force = Current Flow  $\times$  Resistance, or  $E = I \times R$ .

Resistance equals the electromotive force divided by the current flow.

$$\text{Resistance} = \frac{\text{Electromotive Force}}{\text{Current Flow}} \text{ or, } R = \frac{E}{I}$$

I = Amperes. E = Volts. R = Ohms.

Electromotive force varies directly as the current and resistance.

Resistance varies directly with the electromotive force and inversely as the current.

Current varies directly with the electromotive force and inversely as the resistance.

### Mil

The "mil," whose expressed value is  $\frac{\text{One}}{\text{One-Thousandth}}$  (.001) of an inch, is the practical basis for determining the diameters and thereby the area of all wires used as electric conductors. The diameters being given, the area is obtained by the well-known rule, "the area of a circle, in circular units, is equal to the square of its diameter;" hence the square of the diameter of a wire expressed in mils equals the area of its cross section.

$D^2 = A$ , which area is expressed in Circular Mils or CM.; hence  $D^2 = CM$ .



### Electrical Formula for Determining Amperes, Horsepower, Kilowatts and Kilovolt-Amperes

Desired Data	Alternating Current	
	Single Phase	*Two-Phase Four-Wire
Kilowatts	$\frac{I \times E \times P.F.}{1000}$	$\frac{I \times E \times 2 \times P.F.}{1000}$
Kva.	$\frac{I \times E}{1000}$	$\frac{I \times E \times 2}{1000}$
Horsepower Output	$\frac{I \times E \times \% \text{Eff.} \times P.F.}{746}$	$\frac{I \times E \times 2 \times \% \text{Eff.} \times P.F.}{746}$
Amperes when Hp. is Known	$\frac{Hp. \times 746}{E \times \% \text{Eff.} \times P.F.}$	$\frac{Hp. \times 746}{2 \times E \times \% \text{Eff.} \times P.F.}$
Amperes when Kilowatts is Known	$\frac{Kw. \times 1000}{E \times P.F.}$	$\frac{Kw. \times 1000}{2 \times E \times P.F.}$
Amperes when Kva. is Known	$\frac{Kva. \times 1000}{E}$	$\frac{Kva. \times 1000}{2 \times E}$
Desired Data	A.C. Three-Phase	D.C.
Kilowatts	$\frac{I \times E \times 1.73 \times P.F.}{1000}$	$\frac{I \times E}{1000}$
Kva.	$\frac{I \times E \times 1.73}{1000}$	.....
Horsepower Output	$\frac{I \times E \times 1.73 \times \% \text{Eff.} \times P.F.}{746}$	$\frac{I \times E \times \% \text{Eff.}}{746}$
Amperes when Hp. is Known	$\frac{Hp. \times 746}{1.73 \times E \times \% \text{Eff.} \times P.F.}$	$\frac{Hp. \times 746}{E \times \% \text{Eff.}}$
Amperes when Kilowatts is Known	$\frac{Kw. \times 1000}{1.73 \times E \times P.F.}$	$\frac{Kw. \times 1000}{E}$
Amperes when Kva. is Known	$\frac{Kva. \times 1000}{1.73 \times E}$	.....

\*In three-wire, two-phase circuits the current in the common conductor is 1.41 times that in either other conductor.

NOTE.—E=Volts; I=Amperes; %Eff.=Per Cent Efficiency; P.F.=Power Factor.

### Transmission Losses

The following table shows the approximate average 1,000-cycle transmission loss for several types of open wire lines and lead-covered cables. Wet weather and also the approximate maximum length of non-loaded circuit corresponding to about 30 db. loss.

Kind of Circuit	Diameter Inches	Approximate Average 1,000 Cycle Loss Db. per mile	Approx. Max. Length Miles for Loss at 150 Cycles at Voice Frequency
6 B&S Copper.....	.162	.0373	804
8 BWG Copper.....	.165	.035	855
8 B&S Copper.....	.1285	.052	575
9 B&S Copper.....	.114	.062	485
10 B&S Copper.....	.1019	.079	380
12 B&S & 14 NBS Copper..	.080	.113	260
12 NBS Copper.....	.104	.075	400
10 BWG Iron.....	.27	.....	110
12 BWG Iron.....	.30	.....	100
14 BWG Iron.....	.41	.....	72
8 B&S 50% Copper Clad..	.115	.....	261
10 B&S 50% Copper Clad..	.17	.....	177
12 B&S 50% Copper Clad..	.24	.....	123
8 B&S 30% Copper Clad..	.19	.....	156
10 B&S 30% Copper Clad..	.29	.....	105
12 B&S 30% Copper Clad..	.40	.....	75

### Lead Covered Cable

10 Gage.....	.102	.301	.529	99
13 Gage.....	.072	.490	.854	61
16 Gage Type NH.....	.051	.75	1.38	40
19 Gage Type CNB.....	.036	1.26	2.38	24
22 Gage Type BPA, CSA..	.025	1.79	.....	17
24 Gage Type DSM.....	.02	2.14	.....	14
26 Gage Type BST.....	.016	2.67	.....	11

### Number of Conductors in Conduit or Tubing

1 to 9 Conductors—Rubber-Covered  
Types RF-32, R, RH, RW, and RU  
Thermoplastic, Types TF, T, and TW

N.E.C. Table 4

Size Conductor A.W.G.	MINIMUM SIZE OF CONDUIT, INCHES No. of Conductors								
	1	2	3	4	5	6	7	8	9
18	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4
16	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4
14	1/2	1/2	1/2	1/2	3/4	3/4	1	1	1
12	1/2	1/2	1/2	3/4	3/4	1	1	1	1 1/4
10	1/2	3/4	3/4	3/4	1	1	1	1 1/4	1 1/4
8	1/2	3/4	1	1	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2
6	1/2	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	2	2	2
4	1/2	1 1/4	1 1/4	1 1/2	1 1/2	2	2	2	2 1/2
3	3/4	1 1/4	1 1/4	1 1/2	2	2	2	2 1/2	2 1/2
2	3/4	1 1/4	1 1/4	2	2	2	2 1/2	2 1/2	2 1/2
1	3/4	1 1/2	1 1/2	2	2 1/2	2 1/2	3	3	3
0	1	1 1/2	2	2	2 1/2	2 1/2	3	3	3
00	1	2	2	2 1/2	2 1/2	3	3	3	3 1/2
000	1	2	2	2 1/2	3	3	3	3 1/2	3 1/2
0000	1 1/4	2	2 1/2	3	3	3	3 1/2	3 1/2	4
C.M.									
250000	1 1/4	2 1/2	2 1/2	3	3	3 1/2	4	4	4 1/2
300000	1 1/4	2 1/2	2 1/2	3	3 1/2	4	4	4 1/2	4 1/2
350000	1 1/4	3	3	3 1/2	3 1/2	4	4 1/2	4 1/2	5
400000	1 1/2	3	3	3 1/2	4	4	4 1/2	5	5
500000	1 1/2	3	3	3 1/2	4	4 1/2	5	5	6
600000	2	3 1/2	3 1/2	4	4 1/2	5	6	6	6
700000	2	3 1/2	3 1/2	4 1/2	5	5	6	6	.....
750000	2	3 1/2	3 1/2	4 1/2	5	6	6	6	.....
800000	2	3 1/2	4	4 1/2	5	6	6	.....	.....
900000	2	4	4	5	6	6	6	.....	.....
1000000	2	4	4	5	6	6	.....	.....	.....
1250000	2 1/2	4 1/2	4 1/2	6	6	.....	.....	.....	.....
1500000	3	5	5	6	.....	.....	.....	.....	.....
1750000	3	5	6	6	.....	.....	.....	.....	.....
2000000	3	6	6	.....	.....	.....	.....	.....	.....

\*Where a service run of conduit or electrical metallic tubing does not exceed 50 feet in length and does not contain more than the equivalent of two quarter-bends from end to end; two No. 4 insulated and one No. 4 bare conductors may be installed in 1-inch conduit or tubing.

The above applies only to complete conduit systems, and does not apply to short sections of conduit used for the protection of exposed wiring from mechanical injury.

### Dimensions of Rubber-Covered and Thermoplastic Covered Conductors

N.E.C. Table 13

Size A.W.G.	TYPES RF-32, R, RH, RW		TYPES TF, T, TW, RU		TYPES RF-32, R, RH, RW		TYPES TF, T, TW, RU	
	Approx. Diam., Inches	Approx. Area, Sq. In.	Approx. Diam., Inches	Approx. Area, Sq. In.	Approx. Diam., Inches	Approx. Area, Sq. In.	Approx. Diam., Inches	Approx. Area, Sq. In.
18	.146	.0167	.106	.0088	MCM.			
16	.158	.0196	.118	.0109	250	.868	.5917	.788
*14	.171	.0230	.131	.0135	300	.933	.6837	.843
†14	.204	.0327	.....	.....	350	.985	.7620	.895
*12	.188	.0278	.148	.0172	400	1.032	.8365	.942
†12	.221	.0384	.....	.....	500	1.119	.9834	1.029
10	.242	.0460	.168	.0224	600	1.233	1.1940	1.143
8	.311	.0760	.228	.0408	700	1.304	1.3355	1.214
6	.397	.1238	.323	.0819	750	1.339	1.4082	1.249
4	.452	.1605	.372	.1087	800	1.372	1.4784	1.282
3	.481	.1817	.401	.1263	900	1.435	1.6173	1.345
2	.513	.2067	.433	.1473	1000	1.494	1.7531	1.404
1	.588	.2715	.508	.2027	1250	1.676	2.2062	1.577
0	.629	.3107	.549	.2367	1500	1.801	2.5475	1.702
00	.675	.3578	.595	.2781	1750	1.916	2.8895	1.817
000	.727	.4151	.647	.3288	2000	2.021	3.2079	1.922
0000	.785	.4840	.705	.3904	.....	.....	.....	.....

\*With 3/64-inch insulation.

†With 3/64 inch insulation.

†Dimensions for Type RW; also to be used for new work in computing the size of conduit or tubing for combinations of conductors not shown in Table 4.

§Type RU conductors recognized in sizes No. 14 to No. 6. No. 18 to No. 8, solid; No. 6 and larger stranded.



## Number of Conductors in Conduit or Tubing

Lead-Covered—Types RL, and RHL—600 Volts

N.E.C. Table 5

Size Conductor A.W.G.	MINIMUM SIZE OF CONDUIT, INCHES											
	Single Conductor Cable			2-Conductor Cable			3-Conductor Cable					
	No. of Conductors	No. of Conductors	No. of Conductors	No. of Conductors	No. of Conductors	No. of Conductors	No. of Conductors	No. of Conductors	No. of Conductors	No. of Conductors	No. of Conductors	No. of Conductors
14	1 1/2	3/4	3/4	1	3/4	1	1 1/4	3/4	1 1/4	1 1/2	1 1/2	1 1/2
12	1 1/2	3/4	3/4	1	3/4	1	1 1/4	1 1/4	1 1/4	2	2	2
10	1 1/2	3/4	1	1	3/4	1 1/4	1 1/4	1 1/2	1	1 1/2	2	2
8	1 1/2	1	1 1/4	1 1/2	1	1 1/4	1 1/2	2	1	2	2	2 1/2
6	3/4	1 1/4	1 1/2	1 1/2	1 1/4	1 1/2	2	2 1/2	1 1/4	2 1/2	3	3
4	3/4	1 1/4	1 1/2	1 1/2	1 1/4	2	2 1/2	2 1/2	1 1/2	3	3	3 1/2
3	3/4	1 1/4	1 1/2	2	1 1/4	2	2 1/2	3	1 1/2	3	3	3 1/2
2	1	1 1/4	1 1/2	2	1 1/4	2	2 1/2	3	1 1/2	3	3 1/2	4
1	1	1 1/2	2	2	1 1/2	2 1/2	3	3 1/2	2	3 1/2	4	4 1/2
0	1	2	2	2 1/2	2	2 1/2	3	3 1/2	2	4	4 1/2	5
00	1	2	2	2 1/2	2	3	3 1/2	4	2 1/2	4	4 1/2	5
000	1 1/4	2	2 1/2	2 1/2	2	3	3 1/2	4	2 1/2	4 1/2	4 1/2	6
0000	1 1/4	2 1/2	2 1/2	3	2 1/2	3	3 1/2	4 1/2	3	5	6	6

The above sizes apply to straight runs or with nominal offsets equivalent to not more than two quarter-bends.

**More Than 9 Conductors—Rubber-Covered  
Types RF-32, R, RH, RW, and RU—600 Volts  
Thermoplastic, Types TF, T, and TW**

N.E.C. Table 9

More than 9 conductors are permitted in a single conduit for conductors between a motor and its controller; stage pocket and border circuits; sign flashers; elevator control conductors; and signal and control circuits.

Size A.W.G.	No. of Conductors					
	MINIMUM SIZE OF CONDUIT, INCHES					
	3/4	1	1 1/4	1 1/2	2	2 1/2
18	12	20	35	49	80	115
16	10	17	30	41	68	97
14	..	10	18	25	40	59
12	..	..	15	21	35	50
10	..	..	13	17	29	41
8	..	..	..	10	17	25
6	..	..	..	..	..	15

## Bends

Bends of rigid conduit shall be so made that the conduit will not be injured and that the internal diameter of the conduit will not be effectively reduced. The radius of the curve of the inner edge of any field bend shall not be less than shown in the following table:

## Radius of Conduit Bends

Size of Conduit Inches	Conductors Without Lead Sheath Inches	Conductors With Lead Sheath Inches	Size of Conduit Inches	Conductors Without Lead Sheath Inches	Conductors With Lead Sheath Inches
1 1/2	3.7	6.2	3	18.4	30.6
3/4	4.9	8.3	3 1/2	21.3	35.5
1	6.3	10.5	4	24.1	40.2
1 1/4	8.3	13.8	4 1/2	27.0	45.0
1 1/2	9.6	16.1	5	30.3	50.4
2	12.4	20.6	6	36.4	60.6
2 1/2	14.8	24.6	..	..	..

## Dimensions of Conduit or Tubing

N.E.C. Table 19

Size Inches	Internal Diameter Inches	Area Square Inches	Size Inches	Internal Diameter Inches	Area Square Inches
1 1/2	.622	.30	3	3.068	7.38
3/4	.824	.53	3 1/2	3.548	9.90
1	1.049	.86	4	4.026	12.72
1 1/4	1.380	1.50	4 1/2	4.506	15.95
1 1/2	1.610	2.04	5	5.047	20.00
2	2.067	3.36	6	6.065	28.89
2 1/2	2.469	4.79	..	..	..

## Properties of Copper Conductors

N.E.C. Table 18

Size A.W.G.	CONCENTRIC LAY STRANDED CONDUCTORS		BARE CONDUCTORS		D.C. RESISTANCE OHMS PER 1000 FEET AT 25° C., 77° F.	
	Area Circular Mils	No. of Wires	Diam. Each Wire Inches	Diam. Inches	*Area Square Inches	Conductor Tinned Conductor
18	1624	Solid	.0403	.0403	.0013	6.51000 6.77000
16	2583	Solid	.0508	.0508	.0020	4.09400 4.25000
14	4107	Solid	.0641	.0641	.0032	2.57500 2.68000
12	6530	Solid	.0808	.0808	.0051	1.61900 1.69000
10	10380	Solid	.1019	.1019	.0081	1.01800 1.06000
8	16510	Solid	.1285	.1285	.0130	.64100 .66000
6	26250	7	.0612	.1840	.0270	.41000 .42600
4	41740	7	.0772	.2320	.0420	.25900 .26900
3	52640	7	.0867	.2600	.0530	.20500 .21300
2	66370	7	.0974	.2920	.0670	.16200 .16900
1	83690	19	.0664	.3320	.0870	.12900 .13400
0	105500	19	.0745	.3730	.1090	.10200 .10600
00	133100	19	.0837	.4180	.1370	.08110 .08440
000	167800	19	.0940	.4700	.1730	.06420 .06680
0000	211600	19	.1055	.5280	.2190	.05090 .05240

\*Area given is that of a circle having a diameter equal to the overall diameter of a stranded conductor.

The resistance values given in the last two columns are applicable only to direct current.

## Combination of Conductors

N.E.C. Table 11

For groups or combinations of conductors not included in the preceding tables, it is recommended that the conduit or tubing be of such size that the sum of the cross-sectional areas of the individual conductors will not be more than the percentage of the interior cross-sectional area of the conduit or tubing than as shown in the following table:

Description	No. of Conductors				
	1	2	3	4	Over 4
Conductors (Not Lead-Covered)...	53	31	43	40	40
Lead-Covered Conductors.....	55	30	40	38	35
*For Rewiring Existing Raceways..	60	40	50	50	50

\*For increased load where it is impracticable to increase the size of the raceway due to structural conditions.



## Insulated Cable

## How to Select Conductor Size

## Sizes Required to Maintain 2 Per Cent Maximum Voltage Drop

## Single Phase A.C. Circuit (In Conduit)

Current in Amperes	CONDUCTOR SIZE REQUIRED, A.W.G. OR 1000 CIR MILS																	
	110 Volts									220 Volts								
	DISTANCE TO CENTER OF DISTRIBUTION, FEET									DISTANCE TO CENTER OF DISTRIBUTION, FEET								
	25	50	75	100	150	200	300	400	500	25	50	75	100	150	200	300	400	500
1	..	..	..	..	..	..	14	12	10	..	..	..	..	..	..	..	..	14
1.5	..	..	..	..	14	14	12	10	10	..	..	..	..	..	..	14	14	12
2	..	..	..	..	14	12	10	10	8	..	..	..	..	..	..	14	12	12
3	..	..	14	14	12	10	8	8	6	..	..	..	..	14	14	12	10	10
4	..	..	14	12	10	10	8	6	6	..	..	..	..	14	12	10	10	8
5	..	14	12	12	10	8	6	6	4	..	..	..	14	12	12	10	8	8
6	..	14	12	10	8	8	6	4	4	..	..	14	14	12	10	8	8	6
7	..	14	12	10	8	8	6	4	2	..	..	14	14	12	10	8	8	6
8	..	12	10	10	8	6	4	2	2	..	..	14	12	10	10	8	6	6
9	..	12	10	8	8	6	4	2	2	..	14	14	12	10	8	8	6	4
10	14	12	10	8	6	6	4	2	2	..	14	12	12	10	8	6	6	4
12	14	10	8	8	6	4	2	1	1	..	14	12	10	8	8	6	4	4
14	14	10	8	8	6	4	2	0	0	..	14	12	10	8	8	6	4	2
16	12	10	8	6	4	4	2	0	00	..	12	10	10	8	6	4	4	2
18	12	8	8	6	4	2	1	00	00	..	12	10	8	8	6	4	2	2
20	12	8	6	6	4	2	1	00	000	..	12	10	8	6	6	4	2	2
25	10	8	6	4	2	2	0	000	0000	14	10	8	8	6	4	2	2	1
30	10	6	4	4	2	1	00	..	..	12	10	8	6	4	4	2	1	0
35	10	6	4	2	2	0	000	..	..	12	10	8	6	4	2	2	0	00
40	8	6	4	2	1	00	0000	..	..	12	8	6	6	4	2	1	00	0000
45	8	4	4	2	0	00	..	..	..	10	8	6	4	4	2	0	00	0000
50	8	4	2	2	0	000	..	..	..	10	8	6	4	2	2	0	000	0000
60	6	4	2	1	00	0000	..	..	..	10	6	4	4	2	1	00	0000	..
70	6	2	2	0	000	..	..	..	..	10	6	4	2	2	0	000	..	..
80	6	2	1	00	0000	..	..	..	..	8	6	4	2	1	00	0000	..	..
90	4	2	0	00	..	..	..	..	..	8	4	4	2	0	00	..	..	..
100	4	2	0	000	..	..	..	..	..	8	4	2	2	0	000	..	..	..
120	4	1	00	0000	..	..	..	..	..	6	4	2	1	00	0000	..	..	..

## 3-Phase A.C. Circuit (In Conduit)

Current in Amperes	CONDUCTOR SIZE REQUIRED, A.W.G. OR 1000 CIR MILS																	
	220 Volts									440 Volts								
	DISTANCE TO CENTER OF DISTRIBUTION, FEET									DISTANCE TO CENTER OF DISTRIBUTION, FEET								
	25	50	75	100	150	200	300	400	500	25	50	75	100	150	200	300	400	500
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1.5	..	..	..	..	..	..	..	14	14	..	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	14	14	12	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	14	12	12	10	..	..	..	..	..	..	..	14	14
4	..	..	..	..	14	14	12	10	10	..	..	..	..	..	..	14	14	12
5	..	..	..	..	14	12	10	10	8	..	..	..	..	..	..	14	12	12
6	..	..	..	14	12	12	10	8	8	..	..	..	..	..	14	12	12	10
7	..	..	14	14	12	10	8	8	6	..	..	..	..	14	14	12	10	10
8	..	..	14	14	12	10	8	6	6	..	..	..	..	14	14	12	10	10
9	..	..	14	12	10	10	8	6	6	..	..	..	..	14	12	10	10	8
10	..	..	14	12	10	10	8	6	6	..	..	..	..	14	12	10	10	8
12	..	14	12	12	10	8	6	6	4	..	..	..	14	12	12	10	8	8
14	..	14	12	10	8	8	6	4	4	..	..	14	14	12	10	8	8	6
16	..	14	12	10	8	8	6	4	2	..	..	14	14	12	10	8	8	6
18	..	12	10	10	8	6	4	4	2	..	..	14	12	10	10	8	6	6
20	..	12	10	10	8	6	4	2	2	..	..	14	12	10	10	8	6	6
25	14	12	10	8	6	6	4	2	1	..	14	12	12	10	8	6	6	4
30	14	10	8	8	6	4	2	2	0	..	14	12	10	8	8	6	6	4
35	12	10	8	6	4	4	2	1	0	..	12	10	10	8	6	4	4	4
40	12	10	8	6	4	2	2	0	00	..	12	10	10	8	6	4	2	2
45	12	8	6	6	4	2	1	0	000	14	12	10	8	6	6	4	2	2
50	12	8	6	4	4	2	0	00	000	14	12	10	8	6	6	4	2	1
60	10	8	6	4	2	2	0	000	..	14	10	8	8	6	4	2	2	0
70	10	6	4	4	2	1	00	0000	..	12	10	8	6	4	4	2	1	0
80	10	6	4	2	2	0	000	..	..	12	10	8	6	4	2	2	0	00
90	8	6	4	2	1	0	0000	..	..	12	8	6	6	4	2	1	0	000
100	8	6	4	2	0	00	..	..	..	12	8	6	6	4	2	0	00	000
120	8	4	2	2	0	0000	..	..	..	10	8	6	4	2	2	0	000	0000



## Allowable Current-Carrying Capacities of Conductors in Amperes

Based on Room Temperature of 30°C., 80° F.

N. E. C. Table 1

Not More Than Three Conductors in Raceway or Cable

Size A.G.W.	Rubber Type R Type RW (14-6) Thermo- plastic Type T (14-4/0) Type TW (14-4/0)	Paper Thermo- plastic Asbestos Type TA Var-Cam Type V Asbestos Var-Cam Type AVB	Asbestos Var-Cam Type AVA Type AVL	Impreg- nated Asbestos Type AI (14-8) Type AIA	Asbestos Type A (14-8) Type AA
14	15	25	30	30	30
12	20	30	35	40	40
10	30	40	45	50	55
8	40	50	60	65	70
6	55	70	80	85	95
4	70	90	105	115	120
3	80	105	120	130	145
2	95	120	135	145	165
1	110	140	160	170	190
0	125	155	190	200	225
00	145	185	215	230	250
000	165	200	245	265	285
0000	195	235	275	310	340
MCM.					
250	215	270	315	335	...
300	240	300	345	380	...
350	260	325	390	420	...
400	280	360	420	450	...
500	320	405	470	500	...
600	355	455	525	545	...
700	385	490	560	600	...
750	400	500	580	620	...
800	410	515	600	640	...
900	435	555	...	...	...
1000	455	585	680	730	...
1250	495	645	...	...	...
1500	520	700	785	...	...
1750	545	735	...	...	...
2000	560	775	840	...	...

N. E. C. Table 2

Single Conductor in Free Air

Size A.G.W.	Rubber Type R Type RW (14-6) Thermo- plastic Type T Type TW	Thermo- plastic Asbestos Type TA Var-Cam Type V Asbestos Var-Cam Type AVB	Asbestos Var-Cam Type AVA Type AVL	Impreg- nated Asbestos Type AI (14-8) Type AIA	Asbestos Type A (14-8) Type AA	Slow- Burning Type SB Weather- proof Type WP Type SBW
14	20	30	40	40	45	30
12	25	40	50	50	55	40
10	40	55	65	70	75	55
8	55	70	85	90	100	70
6	80	100	120	125	135	100
4	105	125	135	160	170	130
3	120	145	155	180	195	150
2	140	170	180	210	225	175
1	165	195	210	245	265	205
0	195	230	245	285	305	235
00	225	265	285	330	355	275
000	260	310	330	385	410	320
0000	300	360	385	445	475	370
MCM.						
250	340	405	425	495	530	410
300	375	445	480	555	590	460
350	420	505	530	610	655	510
400	455	545	575	665	710	555
500	515	620	660	765	815	630
600	575	690	740	855	910	710
700	630	755	815	940	1005	780
750	655	785	845	980	1045	810
800	680	815	880	1020	1085	845
900	730	870	940	...	...	905
1000	780	935	1000	1165	1240	965
1250	890	1065	1130	...	...	...
1500	980	1175	1260	1450	...	1215
1750	1070	1280	1370	...	...	...
2000	1155	1385	1470	1715	...	1405

Correction Factor For Room Temperatures Over 30°C., 86°F.

°C. °F.	.82	.88	.90	.94	.95	...	.82	.88	.90	.94	.95	...
40 104	.82	.88	.90	.94	.95	...	.82	.88	.90	.94	.95	...
45 113	.71	.82	.85	.90	.92	...	.71	.82	.85	.90	.92	...
50 122	.58	.75	.80	.87	.89	...	.58	.75	.80	.87	.89	...
55 131	.41	.67	.74	.83	.86	...	.41	.67	.74	.83	.86	...
60 140	...	.58	.67	.79	.83	.91	...	.58	.67	.79	.83	.91
70 158	...	.35	.52	.71	.76	.87	...	.35	.52	.71	.76	.87
75 167	...	...	.43	.66	.72	.86	...	...	.43	.66	.72	.86
80 176	...	...	.30	.61	.69	.84	...	...	.30	.61	.69	.84
90 194	...	...	...	.50	.61	.80	...	...	...	.50	.61	.80
100 212	...	...	...	...	.51	.77	...	...	...	...	.51	.77
120 248	...	...	...	...	...	.69	...	...	...	...	...	.69
140 284	...	...	...	...	...	.59	...	...	...	...	...	.59

**Aluminum Conductors.** For aluminum conductors, the allowable current-carrying capacities shall be taken as 84 per cent of those given in the table for the respective sizes of copper conductor with the same kind of insulation.

**Bare Conductors.** If bare conductors are used with insulated conductors, their allowable current-carrying capacity shall be limited to that permitted for the insulated conductor with which they are used.

**Application of Table.** For open wiring on insulators and for concealed knob-and-tube work, the allowable current-carrying capacities of Table 2 shall be used. For all other recognized wiring methods, the allowable current-carrying capacities of Table 1 shall be used.

**More Than Three Conductors in a Raceway.** Table 1 gives the allowable current-carrying capacity for not more than three conductors in a raceway or cable. If the number of conductors in a raceway or cable is from 4 to 6, the allowable current-carrying capacity of each conductor shall be reduced to 80 per cent of the values in Table 1. If the number of conductors in a raceway or cable is from 7 to 9, the allowable current-carrying capacity of each conductor shall be reduced 70 per cent of the values in Table 1.

**Neutral Conductor.** A neutral conductor which carries only the unbalanced current from other conductors, as in the case of normally balanced circuits of three or more conductors, shall not be counted in determining current-carrying capacities as provided for in the preceding paragraph. (In a 3-wire circuit consisting of two phase wires and the neutral of a 4-

wire, 3-phase system, a common conductor carries approximately the same current as the other conductors and is not therefore considered as a neutral conductor.

**Ultimate Insulation Temperature.** In no case shall conductors be associated together in such a way with respect to the kind of circuit, the wiring method employed, or the number of conductors, that the limiting temperature of the conductors will be exceeded.

**Use of Conductors with Higher Operating Temperatures.** If the room temperature is within 10°C. of the maximum allowable operating temperature of the insulation, it is desirable to use an insulation with a higher maximum allowable operating temperature; although insulation can be used in a room temperature approaching its maximum allowable operating temperature limit if the current is reduced in accordance with the table of correction factors for different room temperatures.

**Voltage Drop.** The allowable current-carrying capacities in Tables 1 and 2 are based on temperature alone and do not take voltage drop into consideration.

**Overcurrent Protection.** If the standard ratings and settings of overcurrent devices do not correspond with the ratings and settings allowed for conductors, the next higher standard rating and setting may be used, but not exceeding 150 per cent of the allowable carrying capacity of the conductor.

**Deterioration of Insulation.** It should be noted that even the best grades of rubber insulation will deteriorate in time, so eventually will need to be replaced.



### National Electrical Code Types of Insulation, Temperature Rating and Use of Various Wires and Cables for Use in Buildings

Trade Name	Type Letter	Max. Oper. Temp.	Insulation	Outer Cover	Special Provisions and Use
Rubber-Covered Fixture Wire	RF-64	{ 60°C. 140°F. }	Code Rubber	Cotton	Fixture wiring limited to 300 volts.
Solid or Strand	RF-32	{ 60°C. 140°F. }	Code Rubber	Cotton	{ Fixture wiring and as permitted in Section 3103-NEC.
Rubber-Covered Fixture Wire	FF-64	{ 60°C. 140°F. }	Code Rubber	Cotton	Fixture wiring limited to 300 volts.
Flexible Strand	FF-32	{ 60°C. 140°F. }	Code Rubber	Cotton	Fixture wiring.
Thermoplastic Covered Fixture Wire Solid or Stranded	TF	{ 60°C. 140°F. }	Thermoplastic	None	{ Fixture wiring and as permitted in Section 3103-NEC.
Thermoplastic Covered Fixture Wire Flexible Stranding	TFF	{ 60°C. 140°F. }	Thermoplastic	None	Fixture wiring.
Cotton Covered Heat Resistant Fixture Wire	CF	{ 90°C. 194°F. }	Impregnated Cotton	None	Fixture wiring limited to 300 volts.
Asbestos Covered Heat Resistant Fixture Wire	AF	{ 125°C. 257°F. }	Impregnated Asbestos	None	Fixture wiring limited to 300 volts.
Code Rubber	R	60°C.	Code Rubber	{ Moisture Resistant Flame Retardant Fibrous Covering }	General use.
Heat Resistant	RH	{ 75°C. 167°F. }	{ Heat Resistant Rubber }	{ Moisture Resistant Flame Retardant Fibrous Covering }	General use.
Asbestos	AA	{ 200°C. 392°F. }	Asbestos	With Asbestos Braid	{ Dry locations only. Open wiring. Not for general use. In raceways only for leads to or within apparatus limited to 300 volts.
Asbestos	AI	{ 125°C. 257°F. }	{ Impregnated Asbestos }	{ Without Asbestos Braid }	{ Dry locations only. Not for general use. In raceways only for leads to or within apparatus limited to 300 volts.
Asbestos	AIA	{ 125°C. 257°F. }	{ Impregnated Asbestos }	With Asbestos Braid	{ Dry locations only. Open wiring. Not for general use. In raceways only for leads to or within apparatus.
Paper	...	{ 85°C. 185°F. }	Paper	Lead Sheath	For underground service conductors or by special permission.
Slow Burning	SB	{ 90°C. 194°F. }	{ 3 Braids of Impreg- nated Fire Resist- ant Cotton Thread }	{ Outer Cover Finished Smooth and Hard }	{ Dry locations only. Open wiring, in raceways where temperature will exceed those permitted for rubber- covered or VC covered conductors.
Slow Burning Weatherproof	SBW	{ 90°C. 194°F. }	2 Layers Impregnated Cotton Thread	Outer Fire Retardant Coating	Dry locations only. Open wiring only.
Weatherproof	WP	{ 80°C. 176°F. }	{ At Least 3 Impregnat- ed Cotton Braids or Equivalent }	.....	{ Open wiring by special permission or when other insulations not suit- able for existing conditions.
Moisture Resistant Rubber	RW	{ 60°C. 140°F. }	Moisture Resistant Rubber	{ Moisture Resistant Flame Retardant Fibrous Covering }	General use in wet locations.
Latex Rubber	RU	{ 60°C. 140°F. }	90 Per Cent Unmilled Grainless Rubber	{ Moisture Resistant Flame Retardant Fibrous Covering }	General use.
Thermoplastic	T	{ 60°C. 140°F. }	Flame Retardant Thermoplastic	None	General use.
Moisture Resistant Thermoplastic	TW	{ 60°C. 140°F. }	{ Flame Retardant Moisture Resisting Thermoplastic }	None	General use in wet locations.
Thermoplastic Asbestos	TA	{ 90°C. 194°F. }	Thermoplastic and Asbestos	Flame Retardant Cotton Braid	Switchboard wiring only.
Varnished Cambric	V	{ 85°C. 185°F. }	Varnished Cambric	{ Fibrous Covering on Lead Sheath }	Dry locations only smaller than No. 6 by special permission.
Asbestos Varnished Cambric	AVA	{ 110°C. 230°F. }	{ Impregnated Asbes- tos & Varnished Cambric }	Asbestos Braid	Dry locations only.
Asbestos Varnished Cambric	AVB	{ 90°C. 194°F. }	{ Impregnated Asbes- tos & Varnished Cambric }	{ Flame Retardant Cotton Braid }	Dry locations only.
Asbestos Varnished Cambric	AVL	{ 110°C. 230°F. }	{ Impregnated Asbes- tos & Varnished Cambric }	Lead Sheath	Wet locations.
Asbestos	A	{ 200°C. 392°F. }	Asbestos	{ Without Asbestos Braid }	{ Dry locations only. Not for general use. In raceways only for leads to or within apparatus limited to 300 volts.



## Full-Load Currents of Motors

## Direct Current Motors

N.E.C. Table 21				N.E.C. Table 21			
Hp.	115V.	230V.	550V.	Hp.	115V.	230V.	550V.
1/2	4.6	2.3	...	25	184.0	92.0	38.0
3/4	6.6	3.3	1.4	30	220.0	110.0	46.0
1	8.6	4.3	1.8	40	292.0	146.0	61.0
1 1/2	12.6	6.3	2.6	50	360.0	180.0	75.0
2	16.4	8.2	3.4	60	430.0	215.0	90.0
3	24.0	12.0	5.0	75	536.0	268.0	111.0
5	40.0	20.0	8.3	100	....	355.0	148.0
7 1/2	58.0	29.0	12.0	125	....	443.0	148.0
10	76.0	38.0	16.0	150	....	534.0	220.0
15	112.0	56.0	23.0	200	....	712.0	295.0
20	148.0	74.0	31.0	...	...	...	...

These values for full-load current are average for all speeds.

## \*Single Phase, A.C. Motors

N.E.C. Table 22				N.E.C. Table 22			
Hp.	115V.	230V.	440V.	Hp.	115V.	230V.	440V.
1/6	3.2	1.6	...	2	24.0	12.0	....
1/4	4.6	2.3	...	3	34.0	17.0	....
1/2	7.4	3.7	...	5	56.0	28.0	....
3/4	10.2	5.1	...	7 1/2	80.0	40.0	21.0
1	13.0	6.5	...	10	100.0	50.0	26.0
1 1/2	18.4	9.2	...	...	...	...	...

For full-load currents of 208 and 200-volt motors, increase corresponding 230-volt motor full-load current by 10 and 15 per cent, respectively.

## \*Two-Phase, A.C. Motors—4 Wire

N.E.C. Table 23				N.E.C. Table 23			
Induction Type				Synchronous Type			
Squirrel-Cage and Wound Rotor				Unity Power Factor			
Hp.	110V.	220V.	440V.	Hp.	220V.	440V.	550V.
1/2	4.0	2.0	1.0	...	...	...	...
3/4	4.8	2.4	1.2	...	...	...	...
1	6.4	3.2	1.6	...	...	...	...
1 1/2	8.8	4.4	2.2	...	...	...	...
2	11.2	5.6	2.8	...	...	...	...
3	...	8.0	4.0	...	...	...	...
5	...	13.0	7.0	...	...	...	...
7 1/2	...	19.0	9.0	...	...	...	...
10	...	24.0	12.0	...	...	...	...
15	...	34.0	17.0	...	...	...	...
20	...	45.0	23.0	...	...	...	...
25	...	55.0	28.0	6.0	47.0	24.0	19.0
30	...	67.0	34.0	7.5	56.0	29.0	23.0
40	...	88.0	44.0	9.0	75.0	37.0	31.0
50	...	108.0	54.0	11.0	94.0	47.0	38.0
60	...	129.0	65.0	13.0	111.0	56.0	44.0
75	...	158.0	79.0	16.0	140.0	70.0	57.0
100	...	212.0	106.0	21.0	182.0	93.0	74.0
125	...	268.0	134.0	26.0	228.0	114.0	93.0
150	...	311.0	155.0	31.0	...	137.0	110.0
200	...	415.0	208.0	41.0	...	182.0	145.0

## \*Three-Phase, A.C. Motors

N.E.C. Table 24				N.E.C. Table 24			
Hp.	110V.	220V.	440V.	Hp.	110V.	220V.	440V.
1/2	4.0	2.0	1.0	...	...	...	...
3/4	5.6	2.8	1.4	...	...	...	...
1	7.0	3.5	1.8	...	...	...	...
1 1/2	10.0	5.0	2.5	...	...	...	...
2	13.0	6.5	3.3	...	...	...	...
3	...	9.0	4.5	...	...	...	...
5	...	15.0	7.5	...	...	...	...
7 1/2	...	22.0	11.0	...	...	...	...
10	...	27.0	14.0	...	...	...	...
15	...	40.0	20.0	...	...	...	...
20	...	52.0	26.0	...	...	...	...
25	...	64.0	32.0	7.0	54.0	27.0	22.0
30	...	78.0	39.0	8.5	65.0	33.0	26.0
40	...	104.0	52.0	10.5	86.0	43.0	35.0
50	...	125.0	63.0	13.0	108.0	54.0	44.0
60	...	150.0	75.0	16.0	128.0	64.0	51.0
75	...	185.0	93.0	19.0	161.0	81.0	65.0
100	...	246.0	123.0	25.0	211.0	106.0	85.0
125	...	310.0	155.0	31.0	264.0	132.0	106.0
150	...	360.0	180.0	37.0	...	158.0	127.0
200	...	480.0	240.0	49.0	...	210.0	168.0

For full-load currents of 208 and 200-volt motors, increase the corresponding 220-volt motor full-load current by 6 and 10 per cent respectively.

\*Currents are for motors running at speeds usual for belted motors and motors with normal torque characteristics. Motors built for specially low speeds or high torques may require more running current, in which case the nameplate current rating should be used.

†For 90 and 80 per cent power factor, the above figures should be multiplied by 1.1 and 1.25 respectively.

Current in common conductor of 2-Phase, 3-wire system will be 1.41 times value given.

## Motor Characteristics

## Direct-Current Motors

Direct-current motors are divided into three classes, designated according to the method of connecting the armature and field windings as shunt-series and compound-wound.

Alternating-current motors are divided into two general classes, induction and synchronous, while Induction motors are of two types, designated according to the type of rotor winding as the Squirrel-cage type and as the wound-rotor or slip-ring, type.

## Shunt-Wound D.C Motors

This type of motor runs at practically constant speed, regardless of the load. It is the type most generally used in commercial practice and is usually recommended where starting conditions are not unusually severe.

Speed of shunt-wound motors may be regulated in two ways, first, by inserting resistance in series with the armature, thus decreasing the speed; and second, by inserting resistance in the field circuit, thereby increasing the speed. In the former case, the speed will vary with each change in load; in the latter, the speed is practically constant for any setting of the controller. The latter is most generally used for adjustable-speed service, as in the case of machine tools.

## Series-Wound D-C Motors

This type of motor speed varies automatically with the load, increasing as the load decreases. Use of series motors is generally limited to cases where a heavy power demand is necessary to bring the machine up to speed, as in the case of certain elevator and hoist installations, for streetcars, etc. Series-wound motors should never be used where the motor can be started without load, since they will race to a dangerous degree.

## Compound-Wound D-C Motors

A combination of the shunt-wound and series-wound types combines the characteristics of both. Characteristics may be varied by varying the combination of the two windings. Generally used where severe starting conditions are met and constant speed is required at the same time.

## Squirrel-Cage Induction Motors

The most simple and reliable of all electric motors. Essentially a constant speed machine, which is adaptable for uses under all but the most severe starting conditions. Requires little attention as there are no commutator or slip rings, yet operates with good efficiency.

## Wound-Rotor (Slip-Ring) Induction Motors

Used for constant-speed service requiring a heavier starting torque than is obtainable with the squirrel-cage type. Because of its lower starting current, this type is frequently used instead of the squirrel-cage type in the larger sizes.

Wound-rotor motors are also used for varying-speed service. Speed varies with this load, so that they should not be used where constant speed at each adjustment is required, as for machine tools.

## Single-Phase Induction Motors

This motor is used, mostly in small sizes, where polyphase current is not available. Characteristics are not as good as the polyphase motor and for sizes larger than 10 hp., the line disturbance is likely to be objectionable. Are commonly used for light starting and for running loads up to 1/2 hp. Capacitor and repulsion types provide greater torque and are built in sizes up to 10 hp.

## Synchronous Motors

Run at a constant speed fixed by frequency of the system.

Require direct current for excitation and have low starting torque. For large motor-generator sets, frequency changers, air compressors, and similar apparatus which permits starting under a light load, for which they are generally used.

Are used with considerable advantage, particularly on large power systems, because of their inherent ability to improve the power factor of the system.



## Wiring for D.C. Motor Services

## Carrying Capacity Copper Wire

Size B. & S.	Diameter Inches	Pounds Bare Copper per 1000 Feet	Carrying Capacity Rubber Insulation Amperes
14	.064	12.4	15
12	.081	19.7	20
10	.102	31.4	24
8	.128	49.9	33
6	.162	79.4	46
4	.204	126	65
3	.229	159	76
2	.258	201	90
1	.289	253	107
0	.325	319	127
00	.365	402	150
000	.410	507	177
0000	.460	640	210

## Transmission of Horse Powers with 1 Volt Loss

Horse Power at 110V. 220V. 500V.	Load of Motor Amps.	Distance in Feet Different Horse Powers Can Be Transmitted With 1 Volt Loss					
		1	2	3	4	5	6
1/2	1	192	308	490	778	1232	1920
1/2	2	96	154	245	389	616	960
1/2	3	64	103	163	259	411	640
1/2	4	48	77	122	194	308	480
1/2	5	43	68	108	173	273	426
1/2	6	32	51	81	127	205	320
1/2	7	25	40	65	104	164	258
1	8	21	34	54	86	137	213
1	9	20	33	53	84	132	206
1	10	18	29	47	76	118	184
1	11	17	28	46	74	116	182
1	12	16	27	43	68	106	166
1	13	15	26	42	66	104	162
1	14	14	25	41	64	102	158
1	15	13	24	40	61	100	153
1	16	12	23	39	59	98	148
1	17	11	22	38	57	96	144
1	18	10	21	37	55	94	140
1	19	9	20	36	53	92	136
1	20	8	19	35	51	90	132
1	21	7	18	34	49	88	128
1	22	6	17	33	47	86	124
1	23	5	16	32	45	84	120
1	24	4	15	31	43	82	116
1	25	3	14	30	41	80	112
1	26	2	13	29	39	78	108
1	27	1	12	28	37	76	104
1	28	1	11	27	36	74	100
1	29	1	10	26	34	72	96
1	30	1	9	25	33	70	92
1	31	1	8	24	31	68	88
1	32	1	7	23	30	66	84
1	33	1	6	22	28	64	80
1	34	1	5	21	27	62	76
1	35	1	4	20	25	60	72
1	36	1	3	19	24	58	68
1	37	1	2	18	22	56	64
1	38	1	1	17	21	54	60
1	39	1	1	16	20	52	56
1	40	1	1	15	19	50	52
1	41	1	1	14	18	48	48
1	42	1	1	13	17	46	44
1	43	1	1	12	16	44	40
1	44	1	1	11	15	42	36
1	45	1	1	10	14	40	32
1	46	1	1	9	13	38	28
1	47	1	1	8	12	36	24
1	48	1	1	7	11	34	20
1	49	1	1	6	10	32	16
1	50	1	1	5	9	30	12
1	51	1	1	4	8	28	8
1	52	1	1	3	7	26	4
1	53	1	1	2	6	24	2
1	54	1	1	1	5	22	1
1	55	1	1	1	4	20	1
1	56	1	1	1	3	18	1
1	57	1	1	1	2	16	1
1	58	1	1	1	1	14	1
1	59	1	1	1	1	12	1
1	60	1	1	1	1	10	1
1	61	1	1	1	1	8	1
1	62	1	1	1	1	6	1
1	63	1	1	1	1	4	1
1	64	1	1	1	1	2	1
1	65	1	1	1	1	1	1
1	66	1	1	1	1	1	1
1	67	1	1	1	1	1	1
1	68	1	1	1	1	1	1
1	69	1	1	1	1	1	1
1	70	1	1	1	1	1	1
1	71	1	1	1	1	1	1
1	72	1	1	1	1	1	1
1	73	1	1	1	1	1	1
1	74	1	1	1	1	1	1
1	75	1	1	1	1	1	1
1	76	1	1	1	1	1	1
1	77	1	1	1	1	1	1
1	78	1	1	1	1	1	1
1	79	1	1	1	1	1	1
1	80	1	1	1	1	1	1
1	81	1	1	1	1	1	1
1	82	1	1	1	1	1	1
1	83	1	1	1	1	1	1
1	84	1	1	1	1	1	1
1	85	1	1	1	1	1	1
1	86	1	1	1	1	1	1
1	87	1	1	1	1	1	1
1	88	1	1	1	1	1	1
1	89	1	1	1	1	1	1
1	90	1	1	1	1	1	1
1	91	1	1	1	1	1	1
1	92	1	1	1	1	1	1
1	93	1	1	1	1	1	1
1	94	1	1	1	1	1	1
1	95	1	1	1	1	1	1
1	96	1	1	1	1	1	1
1	97	1	1	1	1	1	1
1	98	1	1	1	1	1	1
1	99	1	1	1	1	1	1
1	100	1	1	1	1	1	1

HORSE POWER AT			Load of Motor Amps.	DISTANCE IN FEET DIFFERENT HORSE POWERS CAN BE TRANSMITTED WITH 1 VOLT LOSS				
110V.	220V.	500V.		1	2	3	4	5
....	....	1½	1	2433	3122	3940	4928	6271
....	....	1	2	1216	1561	1970	2464	3135
....	1½	....	2.30	1057	1357	1713	2142	2726
....	....	2	4	608	780	985	1232	1567
1½	1	....	4.50	540	700	875	1095	1395
....	....	3	6	405	520	656	821	1045
....	....	4	7.50	328	416	525	657	836
1	2	....	9	270	347	438	547	697
....	....	....	9.30	261	335	423	530	674
....	3	7½	12.50	194	250	315	394	501
....	....	10	16.50	147	189	239	298	380
2	4	....	18	135	173	219	273	348
....	5	....	21.10	115	146	186	233	297
3	....	15	25	97	125	157	197	250
....	7½	....	28.20	86	110	140	174	222
4	....	20	33.15	76	94	119	148	189
....	10	....	37.60	64	83	104	131	164
5	....	25	42	58	73	93	116	143
....	30	....	49.70	49	64	79	99	126
7½	15	....	56.50	43	55	70	87	111
....	40	....	66.30	36	47	60	79	95
10	20	....	75.30	32	41	52	65	82
....	50	....	82.80	....	37	47	59	75
....	25	....	94.10	....	....	41	52	66
....	60	....	99.40	....	....	39	49	63
15	30	....	113	....	....	....	43	55
....	70	....	116	....	....	....	42	54
....	80	....	132	....	....	....	....	47
20	40	90	150	....	....	....	....	41



## Physical Properties of Various Metals

Name of Substance	Physical Condition or Composition of Substance	Resistance in Ohms per Cir. Mil. Foot at 68°F.
Copper	Annealed	10.4
Platinum	Pure	57.4
German Silver	18%-Copper-Nickel-Zinc	200
German Silver	30%-Copper-Nickel-Zinc	290
Ia Ia Soft	Copper-Nickel	283
Advance	Copper-Nickel	294
Constantin	Copper-Nickel	300
Ideal	Copper-Nickel	300
Krupp	Nickel-Steel	511
Superior	Nickel-Steel	517
Climax	Nickel-Steel	525
Phenix	Nickel-Steel	520
Excello	Nickel-Chromium	550
Nichrome	Nickel-Chromium	600
Calido	Nickel-Chromium	600
Nichrome II	Nickel-Chromium	655
Calorite	Nickel-Chromium	720
Carbon	Retort	4325
Graphite	Acheson	4875
Carb. Filament	Treated	6950

Name of Substance	Temperature Coefficient of Resistivity for 1°F.	Specific Gravity	Approx. Working Temp. in Deg. F.	Approx. Melting Point in Deg. F.
Copper	0.00393	8.89	500	1980
Platinum	0.00204	21.5	2700	3190
German Silver	0.000172	8.5	500	1880
German Silver	0.000111	8.5	700	2120
Ia Ia Soft	0.00000278	8.4	700	2250
Advance	Nil	8.9	700	2300
Constantin	0.00000278	8.6	700	2200
Ideal	0.00001	8.85	700	2200
Krupp	0.00039	8.10	1100	2400
Superior	0.00045	8.4	1000	2400
Climax	0.0004	8.14	1000	2300
Phenix	0.0003	8.09	1000	2100
Excello	0.00009	8.9	2000	3000
Nichrome	0.00024	8.15	2200	2800
Calido	0.00019	8.02	2000	2800
Nichrome II	0.00009	8.02	2000	2800
Calorite	Not Constant	1.8	1600	2370
Carbon	Not Constant	2.2	6000	6700
Graphite	Not Constant	2.2	6000	6700
Carb. Filament	Not Constant	.....	3500	6700

## Wire Gage Standards

DECIMAL PARTS OF AN INCH									
Wire Gage No.	American or Brown & Sharpe Gage	Birmingham or Stubbs' Gage	Washburn & Moen Wire Gage	American S. & W. Co's Music Wire Gage	Imperial Wire Gage	Stubs' Wire Gage	U.S. Steel Standard for Plate Gage		
0000000	.651354	.....	.4900	.....	.500	.....	.500		
000000	.580049	.....	.4615	.....	.464	.....	.46875		
00000	.516549	.....	.500	.....	.4305	.....	.4375		
0000	.460	.....	.454	.....	.3938	.....	.40625		
000	.40964	.....	.425	.....	.3625	.....	.375		
00	.3648	.....	.380	.....	.3310	.....	.34375		
0	.32486	.....	.340	.....	.3065	.....	.3125		
1	.2893	.....	.300	.....	.2830	.....	.28125		
2	.25763	.....	.284	.....	.2625	.....	.265625		
3	.22942	.....	.259	.....	.2437	.....	.250		
4	.20431	.....	.238	.....	.2253	.....	.234375		
5	.18194	.....	.220	.....	.2070	.....	.21875		
6	.16202	.....	.203	.....	.1920	.....	.203125		
7	.14428	.....	.180	.....	.1770	.....	.1875		
8	.12849	.....	.165	.....	.1620	.....	.171875		
9	.11443	.....	.148	.....	.1483	.....	.15625		
10	.10189	.....	.134	.....	.1350	.....	.140625		
11	.090742	.....	.120	.....	.1205	.....	.125		
12	.080808	.....	.109	.....	.1055	.....	.109375		
13	.071961	.....	.095	.....	.0915	.....	.09375		
14	.064084	.....	.083	.....	.0800	.....	.08125		
15	.057068	.....	.072	.....	.0720	.....	.0703125		
16	.05082	.....	.065	.....	.0625	.....	.0625		
17	.045257	.....	.058	.....	.0540	.....	.05625		
18	.040303	.....	.049	.....	.0475	.....	.050		
19	.03589	.....	.042	.....	.0410	.....	.04375		
20	.031961	.....	.035	.....	.0348	.....	.0375		
21	.028462	.....	.032	.....	.0317	.....	.034375		
22	.025347	.....	.028	.....	.0286	.....	.03125		
23	.022571	.....	.025	.....	.0258	.....	.028125		
24	.0201	.....	.022	.....	.0230	.....	.025		
25	.0179	.....	.020	.....	.0204	.....	.021875		
26	.01594	.....	.018	.....	.0181	.....	.01875		
27	.014195	.....	.016	.....	.0173	.....	.0171875		
28	.012641	.....	.014	.....	.0162	.....	.015625		
29	.011257	.....	.013	.....	.0150	.....	.0140625		
30	.010025	.....	.012	.....	.0140	.....	.0125		
31	.008928	.....	.010	.....	.0132	.....	.0109375		
32	.00795	.....	.009	.....	.0128	.....	.01015625		
33	.00708	.....	.008	.....	.0118	.....	.009375		
34	.006304	.....	.007	.....	.0104	.....	.00859375		
35	.005614	.....	.005	.....	.0095	.....	.0078125		
36	.005	.....	.004	.....	.0090	.....	.00703125		
37	.004453	.....	.....	.....	.0085	.....	.006640625		
38	.003965	.....	.....	.....	.0080	.....	.00625		

## Properties of Steel Wire

## Weight, Length and Strength

No. Roeb-ling Gauge	Diam. Inches	Area Square Inches	Breaking Strength 100,000 Lbs. per Sq. Inch	WEIGHT IN LBS. Per 1000 Ft.	Per Mile	Feet in 2000 Pounds
6-0	.460	.166190	16619	558.4	2948	3582
5-0	.430	.145220	14522	487.9	2576	4099
4-0	.393	.121304	12130	407.6	2152	4907
3-0	.362	.102922	10292	345.8	1826	5783
2-0	.331	.086049	8605	289.1	1527	6917
0	.307	.074023	7402	248.7	1313	8041
1	.283	.062902	6290	211.4	1116	9463
2	.263	.054325	5433	182.5	964	10957
3	.244	.046760	4676	157.1	830	12730
4	.225	.039761	3976	133.6	705	14970
5	.207	.033654	3365	113.1	597	17687
6	.192	.028953	2895	97.3	514	20559
7	.177	.024606	2461	82.7	437	24191
8	.162	.020612	2061	69.3	366	28878
9	.148	.017203	1720	57.8	305	34600
10	.135	.014314	1431	48.1	254	41584
11	.120	.011310	1131	38.0	201	52631
12	.105	.008659	866	29.1	154	68752
13	.092	.006648	665	22.3	118	89525
14	.080	.005027	503	16.9	89.2	118413
15	.072	.004072	407	13.7	72.2	146198
16	.063	.003117	312	10.5	55.3	191022
17	.054	.002290	229	7.70	40.6	259909
18	.047	.001735	174	5.83	30.8	343112
19	.041	.001320	132	4.44	23.4	450856
20	.035	.000962	96	3.23	17.1	618620
21	.032	.000804	80	2.70	14.3	740193
22	.028	.000616	62	2.07	10.9	966651
23	.025	.000491	49	1.65	8.71	.....
24	.023	.000415	42	1.40	7.37	.....
25	.020	.000314	31	1.06	5.58	.....
26	.018	.000254	25	.855	4.51	.....
27	.017	.000227	23	.763	4.03	.....
28	.016	.0002011	20	.676	3.57	.....
29	.015	.0001767	18	.594	3.14	.....
30	.014	.0001539	15	.517	2.73	.....
31	.0135	.0001431	14	.481	2.54	.....
32	.013	.0001327	13	.446	2.36	.....
33	.011	.0000950	9.5	.319	1.69	.....
34	.010	.0000785	7.9	.264	1.39	.....
35	.0095	.0000709	7.1	.238	1.26	.....
36	.0090	.0000636	6.4	.214	1.13	.....

This table was calculated on a basis of 483.84 pounds per cubic foot for steel wire. Iron wire is a trifle lighter.

The breaking strengths are calculated for 100,000 pounds per square inch throughout, simply for convenience, so that the breaking strength of wires of any strength per square inch may be quickly determined by multiplying the values given in the tables by the ratio between the strength per square inch and 100,000. Thus, a No. 15 wire, with a strength per square inch of 150,000 pounds, has a breaking strength of

$$407 \times \frac{150,000}{100,000} = 610.5 \text{ pounds.}$$

## Bus Bar Copper Data

Thickness In.	Width In.	Wt. per Lin. Ft. Pounds	CARRYING CAPACITY @1000 Amps.	@800 Amps.	Thickness In.	Width In.	Wt. per Lin. Ft. Pounds	CARRYING CAPACITY @1000 Amps.	@800 Amps.
1/16	1 1/2	.121	31	25	1/4	1	.964	250	200
1/16	3 1/4	.181	47	38	1/4	1 1/4	1.21	313	250
1/16	1	.241	63	50	1/4	1 1/2	1.45	375	300
1/8	1 1/2	.241	63	50	1/4	1 3/4	1.69	438	350
1/8	3 1/4	.362	94	75	1/4	2	1.93	500	400
1/8	1	.482	125	100	1/4	2 1/2	2.41	625	500
1/8	1 1/4	.603	156	125	1/4	3	2.89	750	600
1/8	1 1/2	.723	188	150	3/8	1	1.45	375	300
1/8	1 3/4	.844	219	175	3/8	1 1/4	1.81	469	375
1/8	2	.964	250	200	3/8	1 1/2	2.17	563	450
1/8	2 1/2	1.21	313	250	3/8	1 3/4	2.53	657	525
1/8	3	1.45	375	300	3/8	2	2.89	750	600
1/4	1 1/2	.482	125	100	3/8	2 1/2	3.62	938	750
1/4	3 1/4	.723	188	150	3/8	3	4.34	1125	900



# Decimal Equivalents

$\frac{1}{64}$		.015625	$\frac{33}{64}$		.515625
$\frac{3}{64}$	$\frac{1}{32}$	.03125	$\frac{35}{64}$	$\frac{17}{32}$	.53125
		.046875			.546875
$\frac{5}{64}$	$\frac{1}{16}$	.0625	$\frac{37}{64}$	$\frac{9}{16}$	.5625
		.078125	$\frac{39}{64}$	$\frac{19}{32}$	.578125
$\frac{7}{64}$	$\frac{3}{32}$	.09375			.59375
		.109375	$\frac{41}{64}$	$\frac{5}{8}$	.609375
$\frac{9}{64}$	$\frac{1}{8}$	.125			.625
		.140625	$\frac{43}{64}$	$\frac{21}{32}$	.640625
$\frac{11}{64}$	$\frac{5}{32}$	.15625			.65625
		.171875	$\frac{45}{64}$	$\frac{11}{16}$	.671875
$\frac{13}{64}$	$\frac{3}{16}$	.1875			.6875
		.203125	$\frac{47}{64}$	$\frac{23}{32}$	.703125
$\frac{15}{64}$	$\frac{7}{32}$	.21875			.71875
		.234375	$\frac{49}{64}$	$\frac{3}{4}$	.734375
$\frac{17}{64}$	$\frac{1}{4}$	.25			.75
		.265625	$\frac{51}{64}$	$\frac{25}{32}$	.765625
$\frac{19}{64}$	$\frac{9}{32}$	.28125			.78125
		.296875	$\frac{53}{64}$	$\frac{13}{16}$	.796875
$\frac{21}{64}$	$\frac{5}{16}$	.3125			.8125
		.328125	$\frac{55}{64}$	$\frac{27}{32}$	.828125
$\frac{23}{64}$	$\frac{11}{32}$	.34375			.84375
		.359375	$\frac{57}{64}$	$\frac{7}{8}$	.859375
$\frac{25}{64}$	$\frac{3}{8}$	.375			.875
		.390625	$\frac{59}{64}$	$\frac{29}{32}$	.890625
$\frac{27}{64}$	$\frac{13}{32}$	.40625			.90625
		.421875	$\frac{61}{64}$	$\frac{15}{16}$	.921875
$\frac{29}{64}$	$\frac{7}{16}$	.4375			.9375
		.453125	$\frac{63}{64}$	$\frac{31}{32}$	.953125
$\frac{31}{64}$	$\frac{15}{32}$	.46875			.96875
		.484375			.984375
	$\frac{1}{2}$	.5		$1$	1.



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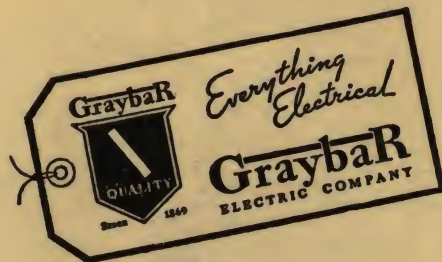
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# 97 Convenient Places

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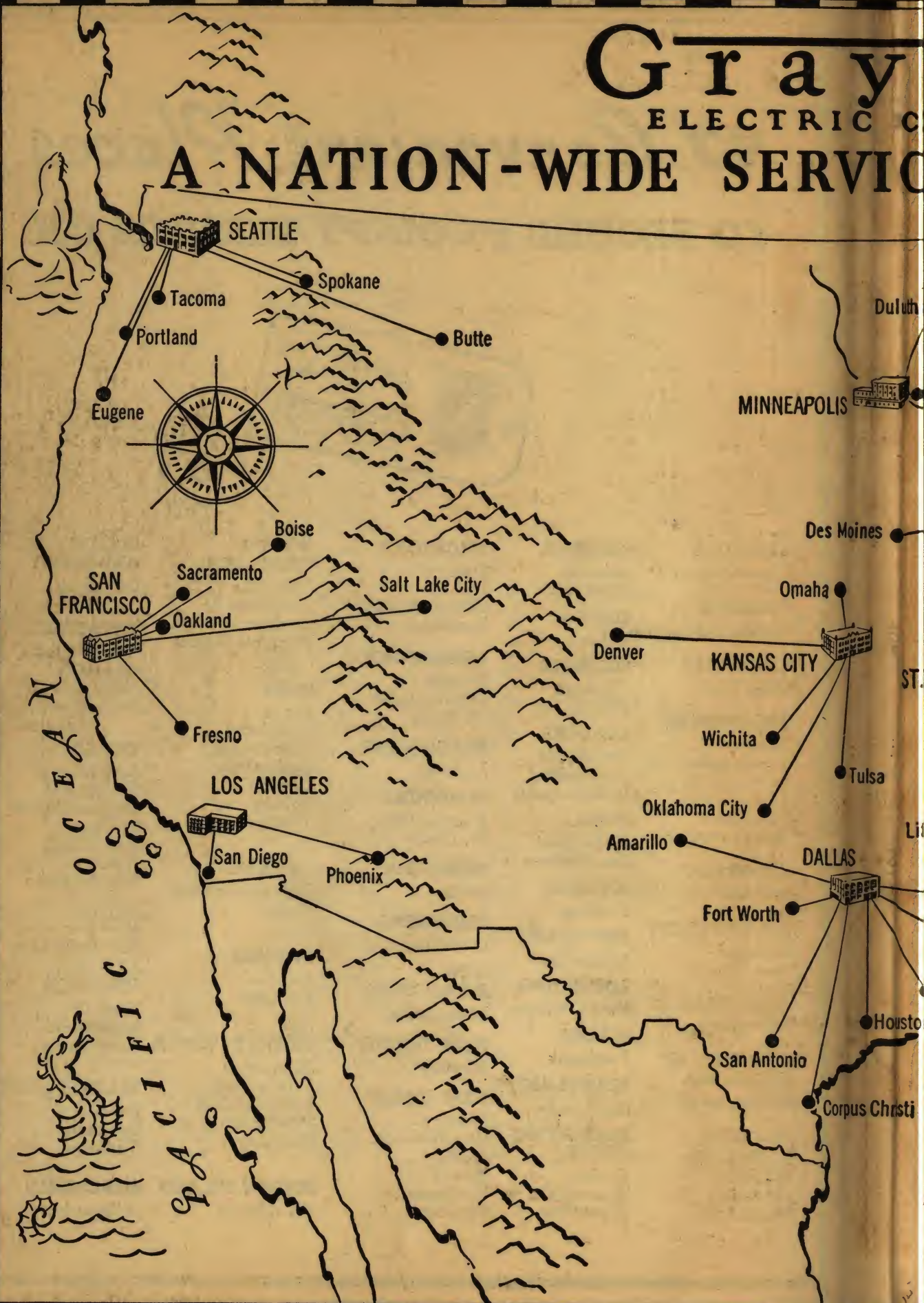
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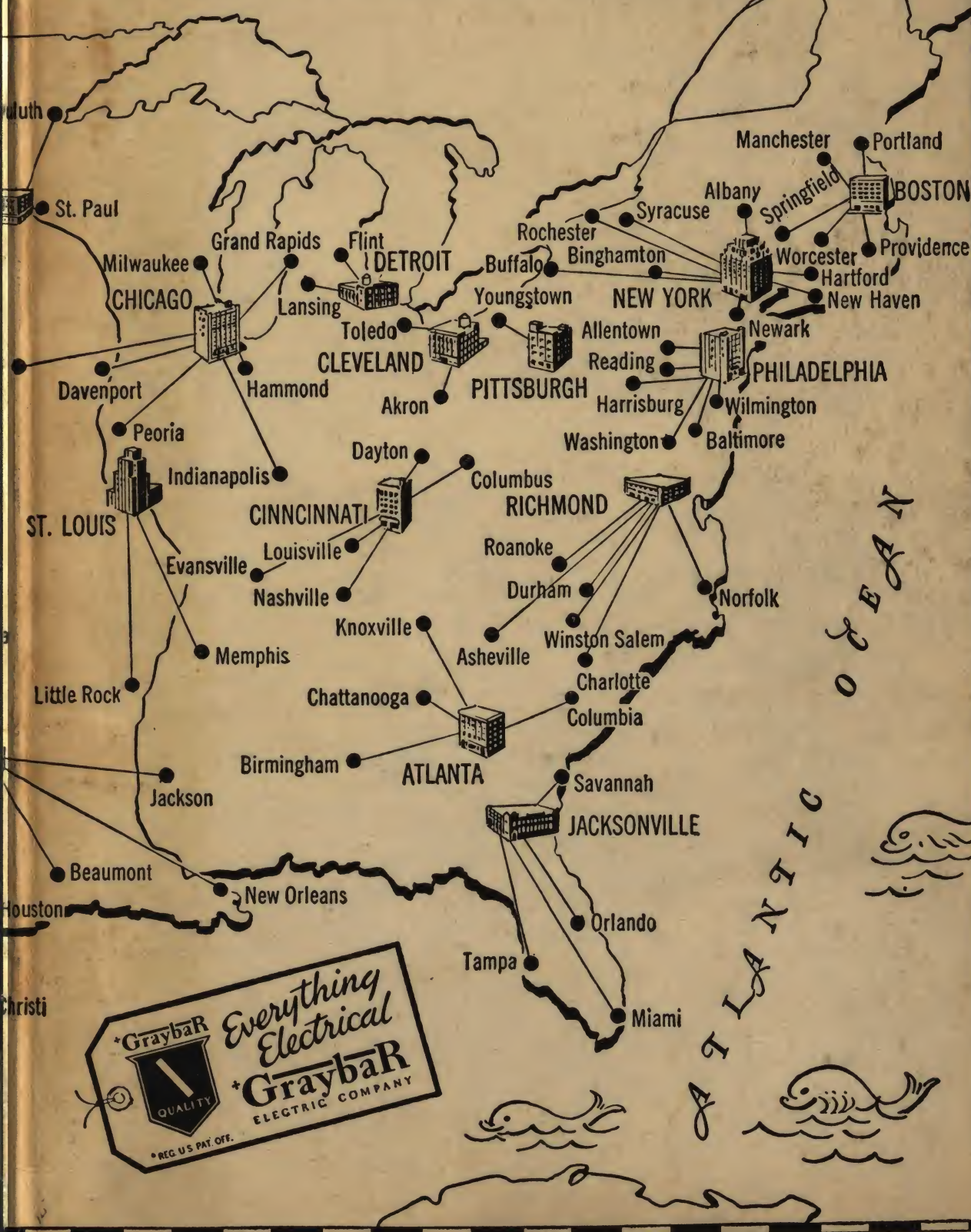
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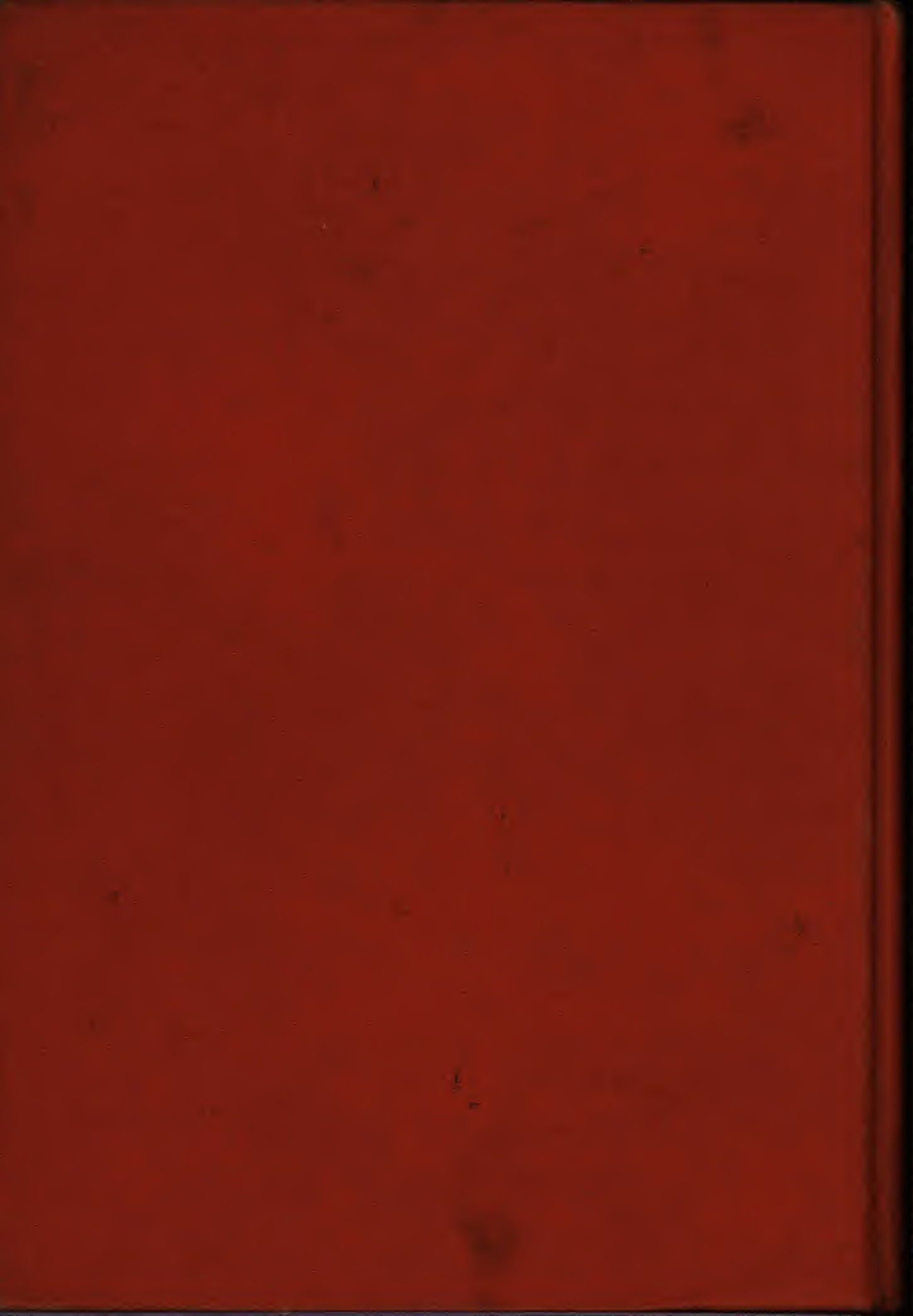




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